Value Added Taxation in Developing Countries

edited by
Malcolm Gillis,
Carl S. Shoup,
and Gerardo P. Sicat

Symposium

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Preface

In recent years the value added tax (VAT) has come into wide favor as a desirable tax vehicle in developing countries. During national tax reforms the VAT has often been adopted to replace more complicated sets of taxes on the sale of commodities and services.

Because of the growing interest in the VAT, the World Bank organized a conference to evaluate the issues and principles relevant to developing countries. The principal objectives were to assess the experience of both developed and developing countries that have adopted this tax and to extract the useful lessons of experience to guide tax reform in developing countries. This volume contains papers from that conference. The chapters provide a cross-section of the issues and describe the state of knowledge on the VAT. Researchers and policymakers can thus gauge the direct relevance of a VAT to developing countries with different levels of administrative capacity. It is hoped that the collection will help foster improved taxation and efficient allocation of resources in developing countries.

Support and interest in this project was robust in the World Bank, especially from operational colleagues who work on tax reform issues. From the beginning, encouragement was received from Anne Krueger and Gregory Ingram. Cooperation from the International Monetary Fund was extended by Vito Tanzi, of the Fiscal Affairs Department, and also Alan Tait, who directly contributed to the meeting.

The list of contributors attests to the number of international specialists and other experts who helped to make this meeting productive. In addition, the following fiscal economists and tax experts added substance to the discussion or to the planning of the conference: Richard Bird, Richard Goode, Arnold Harberger, Stephen R. Lewis, Richard Musgrave, and Oliver Oldman.

For bringing the manuscripts to final fruition, we would like to thank Daisy Paul, Indermit Gill, and the publications staff of the Bank.

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Summary

Carl S. Shoup

The chapters in this volume fall into four groups. The first three chapters are on general issues in value added taxation: choices to be made in selecting a particular type of value added tax (VAT), effects of value added taxation on the price level and on the balance of payments, and tax incidence and income distribution theory applicable to such taxation.

The second group of six chapters deals with certain lessons from, and certain unresolved problems shown by, experience in developed countries with the VAT: border tax adjustments, treatment of farmers and small firms, services in general, the financial sector, housing, and the possibilities for a VAT at the state level in a federal system.

Third is a group of five chapters on lessons learned in certain developing countries that have used a VAT. These cover two countries in Latin America (Argentina and Brazil), one in Asia (Republic of Korea), and one in Africa (Côte d'Ivoire) as well as the general Sub-Saharan region of Africa.

The last group covers certain administrative and compliance problems in implementing a VAT. A general survey is followed by chapters on the experience under Colombia's VAT, the development of a computer-supported VAT information system in Indonesia, and the chief administrative issues in the United Kingdom, with data on compliance and administrative costs.

General Issues on the VAT

In the initial chapter of the first group, Carl Shoup describes the main choices that must be made in constructing a VAT. For example, shall it be restricted to consumer goods, or shall it also include the net addition to the stock of producer goods? Shall the tax be computed for each business firm by subtracting from that firm's sales the purchases it has made from other firms or, instead, by adding the amounts paid by the firm to its factors of production? This continues through eight sets of choices. The different aims are achieved by each choice within a given group. Not every possible choice within any one set is compatible with every choice in each of the remaining sets, and this incompatibility problem among choices is depicted in tabular form.

In what countries, if any, did the introduction of a VAT appear to cause a rise in the price level? In what others did it seem to accelerate an already existing inflation or, at the other extreme, have no effect on the price index? The same questions arise about an increase in the rate of an already existing VAT. Alan Tait gives examples of each of these cases in some detail and suggests grouping the VAT countries according to these categories. He concludes that clearly it is possible to introduce a VAT as a substitute tax without raising the consumer price index or accelerating its increase, depending on circumstances. A companion question is the effect of a VAT on the foreign trade balance. Here, general analysis suggests that the net advantage or disadvantage of introducing a VAT is unlikely to be large. These two analyses are backed up by tables of VAT revenue, country by country and year by year, as a percentage of total tax revenue and of gross domestic product (GDP).

Who bears the burden of VAT? Is that tax at all progressive or inherently regressive? Charles McLure, Jr.'s chapter sets out the familiar conceptual and statistical

problems facing any effort to answer these questions. It is necessary to distinguish carefully between questions that call for general equilibrium analysis and those that do not and to be quite clear about the questions when using general equilibrium analysis. These warnings are cast in terms of taxes in general. For the VAT, there are certain common suppositions, such as general coverage, that are in fact not usually valid. As a consequence, a partial equilibrium analysis focused only on sales to consumers is not satisfactory, and a general equilibrium framework that allows for input-output relations is necessary— but this kind of analysis is yet to be done. All in all, McLure sets up enough warning signs to exercise the hardiest traveler in this difficult territory.

Lessons from Developed Countries

How shall international trade be treated under a VAT? Shall imports be taxable and exports exempt (following the destination principle and taxing expenditures on final goods within the country) or the reverse (following the origin principle and indirectly taxing factor incomes earned within the country)? In a thorough treatment of interjurisdictional coordination of VATs, Sijbren Cnossen shows that the answer depends on attitudes toward interjurisdictional equity, locational neutrality, and administrative feasibility. He reaches a rather exciting conclusion, not at all in the traditional line of thought, about the last of these points: the destination principle may be implemented without border controls (contrary to established doctrine), so that there is no need to move to the origin principle just to eliminate such controls within a common market. Acceptance of this conclusion would relieve the members of the European Communities (EC) from the task of agreeing on a common level of VAT rates. Cnossen also analyzes the somewhat different coordination problem facing the states of the United States, which employ the retail sales tax rather than the VAT.

Small business firms, especially those without a fixed place of business, and farmers in general commonly find compliance with a VAT so onerous and evasion so easy that they are granted either exemptions or special regimes in all countries using this tax. John Due's country-by-country description and general analysis of the problem serves as a guide to any country introducing a VAT. The techniques include outright exemption, registration but no payment of tax, computation of tax by using sales or purchase data instead of using value added directly, and negotiation with tax officials. There are similar options for treatment of farmers.

These techniques are examined as they are used for VATs first in the European Common Market countries and then in other parts of the world, notably Latin America. Retail, wholesale, and manufacturers' sales taxes are covered, and the several dividing lines available are critiqued (sales volume, capital investment or profit, mechanization in production, number of employees, and type of industry).

The sale of services, as distinguished from the sale of tangible goods, is an important part of any country's economy, yet it has largely been left outside the scope of the broadly based taxes other than the VAT. One of the virtues of the VAT is therefore commonly said to be this inclusion of services, which, in varying degree, is almost universal in countries using this tax. In the first comprehensive analysis of service taxation under a VAT, John Kay and Evan Davis conclude that the difficulties encountered under the VAT are not much greater, if not fewer, than under other types of tax, but that the experience in various countries shows that the effort has been worthwhile and that services can and should be included, even though special regimes may be necessary in certain cases. Indeed, complete exemption of all services would exclude from the tax some 45 to 78 percent of a country's GDP, as shown by a table for thirty-two countries (purely consumer spending on services is a much smaller proportion, but still very significant). Kay and Davis compare the ability of a VAT and certain other taxes to cover services adequately; examine the relevance of self-supply, location of supply, and public provision and purchase of services; and then consider eleven types of service under a VAT: retailing, health and education, postal service, secondhand goods, betting, insurance, travel agencies, advertising and the media, durable goods, housing, and financial services. Insurance, housing, and financial are noted only briefly, since they are covered in detail in other chapters.

Perhaps the most difficult sector of all to deal with under a VAT is financial services, notably banking and insurance services. In a comprehensive and detailed analysis, Malcolm Gillis concludes that truly satisfactory solutions have not yet been found in Europe and that the positive lessons for developing countries are therefore few. This is especially unfortunate, since inappropriate application of the VAT to financial services may easily inhibit development of the financial sector. This is made clear by showing the role of these services in developing countries. The European custom of exempting (zero-rating) banking services and insurance services provokes economic distortions—some favoring, some handicapping, those industries. The regimes of Israel and New Zealand provide no easy solutions. The particular difficulties of attempting to achieve neutrality are examined, with special attention to international capital mobility in an open economy, which is considered important enough in many developing economies to warrant close attention to the likely effect of a VAT in this area. Gillis examines the three options

for a developing country (full taxation, exemption, and zero-rating) and, after a detailed analysis, concludes that, apart from administrative considerations (chiefly, making tax refunds), the zero-rating technique is preferred. If this is administratively infeasible, four alternative regimes are suggested, but not urged.

One sector of the real estate market, housing and housing services, is covered by Robert Conrad, who notes problems arising under the current treatment in European VATs and suggests the alternative of a tax on housing rather than on flows of housing services. Housing causes problems under a VAT because of the prevalence of owner-occupied housing, which calls for some VAT provisions that will reach consumption yet not deny credit for VAT paid at a previous stage. In addition, housing involves small firms and self-construction, which raises administrative problems. The practice in the EC countries is quite mixed, for both housing purchased by the occupiers and housing supplied by rental. In the nine countries covered (that is, excluding the more recent members), housing sales are treated alike in the major provisions by only two countries; there is somewhat more, but far from complete, uniformity in leasing and letting. Much of this chapter is devoted to the proposed alternative: a VAT restricted to sales of housing, old or new, which creates no incentive to change the allocation of housing between owner-occupiers and renters.

Can states, in a federation, draw on the VAT? Satya Poddar compares three options:

- A national VAT, uniform across the country, with the states sharing the revenue according to some formula
- State VATs, levied on the financial base of each state, but using either the origin or the destination principle
- A joint national-state VAT, with the national tax levied uniformly across the country and the states setting their own rates.

Poddar favors the third option, because it allows each state to levy the rate it desires, while a uniform base is maintained across the country. The revenue-sharing option allows the total tax revenue to be allocated according to fiscal need and capacity, not just according to where the final sale occurs. It would also be the simplest to administer. The second option would give power to the states to determine just what should be taxed under the VAT in each state, but this would markedly increase administrative and compliance problems. The issues that would arise if all states used the origin principle under this option are examined, first, for the case in which the VAT rates are uniform across states and, second, for the case of variable rates across states. In this connection, the experience of the Brazilian states with the VAT is reviewed. The analysis is repeated for the case in which all states use the destination principle, with special attention to the zero-rating of interstate sales and the tax-credit clearance mechanism to avoid a need for border control on such sales. This option of independent state VATs not linked to a national VAT is a complex one.

Lessons from Developing Countries

Experience with the VAT in certain developing countries is discussed in six chapters, each of which is devoted to a particular country rather than, as in the preceding chapters, to a particular problem. Osvaldo Schenone concentrates on four areas in the Argentine experience with the VAT: international trade, the type of VAT, regional and sectoral promotion, and agriculture. In the last area he shows that excluding farmers from the VAT (until 1983) distorted resource allocation despite the presumptive tax credit granted to users of agricultural products. Schenone also traces the history of the VAT in Argentina, where it replaced, not a turnover tax, but a sales tax on manufacturers, construction, and certain services, with limited provision for avoiding multiple taxation. Since this tax was never a main component of the tax system (in contrast to the turnover, "cascade" general sales taxes of the European countries), the VAT as a replacement tax has, not surprisingly, occupied a modest place in the Argentine system. The Argentine VAT is exceptional also because it is an income type of VAT, although the depreciation deductions it allows seem so generous that the tax becomes a hybrid income-consumption type of VAT. Evasion has apparently been a problem, judging by the facts that the VAT revenue as a percentage of GDP has been low (only about a fifth of the tax rate, even considering the exemptions) and that the base for the income type of VAT is, of course, considerably less than the gross national product (GNP).

Brazil is unique in employing two VATs: one at the federal level, restricted to manufacturers, the other levied by the states on all stages, including retail. Carlos Longo describes how these taxes came into being in 1967 and replaced federal wholesale consumption taxes and a state turnover cascade tax. He pays particular attention to the use of the origin principle by the states, which is exceptional among VAT jurisdictions, and concludes that the destination principle should be substituted. The numerous restrictions and special provisions in the states' VAT indicate some of the problems encountered in trying to use a VAT at this level. Yet the tax is thought to be well anchored in the state fiscal system, and chief issue seems to be whether the states shall be granted more flexibility in setting their rates and defining the tax base.

Korea adopted a VAT in 1977 to replace a cascade type turnover tax and several taxes on particular commodities. Seung Soo Han describes the changeover procedure, which involved elaborate preparations to acquaint the business community with its obligations under the new levy. The preparations included a movie about the VAT, which was shown in all the movie theaters in Korea, and three trial runs on filing the new tax return, which engaged virtually every potential taxpayer. Much research went into framing this change in tax policy. Han's point-by-point description of the VAT tax base and the administrative techniques used to collect the tax afford an unusually clear picture of a VAT in operation. For each transaction computers cross-checked the purchase invoice against the sale invoice; in the second half of 1983, 20.9 million tax invoices were checked in this manner. The new tax also has many aspects to ensure equity, and it has influenced prices, exports, and investment. At a 10 percent rate and with a special regime for small taxpayers, the VAT yields about one-fifth of total national and local tax revenue. Clearly, it seems a permanent part of the tax system. Problems that remain include the sometimes fraudulent use of the small-taxpayer regime, the exemption of farmers, fishermen and the financial sector, and the untaxed personal services of lawyers and other professional people.

The VAT in the Côte d'Ivoire exemplifies the limited type of VAT that developed gradually and without much difficulty from a series of cruder taxes. It started as a cascade type of turnover tax in 1950; evolved into a production tax during 1957–59, while the country was a territory of the French West African Federation; and then, at independence, became a VAT that covers only manufacturing and other production, but which is supplemented by a tax on services that is on total receipts, not just value added. Betty Heian and Terry Monson describe this development in detail, present the structural features of these two taxes, give buoyancy and elasticity estimates (relatively high), and evaluate the taxes with respect to equity (they are progressive because the food segment of family budgets becomes less important as income increases, and agriculture and fisheries are exempt) and resource allocation (they are more nearly neutral than the predecessor production tax). These two taxes may possibly develop into one comprehensive VAT as the informal sector becomes more integrated with the modern sector. This may be gradual, however, since the Côte d'Ivoire remains primarily an agricultural nation that exports a large part of its output.

In their chapter on consumption taxes in Sub-Saharan Africa, Zmarak Shalizi and Lyn Squire develop some general rules of action to guide these countries toward a more extensive and better organized system of consumption. The VAT is noted only briefly, but the reader may infer the significant role it might play in these countries in the kind of tax reform Shalizi and Squire advocate: building on existing instruments with noncascade features and coordinating trade taxes with domestic taxes to mimic a consumption tax. For example, they suggest increasing taxation of domestically produced consumer goods rather than imposing import duties on intermediate goods as a way to reduce effective protection; minimizing the number of tax changes over the years to reduce uncertainty; and, in particular, avoiding short-run tax measures that will ultimately have to be reversed if an acceptable consumption tax is to be constructed. Fifteen countries have some kind of tax that allows for exemptions or credits as a minimum on domestic interfactory sales and in some cases on imported inputs, which provides a beginning for a system that will meet the authors' objectives. The general propositions advanced are illustrated by the case of Malawi, which uses the "ring" system for its single-stage manufacturers tax.

Administrative Issues and Implementation of a VAT

In a detailed, highly organized analysis, Milka Casanegra de Jantscher describes the problems encountered in administering a VAT in developing countries. The relative importance of the VAT is given for each country in a table presenting GNP per capita, VAT revenue as a percentage of GDP and of total tax revenue, the VAT rate or rates, and the year of introduction. Three structural features of the VAT have major administrative implications: number and level of tax rates, exemptions and zero-rating, and the treatment of small enterprises. Introductory measures needed to ensure success with the tax include publicity, lead-in-time, certain organizational issues, and staffing requirements and training, as well as some miscellaneous problems. The main issues of VAT administration are: taxpayer identification, invoicing and bookkeeping requirements, rules for filing returns and making payments, auditing programs, refunds, and penalties. Collection costs are also a concern.

The broadly based neutral VAT found in textbooks is quite different from the VAT prevailing in most developing countries, and this difference results largely from administrative constraints: "in developing countries tax administration *is* tax policy." Multiple VAT rates, zero-rating with refunds, and numerous exemptions of specified goods can be accommodated only at high administrative and compliance costs.

Particular attention is given to the problems of small enterprises, taxpayer identification, invoicing and bookkeeping requirements, and selection of cases for audit. Despite all the obstacles, Casanegra concludes that some developing countries "are administering VAT with remarkable success."

In contrast, the chapter by Guillermo Perry and Alba Lucia Orozco de Triana describes the structure and administration of the VAT in one country, Colombia. Structural problems and issues of equity and economy are discussed, but the chapter concentrates on administration and compliance. Three dates are important: 1968, when a single-stage tax was applied at the manufacturing level; 1974, when the value added technique was introduced for this tax, which incorporated a refund system and included some services; and 1983, when coverage of the VAT was extended to the retail level, with still more services included. The authors compare tax structure and administration from one period to the next and give particular attention to comparing the VAT before and after it was extended to the wholesale and retail sectors. In that comparison they emphasize the issues of neutrality and control and conclude that, with respect to these two issues, it might have been better if the 1983 reform had extended the VAT only to wholesalers, perhaps adopting a mixed wholesaler-large retailer framework. The regressive effects of a single VAT rate are unacceptable in a country such as Colombia, yet, when the tax is extended to the retail stage, administrative problems make it impossible to have considerable differences in rates.

The chapter by Hamonangan Hutabarat and Malcolm Lane is the most technically focused in this section and is based on the experience of the authors in helping implement major income tax reform and introduce a VAT at the manufacturers level. The important decisions that had to be made are shown step by step: the development of an identification numbering system for all taxes, both direct and indirect; the choice of a vendor for the hardware and the software acquisitions (in Indonesia, the single most important consideration was the support capability of the vendor); the decision to centralize data entry at one location on a mainframe computer or to decentralize it to the sixty-nine district tax offices through microcomputers (the latter was the only practicable method in a large country such as Indonesia); and so on. During this process the fundamental principle of simplicity should be adhered to as closely as possible.

The Indonesian Department of Finance faced an immense task, even with all the assistance that IBM (the vendor) could supply. Planning for growth in the future requires knowledge of the ease with which a given type of system can be transformed into a larger one; for example, can the software on a given microcomputer be moved easily to a minicomputer, and must the documentation be translated into the language of the country where it is to be used? Typically, there will be no off-the-shelf software that will meet tax computerization needs, so the Finance Department's technical personnel face the awesome task of writing it. If a floppy disk is accidentally destroyed, has the taxpayer information been recorded elsewhere as a backup? Cross-checking vendor tax and vendee tax credits has been quite difficult on a comprehensive scale (as described for Korea, above), despite the powerful computer system, and, when implemented, cross-checking will be restricted to certain types of cases. The chapter ends with a checklist of eight essential measures to be taken before starting the system, a list of pitfalls to be avoided in computerizing for a VAT, and a summary of principles to be followed. "Perhaps the most important lesson learned in the computerization efforts in Indonesia is that microcomputers are by far the easiest computer systems to master and use in a developing country where there is a shortage of technical personnel."

The chapter by Cedric Sanford and Michael Godwin on compliance costs—the costs to the taxpayer of complying with the tax law and regulations on record keeping and filling out tax returns—is unusual in that the subject has been little studied. The first half of the chapter uses data obtained from a 1977–78 survey on compliance mailed to some 9,000 business firms registered under a VAT, which yielded some 3,000 usable returns. Information on administrative costs, in contrast, was derived largely from published sources. The standard tax rate at that time was only 8 percent, compared with 15 percent in 1984–85, when the second study of these costs was made, so cost as a percentage of tax revenue could be expected to drop, even though it increased somewhat in absolute terms.

In the earlier period, aggregate compliance costs for the British VAT were estimated at 9 percent of the tax revenue. Administrative costs were only 2 percent of the tax revenue. Compliance costs were far higher for small firms when expressed as a percentage of sales: some thirty times higher for firms in the £10,000 to £20,000 range than for those with taxable sales of more than £1 million. The compliance costs are offset somewhat by certain cash flow and managerial benefits that firms should obtain from the VAT (here again the authors explore effects that are not commonly analyzed). Estimates for the later period are based on published materials and on assumptions about the results of certain changes in the British VAT in the interim. In 1984–85 the estimated cost of compliance was 5 percent, and the official administration costs represented 1 percent of tax revenue.

Two other topics are covered in analyses based on the structure of the tax rather than on statistical studies: the effectiveness of the VAT, compared with a retail sales tax, in assuring that the tax does not get into export prices, and the superiority of the VAT in minimizing evasion. On the first problem the VAT is probably superior to any other tax, including the retail sales tax, but the two taxes are much closer together on the matter of evasion, despite the self-policing aspects of the VAT. The conclusions of this study are for industrial

countries, chiefly for the United Kingdom, but many of the problems discussed will be accentuated in developing countries. In any event, the VAT is not a tax to be operated at low rates—the overhead costs are too high for that. The British experience suggests that there is no reason to proclaim that a VAT is better or worse than a retail sales tax, except that the sales tax is to be preferred if the tax rate is low, the VAT if the rate is high.

Part I

General Issues on the Value Added Tax

1

Choosing among Types of VATs

Carl S. Shoup

The value added tax (VAT) is a tax on the value added by a business firm, through its own activity, to the goods and services it buys from other business firms. This tax has enjoyed an explosive growth. Forty years ago it was little more than a theory that had been raised in a few contributions to the literature on public finance. Today, in its comprehensive form (described below), the VAT is an important part of the fiscal systems of thirty-nine economies:[1]

- Seventeen in Europe—Austria, Belgium, Denmark, Finland, France, Federal Republic of Germany, Greece (soon to be enacted), Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Turkey, and United Kingdom
- Fourteen in Latin America—Argentina, Bolivia, Brazil (states), Chile, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, and Uruguay
- Two in Africa—Madagascar and Niger
- Two in Asia—Republic of Korea and Taiwan
- Two in the Caribbean—Dominican Republic[2] and Haiti
- One in the Middle East—Israel
- One in Oceania—New Zealand.

And aside from a short-lived VAT in Vietnam in the early 1970s, no country has ever repealed a value added tax. In the history of public finance, so rapid a growth is unique, unmatched even by that of the income tax. Countries that have not adopted a VAT are therefore naturally inclined to consider it.

In this chapter the term "value added tax" refers to a comprehensive VAT, one that includes producers, wholesalers, and retailers. A tax that uses the value added technique but is limited to manufacturers will be so described. Only the comprehensive VAT raises all the questions of choice that are discussed below. Some twenty countries use the value added technique for sales taxes that do not extend through the retail sector; these taxes are usually restricted to the manufacturing and extractive industries. Most of these countries are in Africa, but India also is gradually transforming its extensive system of excises (see note 1), and Indonesia imposes a tax using the value added technique on manufacturers and importers, on firms that act as the main distributor or principal agent of a manufacturer or importer, and, as of December 1985, on firms that render construction services (Price Waterhouse 1986a, pp. 99–100).

The chief reason for applying the value added technique to such taxes of limited scope is to prevent cascading, that is, to avoid taxing any ingredient of the final product more than once. For example, if tax is imposed on a sale by a steel manufacturer to an automobile manufacturer and again on the full value of the automobile when it is sold to a wholesaler or retailer, the steel ingredient is taxed twice. Such multiple taxation can be averted in other ways, however, at least in the case of a manufacturer's sales tax. A notable example is the use of the "ring" or "tax-suspension" system: a sale by one manufacturer to another is exempt—it lies within a "ring" embracing an exempt area—whereas a sale by a manufacturer to a nonmanufacturer is taxable (Shoup 1969b, pp. 234–35).

The value added tax can take many forms. The choice of a particular kind of VAT is an important decision. This chapter outlines the issues encountered in making the

choice and thereby offers a broad picture of the family of value added taxes.

A Brief History of the VAT

The first country to impose the value added tax in its comprehensive form was Brazil. The Brazilian states, in 1967, "abolished the heterogeneous turnover [cascade] taxes that they had levied for 30 years . . . The reform was designed to overcome the defects of turnover taxation and to secure a greater degree of tax coordination among the states of the Federation" (Guerard 1973, p. 118). This tax was on consumer goods, not capital goods (such consumption-type VATs are discussed in more detail later). The Brazilian national tax, which is imposed on sales by manufacturers only, has employed the value added technique since 1959.

Later in 1967 Denmark became the first country to employ a comprehensive VAT at the national level (Shoup 1969a). France and Germany followed in 1968. These VATs replaced several types of sales tax: (a) a combination of a value added tax restricted to manufacturing (optional for wholesalers), a separate tax on services, and a local tax on retail sales (France); (b) a turnover, or cascade, tax (Germany), and (c) a wholesalers sales tax (Denmark). The other members of the European Economic Community (EEC) enacted value added taxes shortly thereafter to replace their turnover taxes. Today, to comply with the directive of the Commission of the European Communities (EC)—which followed, in general, the recommendation of the EEC's Fiscal and Financial Committee (Neumark Committee 1963)—all of the EC countries must use the VAT.

Two countries enacted a VAT to replace a retail sales tax (RST): Sweden in 1969 and Norway in 1970. The two taxes are generally considered to be about the same, except that with a VAT there are more taxpayers and a greater certainty of excluding producer goods.

In the United States, the state of Michigan enacted a VAT in 1953 with many exemptions and a high minimum deduction. The tax rate ranged from 0.4 percent to 0.75 percent over the years, until the tax was repealed in 1967. It was revived, in a somewhat different form, in 1975. It was intended to be a business tax that would not necessarily be shifted to the consumer as higher prices. Michigan is one of only six states in the United States that do not now levy a corporate income tax; that tax was repealed in 1975 when the new VAT was enacted. The VAT rate is 2.35 percent. (For a history and analysis of Michigan's tax structure, see Barlow and Connell 1982; for the earlier Michigan VAT, see Sullivan 1965, appendix C.)

The extensive use of the VAT in Latin America is perhaps traceable to the pioneering steps taken by Brazil. The Andean Common Market may also have stimulated some interest in this tax, even though there is little mention of tax harmonization in the Treaty of Cartagena (Gillim 1972, p. 206; and see Gillim 1972 generally for an analysis of Ecuador's VAT in the context of the Andean Common Market).

In 1949 the Shoup Tax Mission to Japan recommended that the prefectures enact a low-rate VAT to replace one of the three layers of business income tax (national, prefectural, and municipal), which, it was feared, placed too heavy a burden on that tax. The prefectural VAT was enacted, but its application was suspended, and within a few years it was repealed without having been put into operation. (For a history of this VAT project, see Sullivan 1965, ch. 3.)

The VAT bases in several EC countries are used for computing those nations' contributions to the three European Communities—Coal and Steel (ECSC), Economic (EEC), and Atomic Energy (EAEC). (There are other sources of revenue for the Communities.) The Communities impose a "uniform rate of VAT to be assessed on a uniform assessment base which was or should be adopted by the EC member states. The maximum rate of VAT which may be adopted for purposes of financing the Communities will be 1.4 percent as of 1 January 1986 and this rate may be increased to 1.6 percent on 1 January 1988 by unanimous decision of the Council" (International Bureau of Fiscal Documentation 1985a, p. 315).

An Overview of the Choices

Because the value added tax can take many forms, a country contemplating enactment of a comprehensive VAT has to make a number of choices. A country that uses the value added technique for a sales tax that does not extend down through retailers will face some of these choices as well.

The chief decisions concern:

1. The three broad types of VAT: consumption, income, and gross product. The personal exemption VAT, a variant of the consumption type, has never been used and is not covered here (see United States, Department of the Treasury 1984, pp. 35–38).
2. The regime for international trade: the origin principle (exports taxable, imports exempt) versus the destination principle (exports exempt, imports taxable).
3. The three methods by which the taxpaying firm may compute its tax liability: subtraction, tax credit or "invoice," or addition.
4. The products, firms, or sectors to be free of VAT.
5. Techniques of freeing from VAT: outright exemption (the firm need not file a VAT return) and "zero-rating"

(the firm must file a return, but pays a zero gross tax and gets a refund for VAT payments made at a prior stage).

6. The sectors and firms that, although taxable, are thought to require special rules or regimes.
7. A single-rate VAT versus a VAT with two or more rates (in addition to the zero rate, if any).
8. A tax-inclusive VAT rate versus a tax-exclusive VAT rate. The former is levied on the total amount of money transferred, including the tax itself. The latter is levied on the price before tax.

The other chapters in this volume deal with all eight topics, but give somewhat less attention to (1), (3), (5), and (8). Consequently, these four are treated at some length in the present chapter. (Administrative decisions are not covered separately here; for a discussion of administrative choices, see United States, Department of the Treasury 1984, ch. 9.)

How wide a choice does a country face in deciding what kind of VAT to introduce? For the eight classifications above, there are three choices in (1), three choices in (3), two choices each in (2), (5), (7), and (8), and an indefinite number of choices with respect to firms and sectors in (4) and (6). Even if we restrict (4) and (6) to two choices each ("yes, some" and "no, none"), there might seem to be 576 ($3^2 \times 2^6$) possible combinations—or 576 kinds of VAT, some of them, of course, differing only slightly from others.

This method of counting, however, is invalid. Not every choice within one category is compatible with every choice in each of the other categories. For example, if the choice in (1) is for the consumption VAT, the addition method in (3) is not feasible for computing the amount of tax.

Moreover, the countries that have introduced the comprehensive VAT have shown a remarkable degree of unity in selecting among the possible combinations. Virtually all have opted for the consumption type in (1), destination principle in (2), tax credit method in (3), multiple rate (in addition to the zero rate, if any) in (7), and tax exclusivity in (8). The VATs in these countries have for the most part differed only with respect to the kinds of sectors or products that are tax-free (4); the technique—exemption or zero-rating—used to achieve that end (5); and the types and extent of special regimes, short of tax-free status, designed for one or another sector or group of firms (6).

The high degree of uniformity among existing VAT jurisdictions should not discourage any country from trying to find the particular combination of provisions that best suits its own social, economic, and political characteristics. In part, the uniformity has been imposed by an external circumstance, the EC. EC Council directives have specified in some detail the choices that member countries, including those most recently admitted (Portugal and Spain), must make in constructing their VATs. Some developing countries may have been strongly influenced by the industrial countries with which they have historic ties or current trade linkages, for example, Côte d'Ivoire and France.

Consumption, Income, or Gross Product VAT?

The first, and probably most important, decision is whether the VAT shall amount to a tax on consumer goods only and thus not tax capital goods. This is the consumption VAT. Another type strikes increases in the stock of capital goods. Its tax base is equivalent to the total of all income; hence the label "income" VAT. A still broader VAT includes outlays to replace old capital goods; this is the gross product VAT (see Shoup 1956 for further discussion of these concepts).

The Consumption VAT

A firm adds value to the goods and services it buys from other firms by using its own labor force and capital equipment (buildings, machinery, and so on). The firm may thus produce raw materials (cotton) or, one or more steps down the line, manufacture goods (textiles and, later, clothing), or, down further, provide the services of wholesaling these goods and moving them into retailers' stores, where they are sold to consumers (households). The final price, the price paid by consumers, has to cover all the values added at the successive stages.

From this it might appear that for any one period the sum of the values added always comes to the amount of retail sales. This is true, however, only of a closed and static economy. In an open economy consumers buy imported goods. The value added in producing such goods arose abroad. It will not be in the census statistics of the value added in the consuming country. This foreign-produced value added will not be directly taxable by the consuming country's government as it arises. It can be reached, of course, by a tax on imports or a tax on the product's total value at the next sale after importation (or a still later sale). In either case the value of the retail sale exceeds the value added domestically.

Exports pose the converse problem: value is added in the producing country but does not appear in that country's retail sales. Thus the sum of domestic values added exceeds domestic retail sales.

The universal practice among countries that impose a VAT is to tax imports and exempt exports. In fact, then, the usual VAT base in an open economy is the same as domestic retail sales, but not the same as value added domestically, unless exports happen to equal imports. Nevertheless, the tax is still termed a "value added"

tax. (Exports and imports under a VAT are discussed in greater detail below.)

In a static economy, the year's economic activity—excluding foreign trade—equals the year's sales to consumers (retail sales). A static economy is defined here as an economy that is (a) maintaining unchanged its stock of inventories and (b) creating capital goods in an amount just equal to the year's depreciation of such goods, so that the stock of capital goods remains constant. Or, if the stock of inventories is increasing or decreasing, the stock of capital goods must be equally decreasing or increasing. In such an economy none of the year's activity goes to net capital accumulation and none of the consumption is made possible by net decumulation of capital.

In a growing economy, however, activity represented by growth does not get into the base of the consumption VAT. This is because the firm can subtract from sales all purchases of capital goods as well as purchases of all other goods even though some of them end up as increases in inventory. In a growing economy, therefore, and apart from foreign trade, the base of the consumption VAT falls well short of total economic activity but does equal retail sales.

The opposite result obtains in a declining economy, where inventories are drawn down or depreciation of capital goods exceeds the total of capital goods produced, or at least the net result of these two is negative. Retail sales now exceed economic activity (again, not including foreign trade). The consumption VAT is still levied on an aggregate base equal to retail sales, which now exceed the country's total economic activity.

In the terms of national income accounting, then, there is (for any given year) equivalence between retail sales and the base of a consumption VAT. In addition, the retail sales tax and the VAT have been shown to provide equivalent incentives to business firms (Shoup 1968). These equivalences suggest that any country considering the consumption VAT should first compare it with an RST (for such a comparison, see United States, Department of the Treasury 1984, p. 14 and ch. 4, and the papers by Due and Shoup in Musgrave 1973; for the equality of these two tax bases, see the proof in Shoup 1956 and 1968).

What relation does the consumption VAT bear to a tax on wages? In a two-factor (labor and capital) closed economy, where C is consumption, I is gross investment, W is wages, P is net profit after depreciation, D is depreciation, and GNP $= C + I = W + P + D$, the aggregate base of the consumption VAT is $C = W + P + D - I$. In the same economy we find that if gross investment equals profits plus depreciation ($I = P + D$), then, since $W + P + D - I = C$, it follows that $W = C$. The precise analog of the consumption VAT under these conditions is a wage tax (Shoup 1969b, pp. 253–54).

The relation $I = P + D$ will always hold in all economies, but only with regard to present values. The present value of an investment must equal the present value of a discounted stream of profits plus depreciation coverage. When it comes to incentives, then, a wage tax amounts to the same thing as a consumption tax, even though, for any one year, the national income accounts will almost surely show wages not equal to consumption (Shoup 1969b, p. 269). In tax revenue terms, where we do not discount to present values, the two taxes are not the same. Because of this inequality in any one year's revenue, we shall not consider the wage tax as a type of VAT.

The Income VAT

The other chief form of value added tax, the income type, reflects value added in the conventional sense of total economic activity in the country during the tax period (see below). The aggregate base is the same as that for a comprehensive income tax: VAT income $= C + I - D = W + P$. (For numerical examples illustrating the differences between the consumption VAT and the income VAT and comparing tax yields on the basis of present values, see Shoup 1973, pp. 17–25.)

The income VAT is used by Argentina and Peru and the state of Michigan and is approximated by Turkey's recently enacted VAT (see appendix A at the end of this chapter). Otherwise, aside from Finland, which employs a modified version of the gross product VAT, countries adopting the comprehensive VAT have chosen the consumption type. It is much easier to compute: merely subtract from sales all purchases from other firms. No distinction need be drawn between capital goods and other goods. No depreciation need be computed.

Moreover, double taxation of saved income is avoided. This is important in countries that impose substantial income taxes. The income tax strikes saved income, and hence investment, twice: once as the income is being earned and again as the rewards for saving appear in interest and profit, which are taxed. Although such double personal taxation may be justified on grounds of relative ability to pay, it can hardly be accepted for an impersonal tax such as the VAT. The consumption VAT is neutral regarding consumption now versus consumption later. It is also neutral regarding the use of capital versus labor in production.

The Gross Product VAT

The gross product VAT is computed by subtracting from a firm's sales only purchases of those goods that are used up currently, not purchases of machinery or other capital goods. Depreciation cannot be subtracted. For a parallel treatment of inventories, disallowance

should extend to the amounts of purchases by which inventories are increased, with no offset against sales allowed when inventories decrease; in practice, apparently this has not been attempted. So-called value added, under this approach, will normally far exceed the year's retail sales (see United States, Department of the Treasury 1984, p. 6, and Sullivan 1965, index entry "gross product type of tax"). In a closed economy with two factors, labor and capital, the aggregate base of the gross product VAT is GNP = $C + I = W + P + D$.

France employed the gross product VAT in 1936–53 (Sullivan 1965, pp. 67–73). At present Finland, Morocco, and Senegal impose a modified version, but Senegal's tax is restricted primarily to manufacturers.

The gross product VAT, because it disallows deduction of both purchases of capital goods and depreciation, discriminates strongly against the use of capital goods. This alone seems enough to explain its restricted use.

Origin Principle or Destination Principle?

A VAT is said to use the origin principle when it taxes value that is added domestically to all goods, including goods that are subsequently exported, but does not tax value that has been added abroad and is embodied in goods that are imported and sold domestically. It taxes all, and only, value that originates within the country. Exports are taxable, imports are exempt. This regime is compatible with the income VAT.

In contrast, a VAT is said to use the destination principle when it taxes all value added, at home and abroad, to all goods that have as their destination the consumers of that country. Exports are exempt, imports are taxable. This is compatible with the consumption VAT.

Central governments employing the VAT have always used the destination principle. For the Brazilian states, however, the VAT was chosen instead of a retail sales tax partly because the VAT could employ the origin principle, whereas the RST could not (Guerard 1973, pp. 118–19). The origin principle, however, became somewhat diluted. It was restricted to interstate trade; exports to foreign countries were exempted (Guerard 1973, p. 150).

The preference for the destination principle may be due to the general preference for the consumption VAT. Still another reason may be a mercantilistic inclination to emphasize economic activity (employment) more than consumption.

Moreover, untaxed imports often appear to the public to be unfairly favored over fully taxed domestic goods for domestic consumption. Even if exchange rates and price levels were altered under the origin principle so that import prices would rise and export prices fall, the appearance of unfair treatment would persist. These compensating changes in exchange rates and price levels are part of the "equivalence theorem," which holds that, owing to these changes, the origin principle is equivalent in its economic effects to the destination principle. This theorem is of limited use in the real world, because it holds only if, in the equilibrium position before a change from one of the principles to the other, (a) exports from one country to the other equal imports, and (b) there are no capital flows or transfer payments between the two countries (Shoup 1954, pp. 92–93 and sources there cited; Cnossen and Shoup 1985).

Conceivably, a VAT could tax both imports and exports, or neither. These hybrid types, however, seem never to have been considered seriously.

The countries forming the European Communities always intended eventually to eliminate all border controls within the Common Market. Hence an origin-principle VAT for trade among the EC countries had gained some support. Customs-type control at the border would then not be needed for exports; they would be treated the same as all other domestic output. Imports, to be sure, would have to be valued at the border, if the value added in the exporting country were not to be taxed by the importing country. Recent developments suggest that border controls can be abolished for intra-EC trade even under the destination principle (Cnossen 1983, and Cnossen and Shoup 1985). If this proves to be so, economic-union considerations may not be enough to let the origin principle get a foot in the door.

Once the imported goods are circulating within the country, further value added to them domestically is of course taxable under both principles, because that part of the good's value added that is both added and consumed domestically has nothing to do with foreign trade.

A retail sales tax, the common form of general sales tax levied by states or provinces in federations, uses the destination principle. No tax is imposed until the retail sale to the consumer, and sales to consumers are by definition destination sales. If, however, the consumer imports the good directly, the destination principle can be maintained only if the consumer is taxed by a "use tax" or if the exporting firm collects the tax on behalf of the importing country.

The choice between the destination and origin principles will influence the choice of the method for computing the amount of tax due.

Credit, Subtraction, or Addition Method of Computation?

As stated earlier, the value that a firm adds to the goods and services it buys from other firms can be

found by subtracting the cost of those goods and services from its sales. A tentative gross tax on the firm can be computed by applying the VAT rate to those sales. The net tax is then found by subtracting from this gross tax the sum of the VAT taxes already paid at earlier stages on those goods and services. The result, the net tax, is the tax on the value that has been added by the firm.

The sum of the VATs already paid at earlier stages is shown on the purchase invoice; each invoice will give, separately, the price and the seller's gross tax on that price. This gross VAT on the supplier's invoice must be the sum of VATs paid at the supplier's level and all earlier stages, at least if there has been no break in the credit chain (see "Exemption of an Intermediate Firm" below). For any period, say a month, the firm assembles all such purchase invoices and aggregates the value added gross taxes shown on them. This is the amount to be credited against that firm's own gross tax to reach the net VAT payable.

This tax credit method (sometimes called the "invoice method") is almost universally preferred, at least for the comprehensive VAT. The reasons will become clear in the subsections to follow. Finland, which uses a modified form of the gross product tax, employs the subtraction method (International Bureau of Fiscal Documentation 1985c, pp. 75–78).

The subtraction method of computing a firm's VAT calls simply for subtraction of total purchases from the sales of the firm in question. The balance, the value added by this firm, is then subject to the VAT rate. This is the simplest method and at first sight looks just like the tax credit method. There are, however, significant differences, as shown in the subsections below.

The addition method sums the factor payments made by the firm during the period, including profits. It is used only with the income VAT.

Exemption of an Intermediate Firm

Under certain conditions the tax credit method will increase the cumulative VAT unduly, to a figure greater than the gross VAT on the final sale to the consumer. This occurs whenever there is a break in the chain of tax credits, owing to the exemption of an intermediate firm.

Suppose that firm A sells to firm B, which adds value and sells to firm C, which adds further value and sells to firm D. Suppose that B is exempt, perhaps because it is a very small firm. Being exempt, it does not have to file a VAT return. Firm C gets invoices from B, but these invoices of course show no tax, because B is exempt. Thus C has no tax credit to use against its own gross tax on its sales to D. The gross tax on C is also, unhappily for C, the net tax payable. An earlier VAT has indeed been collected, on A's sale to B, but there is no record of it on C's purchase invoice from B. So C gets no credit for the tax paid on A's sale to B. The chain of tax credits has been broken because B, the exempt firm, does not file a return. The total cumulated VAT will therefore be larger than a tax at the same rate applied to aggregate value added (or to the value of retail sales). Consequently, excusing an intermediate firm from filing a VAT return creates a tax penalty (see United States, Department of the Treasury 1984, pp. 39–42).

Under the subtraction method, precisely the opposite defect appears when an intermediate firm is legally exempt. Firms A, C, and D pay tax on the values they respectively create, but firm B pays no tax. The cumulative VAT is now less than the VAT rate on the total value, the value shown at the retail sale. The same result occurs under the addition method, if the intermediate firm is exempt.

The tax credit chain will not be broken if firm B is required to file a return. B's gross tax is computed at a zero rate: zero tax. B subtracts from this zero tax the tax credit it has by virtue of the invoice from A. The resulting negative tax on B is refunded to it by the Treasury. This refund offsets the tax that had been paid earlier by A. The tax credit chain is now continued. Total VAT will be the sum of (a) a tax on the sale by C to D, for which no tax credit is available, and (b) a tax on the value added by D, which uses as a tax credit the tax shown on C's invoice to D. The values added by the firms before C will have been untaxed to them, net, by the refund to B. But these values are of course caught by taxing C on its sales, with no credit. (Zero-rating is further analyzed under "Exemption or Zero-Rating" below.)

Neither the subtraction method nor the addition method offers such a relatively easy means of recouping the tax lost by exemption of the intermediate firm, B.

Exports

Under the destination principle the tax credit method ensures complete exemption of an export, if the tax credit chain has not been broken. This method refunds, upon proof of export, all prior-stage VAT payments. The export sale itself is zero-rated. The exporting firm submits a tax return and subtracts from its zero gross tax the sum of the gross taxes shown on its purchase invoices. Thus the exporter gets a cash refund from the Treasury of the tax cumulated from earlier stages.

Perhaps the exporting firm engages also in domestic sales that are taxable. Then it can credit against the gross tax on those domestic sales the total tax shown on all invoices to it, including invoices for goods that it buys for export or for use in producing exports. If these domestic sales are a large enough part of the

total sales of the exporting firm, a tax refund on its export sales becomes unnecessary. The refund is entirely replaced by a lower-than-normal net tax on the firm's value added for the domestic market. If the firm's domestic sales are not that large, the result is a zero tax on such sales, plus a tax refund, which is, however, smaller than it would be if the firm had no domestic sales. Accordingly, there is no need to divide the exporting firm's purchases into those that do and those that do not enter the firm's export sales. There is no tracing problem.

In contrast, the subtraction method offers no such means of computing an exact refund of all VAT paid at stages previous to export. If indeed one could assume that all prior stages of the exported good had paid VAT, and at just one rate, that rate could be applied to the sales figures on the invoices to the exporter and a refund easily computed. But these assumptions are not always correct. The tax credit method, in contrast, automatically wipes out all vertical differences in rates; it produces a VAT, on the full value added, at the rate applicable to the last transaction (see "Single or Multiple Rates" below), provided, again, that the tax credit chain has not been broken by a nonfiling firm. It is this full VAT that is refunded. The addition method is unsuitable, too, for exempting exports by tax refunds. The tax, under this method, does not appear on the firm's sales invoices, because it is not computed as a percentage of sales.

Under the origin principle these export problems vanish, since exports are taxable just as are domestic sales. Consequently, with the origin principle, the credit, subtraction, and addition methods are all as suitable for exports as for sales to residents.

Imports

Under the destination principle the tax credit method automatically taxes the full value of the import, because no tax credit is allowed for a VAT collected by another country. (There will be no such tax anyway, if the other country zero-rates exports.) The importing country's VAT will be collected at the moment of importation or, under an alternative system, at a subsequent sale within the country. In either case there will be no tax credit available.

The subtraction method is really no more complicated. Imported products must be taxed on the full proceeds of the first domestic sale, no subtraction being allowed for the cost of the imports. (For the choice of methods as related to international trade, and specifically to the General Agreement on Tariffs and Trade, see Tait 1972, pp. 15–18.)

The addition method, under the destination principle, requires that the import be valued, because there is no way of adding the factor payments made abroad. In this sense the pure addition method cannot be used at all for imports under the destination principle; some valuation of product must occur.

Under the origin principle, which taxes only value added after importation, a starting point must be found by ascertaining import value, and this may be difficult if there is no sale at that moment to help fix the value. Intrafirm transfers are a case in point. Under the tax credit method, the importing country's VAT rate (not the VAT rate of the exporting country) is applied to the import value to get a notional or shadow tax to credit against the gross tax on the first domestic sale after importation.

The subtraction method takes from the value of the first domestic sale the value established at importation. Under the addition method, which adds the factor rewards for domestic activity, valuation upon importation again plays a role because it must be known in order to compute profit from activity after importation.

In general, imports can be handled somewhat more readily under the destination principle than under the origin principle.

Evasion

The tax credit method has been said to carry a built-in incentive to the seller (or the buyer) not to allow the buyer (or the seller) to cheat by misstating the amount on the invoice. This is true, but the same can be said for the subtraction method. Under either method it is to the buyer's advantage to have the invoice overstate the value of the transaction, whereas it is to the seller's advantage to have the value understated so as to reduce the amount of VAT payable. These opposing aims may deter both buyer and seller from using a false figure. Collusion may lead to the production of two false invoices for the one transaction, but such deception could be uncovered by comparing, for every transaction, the invoice submitted to the tax administration by the seller with that submitted by the buyer. Matching up invoices for all transactions for every VAT firm is an enormous task, even with the aid of computers. Probably only selective checking is feasible.

The addition method lacks this built-in safeguard, because the income recipients (workers, investors) are not subject to VAT.

Consumption VAT versus Income VAT

For the consumption VAT, both the tax credit method and the subtraction method are appropriate. No distinction need be drawn between capital goods and current-use goods sold to the taxpaying firm, and no account need be taken of depreciation or of inventory accumulation or decumulation. There is full subtrac-

Table 1-1. *A Numerical Illustration of the Tax Credit Method*
(deutsch marks)

Item	*Goods, services, and so on*	*VAT at 14 percent*	*Total billings*
Manufacturer A			
Purchase of goods, services, and so on	94	13.16	107.16
Manufacturing costs and profits, exclusive of VAT	44		
A's selling price to B	138	19.32	157.32
VAT payable by A (14 percent of 44)		6.16	
Manufacturer B			
Purchase price	138	19.32	157.32
Manufacturing costs and profits, exclusive of VAT	42		
B's selling price	180	25.20	205.20
VAT payable by B (14 percent of 42)		5.88	

Source: International Bureau of Fiscal Documentation (1986b), p. 105.

tion of all purchases or full credit for all gross VAT on incoming invoices.

The addition method is obviously not suitable for the consumption VAT. For example, if a firm employs part of its labor force to create a capital good for its own use, the value thus added by those workers should not appear in the firm's taxable value added of that year. Under the addition method the firm would have to divide its total wage bill into two parts, nontaxable (paid to workers creating either a capital good or an increase in inventory) and taxable (the rest of the wages).

The income VAT can be implemented most directly by the addition method: adding the payments made to factors of production, the labor and capital employed by the firm. But the income VAT can also be implemented, and probably more conveniently, by modifying the subtraction method (or credit method) used in computing the consumption VAT.

Subtraction is allowed, not of the cost of a capital good purchased during the year, but of depreciation over the life of the good. The net effect of deducting depreciation instead of the cost of the capital good in the year of purchase is, in general, the same as that obtained from adding payments to factors under the addition method (Shoup 1956, and Shoup 1969a, p. 252).

A Numerical Illustration of the Tax Credit Method

Table 1-1 (reproduced from International Bureau of Fiscal Documentation 1986b, p. 105) provides a numerical illustration of the tax credit method (under German tax law). One feature merits particular attention. The selling price, A to B, on which A's gross VAT will be computed, is DM138, not DM151.6—that is, not DM138 plus the gross VAT on A's purchase invoices, which is DM13.16 (14 percent of 94). A's selling price, before VAT on that selling price, is therefore not supposed to recoup the VAT shown on its purchase invoices. That recoupment will occur when A adds tax at the VAT rate to its selling price, and thus gets DM19.32 tax from B, while it turns over to the Treasury only DM6.16. The remaining DM13.16 is recoupment of the tax shown on the purchase invoices.

The taxpayer, A, does not have to work through this reasoning. It simply does what the tax regulations say it must: multiply its sales, before the VAT on those sales, by 14 percent, subtract the VAT shown on its purchase invoices, and turn the balance over to the Treasury.

One reason for requiring the VAT to be stated separately on all invoices is now evident. The firm, in computing the costs it must recoup through its price, exclusive of the VAT on that price, must not include in the price the VAT on the things it has purchased from other firms. Separate statement of the tax on all invoices facilitates reaching the proper cost figures.

Products, Firms, or Sectors to Be Free of VAT?

Certain products and services are often freed from the value added tax because they are to be exported (destination principle), because they are important items in the budgets of low-income families (food), or because they create benefits for society in general (education).

Certain firms are commonly freed from VAT on all their sales because the administrative and compliance costs are large compared with the tax revenue to be obtained. For example, all firms whose annual sales are less than a specified amount may be excluded. In some countries all farmers are free of VAT for this reason.

Financial firms, especially banks and insurance companies, are commonly free of VAT because the value they

add cannot be readily defined and computed. In certain other service industries all firms are free of tax for the same reason. Whole sectors of the economy, retailing, for instance, may be left outside the scope of the VAT, chiefly for administrative reasons.

Exemption or Zero-Rating?

Two strikingly different techniques are available for freeing from VAT either (a) all sales by a given type of firm, such as a small firm, or (b) all sales of a given good or service. These techniques are exemption and zero-rating.

Exemption of an entire firm on all its sales is allowed, usually because the firm is below a certain size, in order to facilitate administration or compliance. The problem posed by the exemption of a firm that is not a retail establishment has already been noted (under "Exemption of an Intermediate Firm" above).

Exemption of a particular good or service, rather than an entire firm, raises some questions. The firm is selling the exempt good along with some taxable goods (if it sold only exempt goods, it would be an exempt firm, as just described). Commonly, countries that impose the VAT do not allow the firm to take credit for the tax it paid when it purchased taxable inputs into the exempt good. This restriction limits the effective exemption in this case to the value added by the firm in question. The value that has been added at previous stages in producing the inputs that go to make the exempt good remains taxed. The question then arises, Why exempt that good at all?

Exemption is not needed to facilitate administration or compliance, since the firm is deemed able to pay tax on the other things it sells. And if freeing from tax is desired for social ends, why restrict it to the stages at and after which the exempt good takes its final form? Moreover, the restriction may in itself cause administrative difficulties or encourage noncompliance. For example, a certain input, say, total steel bought by the firm, may have to be allocated between the firm's exempt product and all its taxable products that absorb steel. (For this reason the matrix presented in appendix B at the end of this chapter describes the exemption, as commonly practiced, of a particular good as being "inconvenient" when used with the tax credit method or the subtraction method).

Zero-rating follows quite a different philosophy. With zero-rating, the freeing from VAT is not intended to avoid administrative or compliance difficulties. If that were the intention, zero-rating should not be used, if only because it does require the filing of a return. The aim of zero-rating is to lift the entire VAT, including that already collected at earlier stages, from a particular good or service. This is accomplished by allowing full credit for the tax shown on the invoices for purchases of the good in question or of inputs into it (see the description under "Exports" above).

Broadly speaking, exemption should be granted where the lawmakers would rather not free the firm, but feel compelled to do so owing to administrative and compliance difficulties. Zero-rating is to be given, in contrast, when the purpose is to lift the VAT completely from a good or service, for social or economic ends.

Zero-rating is often said to be unsuitable for developing countries just because it may require tax refunds. Yet refunds give any government's tax administration an opportunity to establish a reputation for fairness. Tax refunds are a powerful instrument for establishing the credibility of the tax administration.

The VAT laws of the United Kingdom specify the following exemptions and zero-ratings (as reported in International Bureau of Fiscal Documentation 1986c):

Exempted are

- Real estate (including leases) and inclusive rents for residential accommodation (except the supply of a major interest in land by the person constructing a building)
- Insurance
- Postal service
- Certain financial services
- Education and health services
- Firms with taxable turnover (including zero-rated sales) of not more than 21,300 pounds sterling per year (exemption optional).

Zero-rated are

- Cold food (other than confectionery or food supplied in the course of catering as widely defined)
- Books, newspapers and periodicals, printed music, maps, and the like
- Fuel (other than petroleum and road fuels) and power
- Construction of buildings
- Prescription medicine
- Public passenger transport by air, land (excluding taxis), or sea
- The supply, repair, or maintenance of a ship or aircraft (subject to certain limits)
- The provision of freight services to or from a place outside the United Kingdom
- Safety helmets and boots and children's clothing and footwear
- Exports and certain international services.

Within the EC the question of exemption versus zero-rating is still being examined, and there are strong differences of opinion. The United Kingdom, for example, did not accept the view of the EC Commission that the

zero-rating of many U.K. supplies was contrary to the Sixth VAT Directive. The EC Commission then applied to the European Court of Justice for a declaration confirming its point of view. The case was expected to be heard at the end of 1986 at the earliest (International Bureau of Fiscal Documentation 1986a, p. 55; see also 1985b, p. 148). Most of the EC countries use exemptions rather than zero-rating (aside from exports). Zero-rating is used extensively in the United Kingdom and Ireland.

Special Regimes for Taxable Firms?

Some industries not freed from VAT are given special regimes for computing the amount due. These cases are covered by other chapters in this volume and include construction, government, nonprofit institutions, housing (as distinct from construction in general), used durable goods, and fringe benefits (see also United States, Department of the Treasury 1984, pp. 70–83). Financial institutions may fall in this group rather than being freed from VAT.

Single or Multiple Rates?

Many countries employ multiple rates (apart from a zero rate) in their value added taxes. Multiple rates offer a greater opportunity to fit the VAT to various social and political ends. A low rate, rather than exemption or a zero rate, is sometimes granted to necessities, and luxuries may be subject to a rate higher than the standard.

Under the tax credit method, however, this differentiation of rates by commodity can be achieved only at the retail level. It is the final sale to the consumer that must be given the lower or higher rate. If commodity-differing rates are imposed only at earlier stages, the effects of the differentiation are wiped out, through the tax credit mechanism, by the uniform retail rate. A low wholesale rate on commodity X merely means that (a) the wholesaler pays less tax per dollar of value added and (b) the retailer has a correspondingly smaller tax credit to offset against the standard rate on its sales.

In contrast, under the subtraction method commodity differentiation can be made effective at any stage without being canceled at a later stage. A low VAT rate on wholesalers of commodity X does not increase the amount of tax the retailer of X pays on its subtraction-computed value added.

Commodity differentiation at the retail stage imposes a compliance burden on the retailer who sells both favored or penalized goods and standard-rated goods. The retailer must keep accurate records of the amounts of each type of sale. But under the tax credit method this is the extent of the problem. The retailer need not allocate its purchases between the two types of good, for reasons noted above (see "Exports" and "Exemption versus Zero-Rating").

On the whole, commodity differentiation of VAT rates may be less troublesome than some observers have implied, at least under the tax credit method. In any case many countries have decided that it is worth whatever trouble it causes. Cnossen's tabulation as of 1977 (Cnossen 1977, table B.1, pp. 134–46) shows that eighteen out of the twenty-two countries imposing a VAT used more than one positive rate: eleven out of twelve in Europe, six out of nine in Latin America, and the one country in the Middle East (Israel). Ten of the eighteen used two rates; five used three rates; two, four rates; and one (Italy), five rates (but since 1984, Italy has been using seven positive rates according to United States, Department of the Treasury 1984, p. 44). As of 1985, the following number of rates (aside from the zero rate, if any) existed in the EC countries, according to a tabulation in Cnossen and Shoup 1985:

One rate:	Denmark, Ireland, and United Kingdom
Two rates:	Germany and Netherlands
Three rates:	Luxembourg
Four rates:	France and Italy
Five rates:	Belgium.

In place of a lower rate on a particular good, the taxable amount of that good, its tax base, can be set at a fraction of the actual value. The standard rate is then applied to that fractional value. Writing in 1972, Tait (p. 62) noted that "in Sweden, this is the method adopted to lower the rate of VAT on buildings. The tax base for buildings is reduced to 60 percent of the market price, and similarly the base for services, for example, water supplies, roads, bridges, harbors, etc. is reduced to 20 percent of normal. France uses the same system to reduce the tax impact on books (70 percent of the market price) and land (33.33 percent of the market price)." The Brazilian states, too, have used percentage reductions from the tax base in lieu of rate differences (Guerard 1973, p. 138).

Again, under the tax credit method this base reduction must be made at the last stage, otherwise it will be negated by the standard rate on the full base at that stage.

Tax-Exclusive or Tax-Inclusive Rate?

The rate of any ad valorem sales tax can be stated in either its tax-exclusive or tax-inclusive form to yield the same revenue. The rate will be lower in the tax-inclusive form, because this rate is applied to the price as swollen by the tax itself.

For example, if the good would sell for $10 without

any tax, and a 20 percent tax-exclusive rate is levied on it, it now sells for \$12—\$10 plus 20 percent of \$10, or \$2. (This does not take account of any change in the pretax price that might occur just because of the tax.) What lower rate is needed to yield the same \$2 tax if that tax itself is included in the tax base? In this case the tax is both on the sale price of the product exclusive of tax (hereafter "ex-tax") and on the tax itself. If t_i represents the tax-inclusive rate, we have $\$2 = t_i\,(10 + 2)$, or $12\,t_i = 2$, and $t_i = 2/12 = 16.67$ percent, instead of the 20 percent, tax-exclusive rate.

More generally, if t_e is the tax-exclusive rate, which must yield the same tax revenue for every dollar of pretax sales as does t_i, then, given one dollar of pretax sales, $1\,t_e = t_i\,(1 + t_e)$, so that $t_e = t_i + t_e t_i$, or $t_e - t_e t_i = t_i$, or $t_e\,(1 - t_i) = t_i$. The value of t_e can be expressed

$$t_e = \frac{t_i}{1 - t_i}$$

In the example above, that value would be $0.2 = 0.1667/0.8333$.

Alternatively, $t_e = t_i + t_e t_i$ may be used to find t_i in terms of t_e. Thus $t_i\,(1 + t_e) = t_e$, and the value t_i can be expressed

$$t_i = \frac{t_e}{1 + t_e}$$

In the example above, that value would be $0.1667 = 0.2/1.2$.

Since the two rates come to exactly the same thing, there may appear to be no grounds for choosing between them. But they differ at least in the way the customer perceives them and in ease of compliance. As noted above, the tax-inclusive rate is of course always lower than the equal-revenue tax-exclusive rate. To a public that does not understand, or forgets, why the two rates seem to differ, the tax-inclusive rate appears less burdensome than the other.

It might at first seem that most sellers, at least most retail shops, would find it easier to compute the tax under the tax-exclusive rate. That rate, 20 percent in the example above, is applied to a price that the firm thinks of as representing its own money, not the government's. It could be said to represent what the firm would charge in absence of the tax. But with no tax, the firm might get a slightly higher price, at least in an imperfect market. Even in a perfect market, if there were a fall in the demand under the higher price caused by the tax, the new price ex-tax might be lower than the old no-tax price. In the example above, if the good sold for \$10.50 before the tax was imposed, the higher price with the tax would result in an ex-tax price of \$10.

This consideration suggests that the tax-inclusive rate would be easier for the firm to handle. The firm prices the good at what it thinks is optimum for its profit; given that 1/6 (16.67 percent) goes to the government, it applies the 16.67 percent tax to that amount. Or, in a perfect market, where it must be content with what the market says it can get, it again applies the 16.67 percent tax rate to that amount.

If the imperfection of the market is such that the retailer sets its price by using a customary markup on the cost, say 30 percent, it finds the tax-exclusive rate simple to apply to this marked-up price: 20 percent on the cost plus a 30 percent markup. Under a tax-inclusive rate, say 16.67 percent, the retailer may think it a formidable problem in arithmetic to find the price to the customer that will yield an after-tax revenue that will give a markup of exactly 30 percent.

This inconclusive analysis suggests that it is difficult to say whether the tax-inclusive or the tax-exclusive rate is the easier for firms to use in trying to reach certain before-tax pricing goals.

A third consideration is the relative feasibility of stating the amount of the tax to the customer and showing it separately from the price before tax. Most customers, at least at the retail stage, probably understand better what is meant by "\$10 plus \$2 tax" (20 percent) than by "\$12 including \$2 tax" (16⅔ percent).

A fourth consideration has to do with the use of the tax credit method. As noted earlier (see "A Numerical Illustration of the Tax Credit Method"), a firm, in computing the costs it must recoup through its price, exclusive of the VAT on that price, must not include in that price the VAT on the things it has purchased from other firms. Separate statement of the tax on all invoices facilitates reaching the proper cost figures.

In practice, the tax-exclusive rate is the heavy favorite. According to a 1977 compilation of rates (Cnossen 1977, table B.1, pp. 134–46), only two of the twenty-two jurisdictions imposing a VAT were using the tax-inclusive rate: the Brazilian states, 12.3–17.6 percent, and Sweden, 17.6 percent. By the formula above, the equivalent tax-exclusive rates for these two were 14.03–21.36 percent and 21.36 percent, respectively.

Interestingly enough, many of the manufacturers and production sales taxes listed in this 1977 compilation were using tax-inclusive rates: nineteen, out of a total of forty-four such taxes. Perhaps the typical customer here, a firm rather than a consumer, does not ask, and the legislature does not care if the customer does not ask, what the tax element is in the total paid over to the manufacturer or other producer. To be sure, the tax-inclusive rate can be stated separately on the invoice just as well as the tax-exclusive rate, but a separate statement, as shown above, is a little more convenient under the tax-exclusive rate. Moreover, the fourth consideration just discussed does not apply to these taxes unless they use the value added technique.

Incompatible Combinations

As noted above (see "An Overview of the Choices"), the most common, indeed almost universal, type of VAT in use today embodies the following characteristics: consumption type, destination principle, tax credit method, multiple rates that are tax-exclusive, and exemptions rather than zero-rating (but there is some divergence on this last characteristic). If the EC countries changed to the origin principle, in an attempt to eliminate border controls (see "Origin Principle or Destination Principle?" above), at least two incompatibilities would arise. One would be between the origin principle and the consumption base. Not all domestic consumption would be taxed, because imports would be exempt. In addition, a country's VAT would reach the consumption and gross investment outside its borders presented by sales abroad, because the country would be taxing its exports. The tax would be a mixture of the consumption VAT and the gross product VAT. To be sure, in most industrial countries domestic consumption would be by far the largest element in the origin-principle tax base. The degree of incompatibility between the consumption base and the origin principle is therefore indicated in table B-1 in appendix B at the end of this chapter by the intermediate ranking "I" (inconvenient to link the consumption base and the origin principle) rather than by "D" (difficult, if not infeasible to use these two together). The D grading may nevertheless be appropriate for those developing countries in which exports and imports are large relative to gross domestic product.

Another, minor incompatibility concerns the use of the tax credit method with the origin principle (see "Imports" above). An example of a strong incompatibility would be the use of the addition method with the consumption type of VAT.

Clearly, the effects that any one decision will have on other choice need to be considered. Table B-1 in appendix B shows conflicting choices in seven of the eight categories discussed in this chapter (the category of special regimes is excluded).

Appendix A. Intermediate Forms of the Comprehensive VAT: Finland and Turkey

Finland imposes a comprehensive sales tax, enacted in 1978, which allows deduction of purchases of goods intended for resale or embodied in goods sold by the firm, but not of purchases of fixed assets, fuel, and other goods intended to be used up within the firm. There are, however, important relief provisions covering the purchase of new buildings and machinery used in production (International Bureau of Fiscal Documentation 1985d, pp. 75–78).

On January 1, 1985, Turkey introduced a comprehensive VAT with a rate of 10 percent. It departs from the pure consumption concept by requiring that the credit for the VAT on the purchase invoice of a capital good be credited against the gross VAT not all at once in the year of purchase, but equally over a five-year period. It thus approaches the income VAT, which allows deduction of depreciation only. Instead of the VAT, retailers have the option, for ten years, of paying a tax of 13 percent of the total cost of their purchases. Small firms also pay this 13 percent compensatory tax, so long as it is not less than 10 percent of their taxable net income. Small farmers are excluded from the VAT system. Food sales are zero-rated for nonfarm firms, and no compensatory tax is levied on farmers (Price Waterhouse 1986b, pp. 77–80).

Appendix B. Compatibility among Features of a VAT

Table B-1 is designed to warn tax planners of incompatibilities among certain choices regarding the various features of a value added tax. For example, suppose that the tax policy planners of a certain country, in drawing a blueprint for the kind of VAT that they think would be most suitable, decide in favor of the consumption type (to encourage industrialization), the destination principle (to encourage exports), and the addition method (they already have an income tax); to exempt certain goods and services (for social purposes) and all small firms (for administrative reasons); and to use a lower-than-standard rate for certain goods, the rates to be on a tax-exclusive basis.

To ascertain whether their preferences are in any way incompatible, they start with the first line in table B-1 (consumption type) and work across, noting the cells where this first line intersects with a column they have chosen (in the example given here, the affected columns are: destination principle, addition method, exempting certain goods and services, exempting small firms, multiple rates, tax-exclusive formula). They find one "I" (inconvenient) and one "D" (difficult, perhaps infeasible). This gives them pause, but they persist, going to the next group of lines, selecting the third line (destination principle), and again working across the table. They find that the destination principle is difficult, if not infeasible, to use with the addition method and inconvenient if certain goods and services are exempted or multiple rates are used.

Going on to the third group of lines and selecting the line for the addition method, they encounter two more Ds—for exempting certain goods and services and for using multiple rates. In view of the incompatibilities revealed, the tax planners may decide to try another combination, perhaps substituting the

Table B-1. *Compatibility among Various Features of a VAT*

Item	*Destination principle*	*Origin principle*	*Tax credit method*	*Subtraction method*	*Addition method*	*Zero-rating*	*Exempt certain goods, services*	*Exempt certain firms*	*Multiple rates*	*Single rate*	*Tax-inclusive rate*	*Tax-exclusive rate*
Consumption	C	I	C	C	D	C	I	C	C	C	C	C
Income	I	C	C	C	C	D	D	C	D	C	C	C
Destination principle			C	I	D	C	I	C	I	C	C	C
Origin principle			I	C	C	C	I	C	C	C	C	C
Tax credit method						C	I	D	C	C	C	C
Subtraction method						D	I	C	D	C	C	C
Addition method						D	D	C	D	C	C	C
Zero-rating								C	C	C	C	C
Exempt certain goods, services								C	C	C	C	C
Exempt certain firms									C	C	C	C
Multiple rates											C	C
Single rate											C	C
Tax-inclusive rate											—	—
Tax-exclusive rate											—	—

Note: C-compatible, I-inconvenient, D-difficult, perhaps infeasible.

tax credit method of computation for the addition method.

Notes

1. For Africa, the Caribbean, and Latin America, Casanegra, this volume, table 15-1; for other areas, various sources. For current worldwide developments by country, see *Tax News Service,* a semimonthly journal published by the International Bureau of Fiscal Documentation. See also Cnossen (1977) for an earlier worldwide survey. For the history of the VAT (a) in Europe, see Aaron (1981); (b) in France, see Sullivan (1965, ch. 2); and (c) generally, see Due (1972), Due and Friedlaender (1973, p. 406), and Tait (1972, pp. 6–9, 144–64). India, in 1986, imposed a modified value added tax that applies, initially, "to products of chemical and allied industries, paints and packaging materials, plastics, glass, rubber products and base metals, etc., as specified in the Central Excise Tariff Act of 1985" (*Tax News Service,* March 31, 1986, p. 46; June 15, 1986, p. 81; September 15, 1986, pp. 132–33). China levies a value added tax on fourteen selected industrial commodities.

2. Application to retailers suspended to November 1986.

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2

VAT Revenue, Inflation, and the Foreign Trade Balance

Alan A. Tait

Thirty-nine countries now have a value added tax. VAT contributions to total tax revenue range in European countries from 13 percent (France and Luxembourg) to 30 percent (Denmark), in Central America from 8 percent (Honduras) to 25 percent (Guatemala), and in South America up to 39 percent (Chile). In the Republic of Korea VAT contributes 25 percent of total tax revenues, and in Morocco it contributes 29 percent (table 2-1).

Contrary to popular belief the VAT has not necessarily increased the share of tax revenue from general sales taxes. In fact, of the twelve European countries shown in table 2-1 only four now collect a higher proportion of revenue from their VAT than they did ten years ago. Nor has the VAT been used to fund excessive government growth, a prospect some, particularly in the United States, viewed with alarm. Although VAT revenues constitute an increasing share of GDP over the past ten years, they have not been as important as income and social security taxes in financing the growth of government (U.S. Treasury 1984, p. 26). In developing countries, however, the VAT has generally increased its share of total tax revenue since 1973. Furthermore, as table 2-2 shows, the VAT has maintained or increased its share of GDP in every European country except one (Norway) and in all other countries except one (Bolivia). The VAT now typically constitutes 5–10 percent of GDP in Europe and more like 5 percent elsewhere (Tait 1985, pp. 488–89).

The VAT has established itself in every continent as a major innovation in sales taxation.[1] Despite the VAT's undoubted success as a buoyant source of general sales tax revenue, anxieties persist about the potential impact on prices of introducing a VAT or changing its rate structure. This chapter will discuss these concerns.

The Problem of Inflation

When a VAT is proposed, usually the greatest controversy surrounds its effect on retail prices. In Belgium in 1971, for example, the initials TVA, standing for the *taxe sur valeur ajoutée*, were associated with the slogan *tout va augmenter* ("everything goes up"). In Mexico in 1980 many commentators worried that the introduction of a value-added tax would increase prices and aggravate the current inflation (Robinson 1980, Arthur Andersen and Co. 1980, p. 16). Yet, few studies have been done of the inflationary effects of a VAT (Arthur Andersen and Co. 1980, p. 18).

The main reason is the difficulty (or even impossibility) of disentangling the changes in prices attributable to a VAT from other influences on prices—how can we know the dancer from the dance? This difficulty is most striking when some massive change intervenes; the best example is the quadrupling of crude oil prices in 1973–74, which in most countries outweighed other influences on consumer prices (such as the introduction of the VAT in Britain in April 1973). Yet the introduction of the VAT is often clearly an important structural change, and it should be possible to check its effect on prices both by looking at statistics and by considering the context in which the change took place. There is a substantial amount of commentary on VAT introduction, but it is usually fragmentary and scattered.The approach followed here is to present four

Table 2-1. *VAT as a Percentage of Total Tax Revenue, by Country, 1973–84*

Country	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*
Austria	20.85[a]	20.33	20.13	20.57	19.28	18.36	18.49	18.08	18.12	18.06	18.76	—
Belgium	18.79	19.24	16.65	18.25	17.82	17.96	16.69	17.70	18.64	17.82	17.89	—
Denmark	25.03	24.15	23.08	25.37	27.15	29.84	31.59	32.14	33.15	32.50	30.74	29.39
France	27.45	26.97	26.10	26.57	23.83	24.28	24.13	23.51	23.49	23.56	22.92	—
Germany, Fed. Rep. of	13.90	13.00	13.11	12.89	12.39	13.13	14.00	13.99	13.88	12.92	13.25	—
Ireland	17.96[a]	17.83	16.27	17.40	18.84	20.91	18.16	15.61	16.21	20.13	21.93	—
Italy	17.78[a]	18.28	15.24	15.82	16.47	14.95	14.50	16.18	15.95	15.41	14.64	14.75
Luxembourg	12.85	11.52	12.76	12.02	11.07	11.27	11.39	11.63	12.54	13.37	13.15	—
Netherlands	15.21	14.40	14.33	15.02	16.08	16.30	15.12	15.27	14.98	14.12	13.90	14.89
Norway	27.31	26.91	27.24	26.95	27.31	27.24	25.31	22.84	22.03	22.73	22.44	—
Sweden	21.41	20.26	17.96	16.84	17.17	19.77	20.30	19.86	20.22	20.01	19.89	18.46
United Kingdom	8.10	10.07[a]	10.07	9.94	9.64	10.35	11.97	16.38	14.32	15.25	15.81	—
Israel	14.48	14.16	15.29	20.12	23.95[a]	29.67	25.57	25.04	25.82	27.70	28.01	—
Korea, Rep. of	10.18	10.50	14.09	12.35	16.91	22.66[a]	22.51	24.95	24.51	24.55	25.07	24.41
Côte d'Ivoire	—	—	—	—	—	—	—	10.64	—	—	—	—
Madagascar	16.33	—	—	—	—	22.47	21.45	23.38	21.86	26.35	—	—
Morocco	23.80	24.31	21.11	27.12	25.82	25.01	24.08	24.30	24.17	27.83	29.20	—
Senegal	8.72	—	8.96	8.64	10.18	13.59	14.93	15.72	12.37	17.55	21.26	—
Costa Rica	10.91	9.86	10.85[a]	9.81	9.35	9.19	9.73	10.03	8.16	10.38	17.42	—
Guatemala	12.59	15.29	13.86	15.83	14.79	14.14	15.87	14.63	19.97	24.76	—	—
Honduras	7.12	6.73	6.64	7.52[a]	7.43	7.07	7.49	7.08	7.75	—	—	—
Mexico	20.32	20.36	19.25	19.45	17.72	17.13	18.16	17.26[a]	20.79	15.49	19.71	—
Nicaragua	8.59	10.56	13.05[a]	12.38	12.53	11.39	8.91	10.70	12.60	10.69	10.42	—
Panama	n.a.	n.a.	n.a.	n.a.	6.68	9.37[a]	9.35	8.92	8.92	9.08	—	—
Argentina	n.a.	n.a	7.69[a]	10.34	10.73	11.15	11.41	12.48	21.73	23.69	14.89	—
Bolivia	5.33	4.81[a]	4.53	4.70	5.66	6.65	6.99	5.61	4.94	6.02	6.83	—
Brazil	n.a.	n.a	n.a	n.a	—	—	—	—	—	—	28.74	—
Chile	23.42	26.09	23.07	27.43[a]	33.70	37.22	39.51	39.80	43.97	46.19	37.43	38.34
Colombia	9.48	11.11	15.41[a]	15.73	16.48	17.80	18.92	18.76	20.64	—	—	—
Ecuador	9.81	9.86	12.35	11.15	12.30	15.00	15.21	11.87	14.36	13.78	12.35	—
Peru	26.00	28.47	29.67	32.06	30.67[a]	30.48	32.40	30.02	33.35	32.13	—	—
Uruguay	16.06	18.93	23.81	22.83	21.20	20.85	22.18	27.01	27.57	27.78	23.49	26.30

— Not available.

n.a. Not applicable.

Note: Where revenues are shown before the introduction of a VAT, they represent general sales taxes.

a. First full year of VAT revenue, if the VAT was introduced after 1972.

Source: *Government Finance Statistics*, International Monetary Fund, 1985.

hypotheses about the price effects of VAT changes and check them against the data and other evidence.

The Shift Case

The clearest impact on consumer prices of substituting a VAT for other taxes, or increasing the rates of a VAT, will be seen when the tax change increases revenue. The whole of the increased tax would not be reflected in increased prices, if traders were able to pass the tax increase backward (depending on the state of product and factor markets). VAT legislation often implies, however, that traders are expected to pass the tax forward. Literature distributed to traders by the government to explain how to implement the VAT has shown margins fixed and the VAT passed forward in the chain of production to end up in the price to the final consumer. This is not to say that traders will do this in practice, but if the authorities expect it and if the government acquiesces in an increase in the money supply to finance trade at the higher prices, an increase in the consumer price index (CPI) seems more probable than a decrease in factor rewards.

Such an increase in tax revenue through the introduction or increase in rates of a VAT will be seen as

a shift in the CPI. The rate of change in the CPI should not be affected, because the tax increase is a once-and-for-all shift and the trend of the CPI will continue at a higher level. This effect should be seen by a shift in the intercept term of the CPI through time before and after the change but in an unchanged (or little changed) slope. We will call this possible outcome the shift case.

The Acceleration Case

Another possible development is for the change in the VAT to alter the rate of change of the CPI. If inflation is defined as a continuing general increase in prices, the introduction of the VAT (whether equal yield or increased yield), which is a once-and-for-all tax change, cannot be inflationary in itself. But because of changes in relative tax burdens, uncertainty, and tax myopia, the introduction of a VAT could trigger an acceleration in the rate of change of the CPI. Consider each circumstance in turn.

First, relative tax burdens change because of changes in tax rates, traders covered, and the goods and services taxed. A 4 percent cascade turnover tax, as in the Federal Republic of Germany before 1968, can be said, roughly, to be equivalent to a VAT at 2.5 times the cascade rate; so a 10 percent VAT should yield revenues equal to the 4 percent multistage tax. But the effect will be different for each industry depending on the number of stages of production—the greater the taxable turnover in an industry, the higher the cascade tax liability; and the more vertically integrated the industry, the lower the cascade tax liability. Clearly the

Table 2-2. *VAT as a Percentage of GDP, by Country, 1973–84*

Country	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1982*	*1984*
Austria	5.95[a]	5.91	5.93	6.04	5.80	5.93	5.94	5.84	6.01	5.78	5.97	—
Belgium	6.61	6.93	6.43	7.08	7.16	7.41	6.90	7.34	7.76	7.57	7.56	—
Denmark	7.70	7.48	6.50	7.35	8.02	9.15	9.85	10.09	10.37	9.95	9.79	9.76
France	8.65	9.04	8.70	9.31	8.36	8.53	8.86	8.93	8.96	9.18	9.06	—
Germany, Fed. Rep. of	3.51	3.27	3.33	3.34	3.26	3.44	3.64	3.85	3.87	3.63	3.66	—
Ireland	5.02[a]	5.06	4.64	5.46	5.65	6.13	5.32	5.03	5.45	7.18	8.16	—
Italy	4.42[a]	4.91	4.15	4.53	4.86	4.60	4.57	5.39	5.45	5.74	5.82	5.86
Luxembourg	3.94	3.61	4.60	4.30	4.28	4.41	4.27	4.45	4.88	5.02	—	—
Netherlands	6.63	6.34	6.58	6.80	7.08	7.18	6.75	6.90	6.68	6.35	6.47	6.69
Norway	9.41	9.12	9.19	9.33	9.66	9.52	8.86	8.53	8.54	8.62	8.48	—
Sweden	6.09	5.77	5.27	5.68	5.99	6.79	6.64	6.42	6.80	6.77	6.81	6.50
United Kingdom	2.23	3.09[a]	3.11	3.03	2.91	3.01	3.41	5.09	4.52	5.22	5.24	5.62
Israel	3.98	5.08	5.55	8.17	9.25[a]	10.76	9.34	8.71	9.03	10.48	7.57	—
Korea, Rep. of	1.10	1.28	1.94	1.88	2.52	3.49	3.49	3.89	3.86	3.96	4.29	4.03
Côte d'Ivoire	—	—	—	—	—	—	—	2.16	—	—	—	—
Madagascar	2.48	—	—	—	—	4.20	3.92	3.82	3.32	3.19	—	—
Morocco	4.11	4.01	4.43	4.97	5.45	5.17	5.13	5.22	5.26	6.04	6.35	—
Senegal	1.41	—	1.58	1.61	1.80	2.68	3.02	3.44	2.46	3.38	3.91	—
Costa Rica	1.58	1.64	1.77[a]	1.57	1.42	1.57	1.68	1.68	1.38	1.73	3.69	—
Guatemala	0.95	1.24	1.16	1.36	1.52	1.46	1.45	1.48	1.82	2.13	1.56	—
Honduras	0.79	0.79	0.80	0.97[a]	0.98	0.91	0.99	0.99	1.02	—	—	—
Mexico	1.85	2.01	2.18	2.22	2.19	2.25	2.47	2.58[a]	2.97	2.30	3.18	—
Nicaragua	1.10	1.26	1.59[a]	1.55	1.63	1.38	1.11	2.06	2.64	2.42	2.84	—
Panama	n.a.	n.a.	n.a.	n.a.	1.46	1.93	1.94	1.87	1.90	1.86	—	—
Argentina	n.a.	n.a	0.69[a]	1.19	1.34	1.39	1.50	1.87	2.95	3.01	1.88	—
Bolivia	0.46	0.46[a]	0.47	0.49	0.53	0.59	0.51	0.40	0.37	0.26	0.28	—
Brazil	n.a.	n.a.	n.a.	n.a.	—	—	—	—	—	—	6.49	—
Chile	5.48	5.14	5.75	6.22[a]	7.84	8.61	9.54	10.19	11.14	10.66	8.12	8.76
Colombia	0.92	1.06	1.73[a]	1.72	1.75	1.93	1.93	1.93	2.03	—	—	—
Ecuador	1.21	1.14	1.31	1.09	1.16	1.45	1.43	1.45	1.53	1.52	1.33	—
Peru	3.42	3.83	4.29	4.24	4.25	4.77	5.19	5.66	5.43	5.35	—	—
Uruguay	3.08	3.56	4.21	4.91	4.62	4.43	4.43	5.68	6.10	5.40	4.55	4.58

— Not available.

n.a. Not applicable.

Note: Where revenues are shown before the introduction of a VAT, they represent general sales taxes.

a. First full year of VAT revenue, if the VAT was introduced after 1972.

Source: *Government Finance Statistics* and *International Finance Statistics*, International Monetary Fund, 1985.

single-rate VAT cannot replace the cascade element in all industries equally. There will be differential price changes and, depending on the weights of the goods and services in the CPI, the index could well rise or fall even though the tax yield is unchanged.

Second, even if the VAT substitutes for a tax of equal yield, the VAT may still affect the CPI because such a major tax change (which Johnstone 1975 describes as "a gigantic management problem," p. 124), creates uncertainties in the minds of businessmen and consumers. Such uncertainty is reflected in the consumers' anticipation of (what they see as) inevitable price increases and in businessmen's attempts to use an across-the-board change in taxation to widen profit margins. The atmosphere of uncertainty is likely to be intensified, and the acquiescence of the consumer to price increases enhanced, if there is already a substantial underlying inflation in the economy.

Third, even if total revenue is unchanged, the changeover to a VAT may involve the abolition of many taxes (eight in Korea, for example) or one tax with many rates (the U.K. purchase tax) and their replacement by a single-rate VAT or a multirate VAT which does not match the previous rates. Some goods bear a lower tax and others a higher tax after the substitution. The calculation of a zero effect on the CPI may include the assumption that the increased VAT passed forward in higher prices is symetrically offset by lower tax burdens passed forward in other lower prices. In fact, businessmen tend to be tax myopic—that is, they tend to pass forward tax increases but do not as readily pass forward tax decreases.

This is especially true if the VAT replaces direct taxes on enterprises. Even though the tax substitution yields the same revenue, traders may not view the removal of direct taxes as a benefit to be passed on in lower prices. Eventually, household incomes will rise (because either net income from capital increases or wages rise) to offset the retail prices increased by the VAT. Two differences remain, however. First, the households affected by the price increases owing to the VAT are not necessarily the same as those gaining in income, and they are most unlikely to gain in proportion to the price increases. Second, personal income tax may reduce the household income below the amount needed to offset fully the price changes from VAT.

The Case of Shift Plus Acceleration

In either the shift case or the acceleration case the change in prices could be increased if labor were to try to maintain its real wage in the face of the VAT-induced rise in the cost of living. Such price-wage relationships may be institutionalized (index linking), suppressed by income policies, or checked by price controls. Modeling these effects for each economy is beyond the scope of this brief discussion. Instead, the effect of the VAT on the CPI will be discussed here in light of the circumstantial evidence available for each country at the time the VAT was introduced.

The Case of Little or No Effect

A final possibility is that the introduction of the VAT has little or no effect on the CPI. Presumably, this would occur either because the tax substitution has been perfect or because the authorities have been able to negate those influences just discussed. That is, even though the tax may have induced relative price changes that might be expected to affect some income groups adversely, the authorities may have taken offsetting action by reducing other taxes or by increasing transfers. Uncertainty may be reduced by frank public discussion, advertising, and monitoring price changes. Profiteering might be countered by price control.

Categorizing Countries on the Basis of Data

The thirty-nine countries using a VAT are such a mixed group that it is implausible to attempt to "model" their experience. Quite apart from the availability and quality of data, the richness of the mix of policies these countries pursue makes precise or formal tests impossible. The data for thirty-one countries were checked for two years before and after the introduction of a VAT (see table 2-3). (Four countries had introduced a VAT too recently to be included in the sample, and four other countries had insufficient data.) Only one country (Ecuador) introduced a VAT as a completely new tax, and even in that case other taxes (on mining) were reduced; all other countries in the sample replaced other taxes with a VAT.

The discussion in the previous section suggests that, for the pure shift cases, the slope of trend lines fitted to the CPI should be approximately the same before and after the VAT introduction but that the intercepts of the trend lines with the vertical axis should differ substantially. Figure 2-1 shows examples of this behavior. Seven pure shift cases can be identified (Denmark, Uruguay, Netherlands, Ecuador, Bolivia, Honduras, and Norway).

Honduras and Norway are shift cases that also have clearly accelerating rates of price change. The Norwegian slope coefficient changed from 0.6 to 1.1 for the trends; the Honduran slope coefficient changed from 1.5 to 2.1. On balance it seems better to treat both

Table 2-3. *Data on Fitting Price Trend Lines to Consumer Price Indexes for the Quarter in Which VAT Was Introduced or Rate Changed*

	Intercept			Slope coefficient		R^2	
Country	*Before*	*After*	*Difference*	*Before*	*After*	*Before*	*After*
Before and after introduction							
Argentina	78.43	−189.34	267.77	3.79	250.97	0.87	0.92
Austria	97.36	98.81	1.45	1.45	2.40	0.99	0.99
Belgium	98.90	99.57	0.67	0.98	1.52	0.87	0.99
Bolivia	84.13	120.35	36.22	3.69	5.12	0.87	0.65
Brazil	92.58	99.55	6.97	6.04	6.23	0.99	0.99
Chile	56.58	24.44	32.14	9.07	114.20	0.88	0.97
Colombia	93.13	97.32	4.18	4.21	5.97	0.99	0.96
Denmark	93.96	100.60	6.64	1.26	1.05	0.99	0.94
Ecuador	97.08	100.66	3.58	1.04	2.02	0.89	0.97
France	98.24	99.39	1.15	0.66	1.54	0.98	0.99
Germany, Fed. Rep. of	98.96	99.45	0.49	0.37	0.50	0.86	0.86
Guatemala	101.78	98.18	3.60	0.70	3.20	−0.10	0.89
Haiti	100.26	102.87	2.61	1.89	2.06	0.91	0.91
Honduras	99.50	99.00	0.50	1.52	2.02	0.89	0.96
Indonesia[a]	99.65	100.40	0.75	0.59	0.14	0.91	0.31
Ireland	98.24	98.24	0.00	1.93	4.33	1.00	0.97
Israel	91.35	91.40	0.05	5.18	12.89	0.97	0.96
Italy	96.31	96.51	0.20	1.31	5.21	0.96	0.96
Korea, Rep. of	96.47	97.10	0.63	2.31	4.60	1.00	0.97
Luxembourg	97.63	99.68	2.05	0.52	1.17	0.99	0.99
Madagascar	96.80	99.30	2.49	0.27	0.64	0.43	0.59
Mexico	91.11	96.36	5.25	3.24	8.28	0.99	0.97
Morocco	96.12	99.01	2.89	0.38	1.24	0.32	0.89
Netherlands	95.63	99.49	3.86	0.85	1.10	1.00	0.93
Norway	93.78	100.00	6.22	0.70	1.66	0.99	0.99
Panama	96.36	99.72	3.36	0.57	1.12	0.85	0.97
Peru	84.27	87.86	3.59	3.96	13.89	0.99	0.91
Sweden	99.23	98.54	0.69	0.47	1.83	0.95	0.95
Turkey[a]	91.51	103.18	11.67	2.13	1.26	0.96	0.55
United Kingdom	96.43	95.80	0.62	1.54	5.23	0.98	0.94
Uruguay	63.79	110.84	47.05	6.48	6.56	0.88	0.91
Before and after rate changes							
Denmark	95.18	98.26	3.08	2.31	2.42	0.99	0.94
Ireland	92.20	97.42	5.22	2.76	5.32	0.98	0.99
Belgium	98.09	100.23	2.14	1.91	1.58	0.99	0.99
Netherlands							
1971	97.23	100.06	2.83	0.87	2.01	0.94	0.99
1973	98.10	99.37	1.27	1.72	2.53	0.99	0.99
1976	98.11	100.28	2.17	2.00	1.16	1.00	0.98

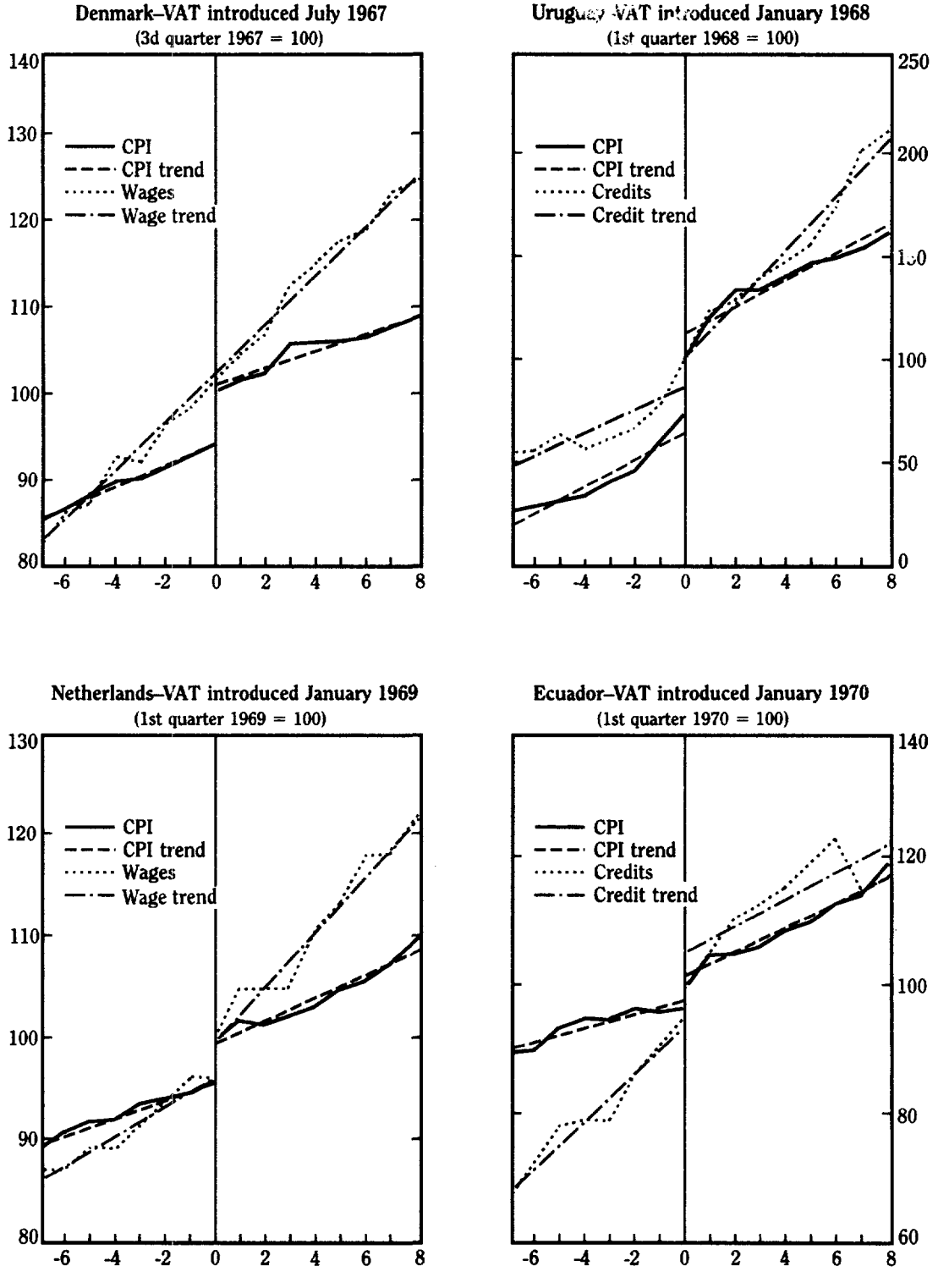
Note: Data for Costa Rica, Côte d'Ivoire, Nicaragua, and Senegal were insufficient to include in this table.
a. Because of recent introduction, monthly data were used.
Source: See text.

Norway and Honduras as cases of shift plus acceleration (table 2-4).

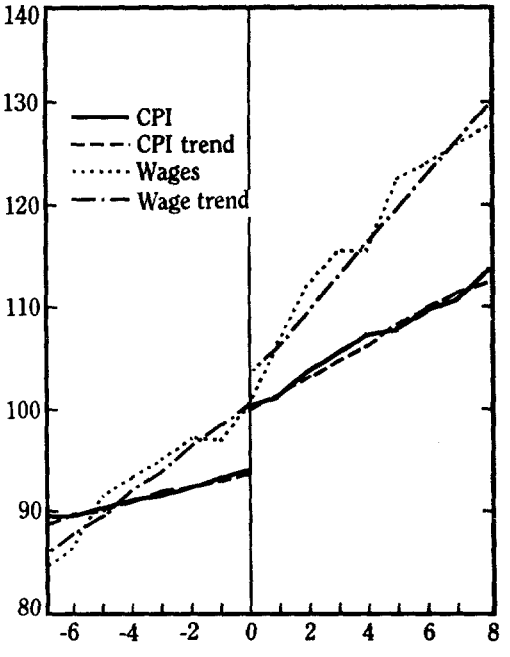
The remaining countries fall into the categories of either acceleration or no effect. From table 2-3, ten countries can be considered acceleration cases; they are listed in table 2-4 in the order in which they adopted a VAT. The slope coefficients for the remaining nine countries in tables 2-3 and 2-4 show there was little change in the trend of price changes before or after the VAT. In Côte d'Ivoire, Senegal, and Nicaragua the data are insufficient to be sure, but the effect of VAT introduction on the rate of price change appears to have been negligible.

To evaluate whether the results shown in table 2-4, column 1, were a genuine effect of the VAT on the CPI or were due instead to other concurrent circumstances,

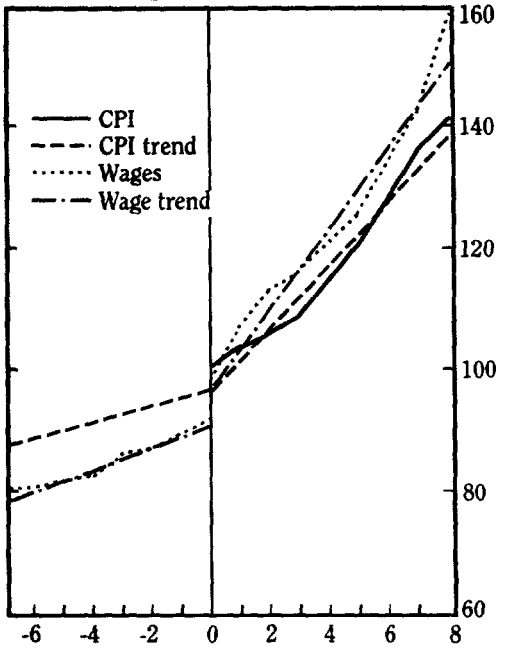
Figure 2-1. *Trends in Consumer Prices, Credit, and Wages Before and After a VAT Introduction or Change, by Country*



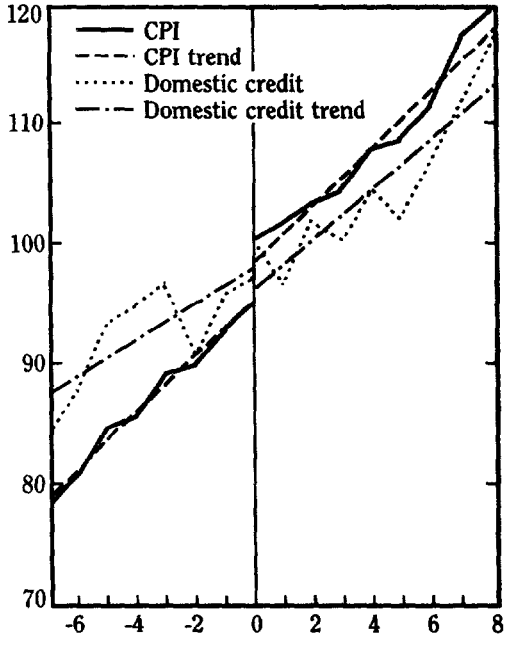
Norway–VAT introduced January 1970
(1st quarter 1970 = 100)



Italy–VAT introduced January 1973
(1st quarter 1973 = 100)



Denmark–VAT changed October 1977
(4th quarter 1977 = 100)



Belgium–VAT changed January 1983
(1st quarter 1983 = 100)

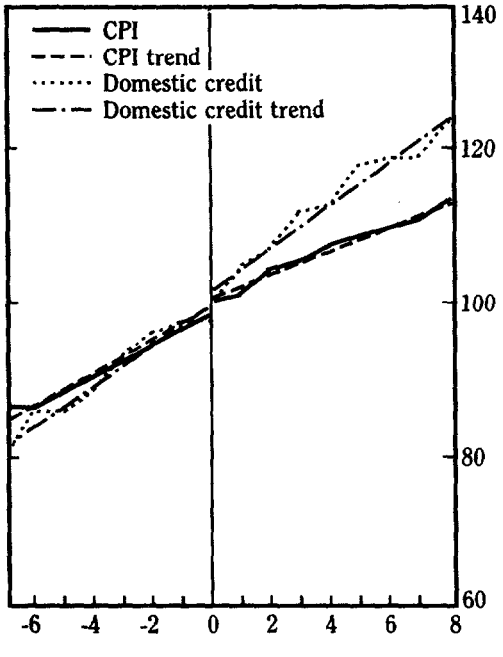


Table 2-4. ***Effects of a VAT Introduction or Change on Consumer Prices, by Category and Country***

	Introduction of VAT		*Changes in VAT rates*	
Cases	*On data alone* (1)	*Considering all circumstances* (2)	*On data alone* (3)	*Considering all circumstances* (4)
Shift	Denmark Uruguay Netherlands Ecuador Bolivia Panama Haiti Turkey	Denmark Uruguay Netherlands Ecuador Panama Turkey Haiti	Denmark	Denmark
Acceleration	Morocco France Sweden Ireland Italy Guatemala United Kingdon Chile Argentina Israel Peru Mexico	Italy Guatemala Israel Peru Mexico	Netherlands (1971)	
Shift plus acceleration	Norway Honduras	Norway	Ireland	Ireland
Little or no effect	Côte d'Ivoire Senegal Brazil Germany, Fed. Rep. of Madagascar Luxembourg Belgium Austria Colombia Costa Rica Nicaragua Korea, Rep. of Indonesia	Côte d'Ivoire Senegal Morocco Brazil France Germany, Fed. Rep. of Madagascar Sweden Luxembourg Belgium Ireland Austria United Kingdom Bolivia Argentina Colombia Costa Rica Nicaragua Chile Honduras Korea, Rep. of Indonesia	Belgium Netherlands (1973) Netherlands (1976)	Belgium Netherlands (1971) Netherlands (1973) Netherlands (1976)

Source: See text.

a more detailed examination of each country was made. This evaluation suggests a reallocation of the countries as shown in table 2-4, column 2.

Finally, Indonesia and Turkey introduced the VAT in January 1985, and there is insufficient data to carry out the same exercise as was done for the other countries. However, on the basis of monthly data instead of quarterly (to get sufficient observations), Turkey appears to have experienced a pronounced shift in the CPI (despite a large increase in credit) and Indonesia a slight deceleration in the CPI.

Categorizing Countries on the Basis of Other Evidence

Space does not permit a country-by-country evaluation, but examples are given for each of the four categories to illustrate how any reallocation was made.

The Shift Case

Denmark. Denmark is a clear case. Figure 2-1 and data show how the CPI rose from a trend of 90, 91, 92, 93 in the four quarters preceding the introduction of VAT in July 1967 to 100 in the quarter in which the VAT was introduced and thereafter resumed its pre-VAT trend. The slope coefficients before and after were 1.3 and 1.1 (see table 2-3).

The VAT introduced at 10 percent in Denmark was designed to have wider coverage than the 12.5 percent wholesale turnover tax it replaced and to yield about DKr 2.1 billion more in a full fiscal year. However, the complete tax changeover involved more than just the introduction of the VAT; higher tax-free allowances for wage and salary earners, higher tax thresholds for lower incomes, increased children's allowances, and transfer payments to those not liable for income tax were all introduced as well to compensate for the anticipated increase in the CPI. These offsetting measures were reckoned to cost about DKr 1 billion in revenue foregone, so the net revenue increase was still more than DKr 1 billion. The outturn for fiscal 1967–68 showed that this increase in sales tax revenue was equivalent to 6.2 percent of total tax revenue. Revenue from all taxes on goods and services rose sharply from 21.9 percent of public consumption before the VAT to 26.1 percent afterward, and this increase was all attributable to domestic taxes, as the revenue from taxes on international trade actually declined over the period.

The effect of the VAT introduction on relative prices was complicated further by the inclusion of food and services among items to be taxed. Previously they had borne little tax.

Large wage increases, just before the introduction of the VAT, helped to compensate labor for the anticipated price increases. A study conducted by the Monopoly Board of Denmark found that, "with few exceptions, businesses changed prices by amounts close to the tax differential and did not use the VAT introduction as an opportunity for unwarranted price increases" (Smith, Webber, and Cerf 1973, p. 35). The CPI rose by 8 percent between April and October 1967 and the wage regulation index (which excluded taxes) by 3.1 percent; thus, the VAT was regarded as probably responsible for a rise of almost 5 percent in the CPI.

The rate of change for wages increased from 2.3 percent a quarter before the introduction of the VAT to 3.8 percent a quarter afterward. Thus, the shift in the CPI acted as a trigger for wage increases, and credit was expanded to accommodate these increases (see figure 2-1).

The Danish introduction of the VAT was designed to increase revenue and did so dramatically (taxation on private consumption was 19 percent higher the year after the VAT than before); however, the once-and-for-all shift in the CPI acted as a trigger to increase wages by more than an amount to compensate for the CPI increase. Nevertheless, the Danish authorities were successful in containing the potential for explosive price increases immediately following the VAT introduction. This success should probably be attributed to those offsetting adjustments in income taxation which, combined with substantial wage increases (continuing a previous trend), compensated labor for the VAT-induced price shift.

Bolivia. In October 1973 the Bolivian authorities changed from a ring system at 5 percent (instituted in 1971) to a credit mechanism and transformed the system into a VAT. This change was associated with an extremely large and swift rise in the CPI. At the same time, however, the authorities established luxury rates of the VAT at 10 percent, 15 percent, and 20 percent; levied higher stamp duties and taxes on credit; unified taxes on beer; and shifted taxes on alcohol from a 25 percent wholesale tax to a 70 percent producer tax. Changes were also made in income and property taxes, export taxes, and customs tariffs. With so many changes it is impossible to ascribe any particular effect to the VAT, although the new luxury rates might have contributed something to the increase in the CPI (actually VAT-based revenue was to fall from 4.8 percent of tax revenue in 1974 to 4.6 percent in 1975 and domestic taxes on private consumption almost doubled). At the same time gasoline prices were increasing rapidly. It does not seem that the VAT was the principal disturbing feature in the

rapid increase of the CPI after 1973, and it makes more sense to transfer Bolivia to the category for no effect in table 2-4.

The Case of Shift and Acceleration

Norway. The Norwegian VAT introduction in 1970 involved a deliberate switch from the taxation of income to the taxation of expenditure. Taxes on domestic goods and services rose from 24.5 percent of private consumption to 28.6 percent. Although offsetting adjustments reduced income tax rates, lowered personal property and corporate taxes, and increased transfers, these did not fully compensate for the broadened scope of the new VAT. The VAT at 20 percent covered about 72 percent of consumption, whereas the tax it replaced, a sales tax at 13.64 percent, covered only 65 percent of consumption. The CPI was forecast to rise by 5.8 percent.

The rate of change in the CPI steepened from 0.7 before the shift caused by anticipatory purchases to 1.7 afterward (see table 2-3), but the expansionary wage and credit policies, both apparently triggered by the VAT introduction, were more likely the cause of the sustained steeper rise in the CPI than the VAT itself. The introduction of the VAT in Norway, more so than in Denmark and the Netherlands, fed a price-wage increase that led to greater increases in the CPI after the VAT than before it. The reason for this reaction appears to have been public anticipation that the tax change was going to increase prices and that the adjustments in income taxation would be insufficient compensation. Monetary policy appeared accommodating.

Honduras. In Honduras a general ring tax was replaced by a VAT in January 1976. The revenue from domestic sales taxation as a percentage of private consumption increased by 12 percent, but the effect on the CPI was relatively minor. The rate of the VAT was only 3 percent (as was the ring tax), and the increased revenue must be ascribed to better tax administration, which checked evasion. The acceleration of the CPI was trivial and is more appropriately attributed to the accelerating expansion of credit than to the introduction of the VAT. Honduras is transferred to the category of little or no effect.

Apparent Accelerated Inflation

The next set of cases involves those countries where the VAT introduction has been associated not with a shift but with an acceleration in the rate of change of the CPI (see table 2-4). An example of this effect is shown for Italy in figure 2-1. Table 2-3 shows how in each country the rate of change of the CPI accelerated, and this was accompanied by accelerated rates of increase in the index of wages and credit increases (where the information is available).

France. The French VAT is, of course, the original from which all others evolved. The modern form of the French VAT is usually identified with the tax changes of January 1968. The new VAT was a direct revenue replacement for the old (domestic taxes under the new tax regime represented 20.4 percent of private consumption, compared with 21.1 percent before the VAT). But the new VAT did extend to most wholesale and retail transactions. At the same time, the new VAT was a convenient vehicle for simplifying exemptions, many of which were abolished and only about ten of which were retained. Various anomalies and forms of double taxation, for example, on buildings and furniture, were removed. The number of tax rates was reduced from seven to four.

Moreover, there was a major change in the financing of local authorities: the principal taxes earmarked for local authorities were abolished and instead revenue was substituted from the employers' payroll tax. The result was a net loss in revenue to the central government. Although overall VAT revenues substituted equally for sales tax revenue, adjustments (partly to compensate for anticipated price changes) in the lower- and middle-income brackets also cost F 700 million in lost revenues. The cleaning and dyeing industries predicted increases of 5 percent; construction industries, 10 percent; food products as follows—bread, 5 percent, dairy products, 2 percent, and fruit and vegetables, 3 percent; and varying increases for meat, clothing, automobiles, construction, champagne, and mineral waters.

Prices rose somewhat faster after the tax changeover (the 0.7 gradient increased to 1.6, see table 2-3), but wages and credit increased sharply. The picture is distorted by direct intervention later in the year. The increased rate of price change and the sharply higher rate of wage increases persuaded the authorities to reinforce price controls through program contracts covering industrial prices, supervision of wholesale and retail trade margins, and a price freeze for services. At the same time (November 2, 1968) rates of the VAT were increased.

So the 1968 French VAT reform might be characterized as one which, while nominally an equal yield change, involved changes in coverage and rates with offsetting adjustments in other parts of the system. The direct effect of the VAT on the CPI was probably less than 1 percent; however, the uncertainty induced by the tax changeover may have accelerated the rate of increase of the CPI. Wages increased sharply, but the vicious circle of wage-price increases triggering each other was

contained (only partially) by price controls. The VAT itself does not seem to have caused the increased inflation; the more likely causes were wage and credit increases and further increases in rates of VAT. The French example should probably be transferred to the category of little or no effect in table 2-4.

Little or No Effect

On the basis of available data, the introduction of VAT appeared to have no (or very little) effect on the rate of change of the CPI for thirteen countries, as shown in column 1 of table 2-4. From the examination of the circumstances in each case exemplified by the discussions above, we have added a further nine countries to that category, making twenty-two in all. To complete this review of country case studies there follow two examples of the discussion surrounding the introduction of VAT where little or no effect occurred.[2]

The Federal Republic of Germany. Germany is the country most frequently referred to when commentators wish to show that the introduction of a VAT need not affect the CPI (Smith, Webber, and Cerf 1973, pp. 35–36; Tait 1972). The changeover in January 1968 from a 4 percent cascade turnover tax (which extended to the retail level) to an equal yield 10 percent VAT (and a 5 percent rate on foodstuffs and agricultural products) was estimated at the time to increase prices by 0.5 to 1.5 percent. Even this increase was anticipated only because those sectors where prices could be expected to fall might prove more reluctant to pass forward tax changes than those where tax liabilities rose and because some services were taxed at higher rates. As it turned out, the CPI rose by only 1.5 percent over the whole of 1968 and of this no more than 0.4 to 0.6 percentage points were ascribed to the VAT. The largest price increases were in the services sector, namely, hotels (4 percent), public transport (5.2 percent), handicrafts (5.3 percent), electricity (6.3 percent), cinemas (6.4 percent), and gas (9.9 percent). The slope of change in the CPI for the two years before and the two years after the VAT introduction steepened only from 0.4 to 0.45. Taxes on goods and services as a percentage of private consumption fell after the VAT substitution.

The moderate impact of the VAT introduction in Germany is widely ascribed to the timing of the tax changeover. The rate of German expansion had slowed, and firms were reluctant to raise prices. The Lander operated a price monitoring system, and no further control on prices was deemed necessary. The Germans stopped businesses from increasing prices not so much by design but because the introduction of the VAT happened to coincide with a minor recession. It is interesting to note that an 11 percent tax was levied on business assets to ensure that the VAT substitution did not suddenly favor capital goods.

Belgium. The Belgian VAT was introduced in January 1971. Originally, the new tax was intended to be introduced in January 1970; this change from a cascade turnover tax was supposed to be an equal yield substitution.

Previously Belgium had a complicated form of cascade tax at 7 percent, which included the wholesale stage. However, this was modified for some industries by using a single rate that purported to be equivalent to the total amount payable under the cascade rates. Basic foodstuffs were exempt; there was an additional 0.7 percent invoice tax on all turnovers; and capital equipment was taxable. The VAT exempted exports, investment, and stocks, and this narrower domestic base required higher rates of tax to produce the same revenue. The proposed rates were a 20 percent general rate, with a 25 percent luxury rate and lower rates of 6 percent and 15 percent. Estimates suggested that the CPI might rise by 5–8 percent. To counteract this rise, the authorities reduced the two middle rates to 14 percent and 18 percent, and some goods and services were moved to lower rates. Even with this change it was clear, as the date for implementation in 1970 approached and with the economy working at full capacity, that traders would probably attempt to increase prices, which might set off a price-wage spiral. The authorities decided to postpone the introduction for a year until January 1, 1971.

Some people were caught by this decision; they had purchased consumer durables in the full expectation that the VAT would be introduced in January 1970. For instance, sales of cars were 12 percent lower in the first nine months of 1970 than in the same period of 1969, when there had been massive speculative purchases in anticipation of the original date for introducing the VAT.

When the VAT was finally introduced (at the lower rates), the revenue shortfall was made up by not allowing all new investment or inventories to be tax free at once, by taxing exports for one year at 1.75 percent, and by spreading the refund for the transaction tax paid on stocks over a full year. Wholesalers and shops closed between Christmas and the New Year to take inventories, and stocks were generally reduced. Consumer credit in the last quarter of 1970 was kept extremely tight to reduce the surge of speculative purchases in anticipation of the introduction of the VAT in January.

The ability of traders to increase prices because of uncertainty about the VAT might have been somewhat restrained by a requirement to announce and justify price increases twenty-one days before they were actually applied; this period was extended to five months

Table 2-5. *Changes in VAT Rates*

Country	*Date*	*Change*
Denmark	October 3, 1977	Standard rate increased from 15 to 18 percent.
Ireland	May 1, 1980	Standard rate increased from 20 to 25 percent with no change in other rates.
Belgium	January 1, 1983	Standard rate increased from 17 to 19 percent and to 25 percent for many consumer durables.
Netherlands	January 1, 1971	Standard rate increased from 12 to 14 percent with no change in other rates.
	January 1, 1973	Standard rate increased from 14 to 16 percent with no change in other rates.
	October 1, 1976	Standard rate increased from 16 to 18 percent with no change in other rates.

Source: Domestic legislation.

in 1971. This need to justify price increases to the minister for economic affairs may have contained mischievous increases in prices.

In any event, prices did not increase markedly faster than the underlying rate of inflation, although the increase in wages far outstripped the increases in industrial production and prices. Taxes on goods and services as a percentage of private consumption were more or less unaltered before and after the VAT.

Relative Price Effects

The examination of the circumstances in each country frequently shows that changes in relative prices may be more important than general price changes. Some changes from existing sales taxes to VAT have involved complex substitutions with substantial changes in relative tax rates (for example, the United Kingdom and the Republic of Korea). Such changes are frequently asymmetrical (traders will increase prices when tax rates rise but will not reduce prices by the full amount of a tax reduction) and may have more fundamental effects on the distribution of the tax change over household income groups than that revealed by the change in general prices. Nevertheless, the evidence does not seem to support the contention that the introduction of VAT is inflationary.

Evidence of Inflation from VAT Rate Changes

Once the VAT is in operation, changes in rates might reveal whether the tax can be associated directly with inflation. Six rate changes were selected primarily on grounds that the changes were significant (at least two percentage points) and principally confined to a rate change with little or no alteration in the base (see table 2-5).

The Danish 1977 case shows that the CPI shifted when the VAT was introduced, although the rate of change of the CPI was unaffected. Revenue from VAT was to increase by DKr 1.4 billion, but selective partial compensation by dairy subsidies and increased social security and pension payments reduced the expected net yield to DKr 1.1 billion. This net revenue increase is revealed in the shift (see figure 2-1), but there is little change in the rate of inflation. In table 2- 4 this case falls under the shift category.

The more substantial change of five percentage points in the Irish standard rate undoubtedly was associated with both a shift in the CPI and in an acceleration of the rate of inflation, despite a determined effort by the authorities to contain credit expansion. However, the acceleration in inflation was by no means attributable only to the large increase in the VAT. Excises on petroleum, alcohol, and tobacco contributed to an increase in the price of these goods, which was more than double the rate of inflation. Domestic credit expansion continued to finance the increasing rate of price increases. Although many influences as well as the VAT rate increases contributed to an acceleration of inflation, this case has been left in the category of shift and acceleration in table 2-4.

The Belgian example is akin to that of Denmark, and the authorities actually achieved a reduction in the rate of inflation following the substantial value-added tax alterations (see figure 2-1). The reason for this outcome was that price effects were (temporarily) pre-empted by widespread purchases, which successfully led the well-debated increases in VAT rates. The cautionary note in this case might relate to the difficulties countries face when their budget proposals are introduced several months before implementation. However, though revenue was less than anticipated, the effect on prices was also tempered.

These examples might convince us that the effect of the VAT changes on inflation depends more on the underlying uncertainty and acceptance of rapidly changing prices than on the VAT rates themselves. In Denmark and Belgium the VAT rate changes were re-

flected in a once-and-for-all shift, but in Ireland, where both the CPI and credit expansion were already changing at a higher rate of increase, the VAT changes were rapidly reflected in rising prices. It is not so much the VAT rate changes as the inflationary environment that seems to be at fault.

The three VAT rate changes in the Netherlands are interesting because all are for the same absolute amount (2 percent in each case) with no other rate changes. In 1971 the change is reflected in a small acceleration, in 1973 in almost no acceleration, and in 1976 in a deceleration of the rate of inflation (see table 2-3). This differing pattern is not explained by changes in the rate of increase of credit. In fact, the relation of prices and credit is counterintuitive in this case: credit accelerated by the greatest amount in 1976 when inflation, around the quarters when the VAT was increased, was decelerating. If anything, it is the rate of change of wages that appears to mirror the decelerating change in the CPI in 1976 and the accelerating changes in 1971 and especially in 1973 when wages rose by some 15 percent instead of the 9 percent forecast.

Basically these examples from the Netherlands point to influences on prices other than the VAT—to increased wages, to other increased taxes (in 1971 on cars and petroleum), and to changes in the exchange rate (in 1976, when the price deceleration was closely aligned to an appreciation of the guilder). As shown in table 2-4, the VAT changes could not be said to be a significant influence on inflation.

Effects on the Foreign Trade Balance

Because the VAT is fully rebated on exports, whereas other sales taxes and direct taxes are not, it is often suggested that substituting VAT for such taxes could improve the balance of payments on current account. The substitution for sales taxes is discussed first and then the case of direct taxes.

A VAT Substituted for Other Sales Taxes

Of course, retail sales taxes and most wholesale and manufacturing single-stage taxes do not apply to exports. Therefore, their substitution by a VAT would not alter the tax position of exports, except for those goods bought by tourists. Under most VAT schemes, however, tourists can have their VAT payments rebated, with varying degrees of inconvenience.

Where the existing sales tax is cascaded, the tax content of any good depends on the number of cascades and can be different for identical goods or the same for different goods; the point is that the sales tax content cannot be determined exactly. This has led to the various tax offsets on exports which characterized, for instance, the Italian system before VAT. Such offsets could be considered as inadequate compensation for the cascade tax element, exact compensation, or partly as a net subsidy. The substitution of the VAT replaces an uncertain tax content by a transparent and known tax liability. Depending on the previous sales tax, tax offset, and subsidy regimes, exports could improve or worsen under the VAT. Equally, imports that are liable to the same VAT as domestic goods could be less favorably treated (if previously the cascade had discriminated against domestic goods).[3]

To determine the exact effect of introducing a VAT on the trade balance the existing tax content by products or principal trade sectors must be estimated. Usually this can be done (for cascaded sales taxes or direct taxes) only if an input-output table exists. In addition to the usual disadvantages of using input-output tables (infrequent updatings, inconvenient sectoral breakdown), such an approach faces the additional difficulty that a transformation has to be made from the input-output sectors to the trade categories for normal statistical and tax purposes or to typical household consumption categories. This usually demands some heroic assumptions. When this transformation is made and potential price changes are assigned to goods (and services), the foreign trade assessment needs to use elasticities of supply for exports and elasticities of demand for imports.

The magnitude of the trade benefit from the changeover to VAT depends on (a) the positive response of producers to the shift in the ratio of producer prices (inclusive of any previous export rebates or subsidies and the VAT rebate) of exports to producer prices of domestic sales, (b) the response of consumers of the exports to the price change, and (c) the negative response of domestic consumers to market prices of imports relative to market prices of domestically produced goods. The outcome of all this depends on each country's individual circumstances and may vary considerably from one sector to another, but overall the net change is unlikely to be large.[4]

A VAT Substituted for Direct Taxes

The starkest statement would be that, because a VAT is rebated on exports and corporate income taxes are not, replacing the profits tax by an equal yield VAT must help exporters.[5] This statement, however, depends on at least six assumptions. The first is that corporate income taxes are reflected in higher export prices, which would be reduced if the profits tax were reduced. This is not necessarily so; some evidence suggests that when taxes rise they are passed on, but when they fall they are not. Second, even if corporate taxes are passed on, they may not be passed on to export prices; cross-

subsidization may occur. Furthermore, under a profits tax businesses can have a negative tax liability (losses); under a sales tax they cannot have negative sales. With the VAT, the tax liability on exports is zero, but that may still not be as useful to businesses as negative tax liabilities to offset domestic tax liabilities" (Tait 1972, p. 104).

Third, it is the position of the country relative to others that matters. If all countries acted in a similar fashion by substituting VAT for direct taxes in the same way there is no net advantage to anyone. Fourth, the elasticities of supply and demand have to be such as to yield a worthwhile advantage. Fifth, unless exchange rates were fixed an expansion of exports and containment of imports might be expected to cause a currency appreciation.

Finally, and possibly most important, if there is a budget constraint, then the government revenue forgone when the VAT is substituted for nonrelated direct taxes must be replaced by raising other taxes. Such increases will reduce, one way or another, real household income and are likely to spark claims for wage increases which, eventually, will increase manufacturing costs and erode the competitive advantage gained for exports through the original tax substitution. The advantage of the VAT substituted for the direct taxes would be temporary, depending on the speed with which other taxes fed through into final prices, the lags in response in the labor market, and the extent to which traders passed forward the increased domestic costs in export prices. However, as the advantage from the tax substitution was predicated on full forward shifting it would be capricious to assume anything different for the general equilibrium outcome.

It should be mentioned that, quite apart from these assumptions about shifting, there are two other possible positive influences. There is the possibility that the substitution of the VAT for profits tax could unleash hitherto contained productivity in industry, which could improve the balance of payments (see U.S. Treasury Department 1984, p. 23). Second, there is the response of savers as the cost of savings falls relative to the cost of consumption. The substitution of a VAT for income taxes would reduce the "excess cost of capital inputs relative to labor inputs resulting from the income tax. With border tax adjustments, the cost of both labor and capital inputs used in production for exports would fall compared with their cost under the income tax and compared with their cost when used in production of goods for domestic markets" (Schuyler 1984). Thus the profitability of a given volume of exports should increase and improve the balance of trade.

When all this is taken into account, estimates of the immediate effects of a VAT on the foreign trade usually emphasize the temporary nature of any such gain. Moreover, one suspects that the larger the short-run gain (and some have been estimated as quite large), the briefer the short-term advantage.

Conclusions

Perhaps the most important conclusion to be drawn from the discussion here is that there seems to be nothing inherently inflationary about the use of the VAT. In twenty-two of the thirty-five cases evaluated (63 percent), the introduction of the VAT can be said to have had little or no effect on the CPI. In a further eight cases (23 percent) the introduction of the VAT is associated with a once-and-for-all shift in the CPI, but in only one of these cases could this shift be said to contribute to an acceleration in the rate of increase of the CPI. Therefore, in twenty-nine cases (83 percent) the introduction of the VAT did not alter the rate of price change. In six countries, the introduction of the VAT could have contributed to an acceleration in the rate of inflation, although price changes were also associated in each case with expansionary wage and credit policies.

Clearly, there is no necessary connection between introducing a VAT and increasing inflation. Rather, the assumption should be that an equal-yield VAT substitution will have little or no effect on the rate of change of the CPI and that, even if an increased yield is desired and the CPI is shifted, the shift will not necessarily have a continuing effect on the rate of inflation. Price controls were used effectively to dampen the potential price-wage acceleration of inflation after the VAT introduction in Austria, France, Korea, the Netherlands, and Norway.

Of the six examples of rate changes in existing VAT systems, only one case was associated with an acceleration of inflation, one with a shift in the CPI, and the other four had little or no effect.

Thus of the total of forty-one cases examined to assess the effects of VAT introduction or change, thirty-three—over 80 percent—showed that the VAT did not contribute to inflation. Furthermore, this study shows that any potential inflationary effects can be constrained by government policies to inform the public and traders about the expected effect of the VAT on prices, the use of price controls, offsetting adjustments in other taxes, the correct timing of the tax changeover, and generous provisions to ensure full credit for previously paid taxes on business assets and inventories.

Notes

The views expressed are strictly personal. They do not necessarily reflect official views of the International Monetary Fund where the author is deputy director, Fiscal Affairs Department.

1. As Carl Shoup says, "so rapid a growth is unique" in the history of public finance.

2. For a summary table showing the taxes replaced by VAT see Tait 1985, pp. 488–90.

3. In practice imports are subject to numerous different accounting treatments with suspended tax liabilities for raw materials for exports, transit goods, services connected with imports, samples, VAT free zones, and so on. For examples, see Cnossen 1981, International Bureau of Fiscal Documentation 1985, "EC" 1985.

4. As was indicated for the introduction of the VAT in the United Kingdom. See Hemming and Kay 1981, p. 82.

5. Hemming and Kay (1981) argue that "some exported services did bear the selective employment tax, while under the VAT some export services were zero rated, but the effect of this change was expected to be minor. All in all, exports were expected to increase by about 0.25 percent from the tax switch" (p. 82).

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3

Income Distribution and Tax Incidence under the VAT

Charles E. McLure, Jr.

Policymakers considering the adoption of a value added tax (VAT)—or any other tax, whether it is to be a new source of additional revenue or a replacement for revenues from another source—generally, and quite appropriately, are interested in the distributional implications of the tax.

This interest is generally captured in the question, Who pays the tax? There is naturally a desire to answer this question in the context of knowledge about the incidence of the existing tax system and to understand how the distribution of tax burdens compares with the incidence of the benefits of government spending.

Incidence studies can usefully be characterized as the "quantification of incidence assumptions." That is, economic theory provides best guesses about the incidence of various taxes among such broad groups as consumers, workers, and owners of capital, or about the burdens on such finely delineated groups as consumers of tobacco products, workers in a given industry, or corporate shareholders. These group burdens are then attributed to income classes on the basis of the best available information on the distribution of the economic activity bearing the tax (consumption, labor income, capital income, cigarette smoking, or whatever) among the income classes. The tax burdens are ordinarily expressed as effective tax rates, that is, as percentages of income in each income class, so that the progressivity of the various taxes can be judged. (Musgrave, Case, and Leonard 1974 and Pechman and Okner 1974 are well-known examples of this approach.)

Clearly the results of such studies can be no better than the assumptions and data underlying them. In some cases, for example, an excise tax on tobacco products or even a broadly based value added tax, tax incidence may be relatively straightforward: smokers and consumers, respectively, probably pay these two taxes.[1] But in other cases, including the corporate income tax and the property tax, the answer is far less clear.

Theory may give conflicting answers, even for thoughtful analysts, and empirical evidence is woefully deficient and ambiguous. Even worse, "standard" incidence assumptions are often uncritically applied in situations in which they are not appropriate. Finally the data required for a careful analysis of tax incidence often do not exist, especially in developing countries. Thus results for effective tax rates reported to the second decimal place exhibit "misplaced concreteness." Analysts are lucky if they know the last digit *before* the decimal with any confidence and should not pretend otherwise. Unfortunately, few admit the weaknesses of their analyses (even if they recognize them), and the readers are often left to their own devices to discover what results may not be legitimate.[1]

The situation is even worse if one turns to the expenditure side of the budget, where theory and methodology are less well developed. Too little attention is paid to the basic distinction between the incidence of benefits (who gets the benefits of public services) and the incidence of expenditures (how private income is changed by public expenditures). (For more on this distinction, see Musgrave 1959, ch. 10, and McLure 1971, 1974.) This confusion is compounded by the fact that in some cases, particularly in developing countries, ostensibly exhaustive expenditures (such as purchases of goods and services) are really thinly disguised transfers that have few real benefits except to those who receive the payments from the fisc.

This chapter elaborates on a few of the difficulties

of tax incidence studies. The following section compares partial and general equilibrium incidence analysis. The second section describes the difficulties of studies of tax incidence. Problems that arise in appraising the incidence of a value added tax are described in the last section. No attempt is made to discuss the corresponding difficulties of performing and interpreting studies of the incidence of benefits and expenditures. (But see McLure 1974 and DeWulf 1975.)

Partial versus General Equilibrium Analysis

Most studies of tax incidence try to determine "who pays the tax." They do not determine in a more comprehensive manner the overall effects of taxation on the distribution of income or on welfare. As a general rule incidence studies do not report the benefits, along with the burdens, of taxation, except when the differential incidence of taxes (the difference in the burden of two taxes) is being examined. Yet some taxes can produce important benefits, and taxation can alter the distribution of income or well-being in ways that are not captured adequately by standard (especially partial equilibrium) incidence analysis.

Consider a protective tariff that chokes off virtually all imports of a product and thereby encourages import substitution that allows domestic producers to earn monopoly profits. Standard incidence analysis would report only that the import duties are borne by consumers of the imported product. It would fail to report that a quasi tax is borne by consumers of the domestically produced import substitute, who must pay a price that is above the world price because of the protective tariff. Nor would it record the corresponding transfer of real income to the local producer earning monopoly profits. These unreported effects may be vastly more important than the tax burdens that are reported by standard incidence analysis. In the extreme case of complete protection, there would be no revenue to allocate to consumers, but the transfer from consumers to producers created by protection could be quite significant.

Consider next the incidence of the corporate income tax and ignore for now both the important implications of international capital mobility and the foreign tax credits granted by some capital-exporting countries; these are discussed in the next section.) The general equilibrium analysis of a closed economy, which was pioneered by Harberger, indicates that the corporate income tax is likely to reduce the income of owners of all capital by roughly the amount of the tax and to cause the prices of products of the corporate sector to rise in relation to those of the noncorporate sector. Incidence studies often estimate the burden distribution on the basis of Harberger's assumption that the tax is borne by all owners of capital, as well as on the basis of the more traditional views that it is borne by shareholders or is shifted to consumers or workers. But they hardly ever mention that those who consume disproportionate amounts of corporate products experience an additional burden on the use of their income, whereas those who prefer products of the noncorporate sector benefit from the shift in relative product prices. This oversight may be relatively unimportant, especially in industrial countries, where the composition of corporate and noncorporate consumption may not differ significantly across income classes.[2] But in developing countries—especially the poorest ones—this may be an important omission, since consumption of products of the corporate sector would appear to be significantly more important for high-income groups.

Economists have long recognized that taxes generally impose burdens on consumers and producers that exceed the amount of revenue obtained by the government. The so-called excess burdens of taxation reflect the loss of welfare that results from tax-induced distortions of economic decisions. Traditional incidence studies never consider these excess burdens, even though they may often be quite large in relation to tax revenue (or even exceed them).

To some extent the problems just described result from the way the incidence question is commonly asked. Concentration on who pays the tax does not naturally lead one also to ask who benefits from the tax and whose income is reduced as a result. Nor, as noted, does it consider the excess burdens of taxation.

A different methodology—applied (or computable) general equilibrium analysis—leads to a conceptually more satisfactory analysis of the distributional effects of tax policy. It attempts to specify production and consumption decisions (and financial decisions in some models), as well as interactions in the economy in a way that ensures methodological consistency and captures the general equilibrium effects on economic welfare. Since such analysis inherently incorporates all effects on the distribution of income and economic welfare, it automatically captures the excess burden of taxes.

Despite these advantages, general equilibrium analysis is not without problems; some of these are shared with traditional incidence studies, such as problems of data and issues of which taxes to analyze. A complete description of such problems is beyond the scope of this chapter, but a few can be noted. (See, however, the excellent summary by Shoven and Whalley 1984 and the articles in Scarf and Shoven 1984.) First, it is often difficult to describe complicated features of tax law in a way that allows their incorporation into a computable general equilibrium model. For example, an attempt to model integration of the corporate and personal income taxes may fail to capture important insti-

tutional realities. This problem is discussed further in the context of the VAT in the final section of this chapter.

Second, the incidence of taxes revealed by the model is dictated by the theoretical structure of the model and the values of key parameters.[3] This may seem to be attractive, since it reduces the latitude of the analyst in choosing incidence assumptions. But it can also be a trap based on illusion; after all, someone must choose the theoretical structure and the values of key parameters in the model (see Shoven and Whalley 1984, pp. 1030–31.) At least in traditional analyses of tax incidence it is less likely that unconscious decisions are made about incidence assumptions or that they are hidden deep in the bowels of a complicated system of equations.

Implementing Studies of Tax Incidence

Incidence studies commonly report effective tax rates at various points in the income distribution, since the distribution of tax burdens (their relation to income) across income classes is generally thought to be more relevant for policy analysis than the functional distribution emphasized by classical economists. In the more ambitious studies separate incidence patterns for the urban and rural (or agricultural and nonagricultural) sectors are also calculated. This section examines some of the difficulties that can be encountered in implementing (and utilizing results from) incidence studies.[4]

The Availability of Appropriate Data

The distribution of income among households or families seems more relevant than that among individuals for appraising the equity of income distribution and taxes. Thus income distribution and incidence studies commonly use information on the distribution of family (or household) income and consumption patterns taken from available household budget surveys. But the lack of data sometimes forces investigators to use the distribution of income for the economically active population. Sometimes even that is not available, however, and it is necessary to build up an estimate of the income distribution using fragmentary information from such diverse sources as employment surveys, income tax records, and surveys of agriculture, commerce, industry, and transport. Since such estimates involve piecing together data originally collected for other purposes, covering different years, and using different income concepts, they are inherently subject to considerable uncertainty. They may include the unemployed only with difficulty, and it is difficult to consolidate recipients of income and other individuals into families or households in any event. Moreover the absence of a suitable household budget survey poses severe problems when trying to attribute indirect taxes to various income classes based on consumption of the taxed items.

Even if a fairly recent household budget survey is available, troubles may still be encountered. Some such surveys are intended primarily to reveal the consumption patterns—not the distribution of income—of urban workers, which is needed to calculate a consumer price index. Results from such a survey can perhaps be used to attribute indirect taxes to income classes and to calculate effective tax rates, but they cannot be used without considerable trepidation as the foundation for estimating the distribution of income.[5]

At least two other problems face the incidence analyst. First, "income" in the sample is almost certainly not what economists mean by income. Most obviously it might be money income, excluding income in kind, such as the services of owner-occupied housing or consumption by subsistence farmers. Omitting certain forms of income in kind overstates the inequality of income and any tendency for taxes to be regressive. Beyond that (and producing an opposite bias), it may exclude valuable perquisites and fringe benefits supplied by employers, such as housing, meals, automobiles, and cash allowances of various types.[6] Finally, the treatment of such items as withheld income and payroll taxes and unrequired transfers from abroad is often far from obvious.

A further problem arises from the inherent difficulty of measuring capital and business income, especially in an inflationary environment. First, there are the important issues of the timing of the recognition of income and expenses. How, for example, has the respondent treated the increase in the value of growing timber and the related expenses of silvaculture? Related issues arise in other instances of multiperiod production. Second, have income calculations been adjusted for inflation? For example, has the loss in real value of unindexed bonds and other obligations fixed in nominal value been recognized? Are depreciation allowances adjusted for inflation? Since it is difficult even for trained specialists to construct proper measures of income in cases such as these, there is no reason to expect survey respondents to answer correctly.

Many public finance economists would attempt to approximate the Haig-Simons definition of income—consumption plus change in net wealth—in the classifier and in the denominator used to calculate effective tax rates in incidence studies. The most important step, inclusion of unrealized capital gains, is almost impossible to take, and even reliable data on realized capital gains may be difficult to obtain. But an important source of unrealized gains, retained earnings of locally owned corporations, can generally be attributed to shareholders. Once this step is taken, however, there is little reason not to include the corporate income tax

in the before-tax income figure for shareholders, *if* (or to the extent that) it is thought that the tax is not shifted. After all, the income (dividends or retained earnings) of shareholders could be higher without such a tax. Much the same can be said of export taxes that reduce the income of those in the export sector. But not all analysts will agree on the incidence of these various taxes; this issue is discussed further below.

Another problem involves the time span over which income is measured. A reliable picture of income distribution and tax incidence cannot be gained from a survey covering a short period. Even if a full year is covered by the survey, the problem is not eliminated, although it is greatly reduced. Transitory elements such as unemployment distort any estimate of income distribution. In addition, to the extent that consumption patterns are determined more by permanent (or life cycle) income than by current income, the regressivity of indirect taxes will be overstated if families are classified according to income. Classifying families by total consumption, rather than by current income, might help to alleviate this problem, but the data necessary to do so are generally not available—or are available only from special tabulations.

In most developing countries data on income distribution and consumption patterns are readily available only for the population as a whole or for major sectors of the economy. Only rarely are such data available for particular age cohorts.[7] Yet a society composed entirely of families with identical life cycle incomes who happened to be at different points in the life cycle would not have a rectangular distribution of income. Rather, the old and the young would be counted as relatively poor and those in their middle years as relatively well-off.[8] Although this kind of inequality of income across age cohorts might be disturbing, it should have nowhere near the same consequences for public policy as inequality *within* age cohorts.

A related problem with using data on income distribution is inherent in calculating effective tax rates at various income levels. A given income class will contain individuals with many different characteristics, such as smokers and nonsmokers, teetotalers and drinkers, workers and capitalists, and farmers and urban families. As a result the effective tax rate for the income class as a whole can mask large differences in the effective rates of tax paid by individual families within the income class, which results in horizontal inequities. (For a persuasive plea for more attention to horizontal inequities and a description of ways to analyze them, see Bird and Miller 1985.) The problem is not as bad if urban and rural sectors are considered separately, as is often the case. But even if this is done, horizontal differences within sectors can be considerable. It may be of little comfort to the heavily taxed Colombian coffee farmer or the Malaysian smallholder who raises rubber, for example, to know that the average rural family with the same income is relatively lightly taxed.

Diverse items may fall into the same category in a consumer budget survey. Heavily taxed Scotch whiskey and French champagne consumed primarily by the affluent; locally produced rum, gin, vodka, piscos, and aguardientes; popularly consumed local beers; and untaxed noncommercial drinks may all fall under the heading of "alcoholic beverages" in a consumer survey. Without a finer breakdown of consumption the taxes collected on these items may be allocated among households in a way that is quite incorrect and misleading, even if respondents report their consumption accurately (which for alcoholic beverages may be far from certain).

Many of the problems described above can be alleviated, although at some cost, by calculating the taxes paid by a representative household at a given income level. Under this "typical household" approach allowance can be made for the age of the head of the household, for particular aspects of consumption, and for various sources of income. This approach will isolate and emphasize age-specific tendencies in effective tax rates and horizontal inequities. Moreover, since consumption would presumably be related to permanent income, distortions created by transitory changes in income would not appear.

Despite the clear advantages of the typical household approach for some purposes, there are equally clear disadvantages. To define the typical household, for example, something must be known about the underlying distribution of income. Beyond that, something must be known about the consumption pattern of the typical family (or families), especially the relation between consumption and permanent income. (Bird and Miller 1985 describe the use of results from a special survey to analyze both horizontal and vertical aspects of various tax policies in Jamaica.) But if this much information is available, it might be possible to overcome most of the problems of the traditional approach.

Which Taxes to Include

The object of incidence studies might reasonably be to determine who pays for providing general governmental services. This view has important implications for the choice of which taxes and other sources of government revenue to include in—and to exclude from—incidence studies.

First, taxes that are related closely to benefits received from government services should be excluded from the analysis, or at least segregated from other receipts and their incidence reported separately. A simple but extreme hypothetical example should clarify this point. Suppose that the government supplies the optimal quantity of a service that has no external bene-

fits and is produced at a constant cost and then charges consumers just enough to cover the cost of production. People would then get just what they pay for, and the incidence of the fees charged would be of little interest, whether they took a greater or smaller share of income at the top of the income scale than at the bottom.

Although this example is admittedly extreme and artificial, its lesson is nonetheless important: benefit taxes should not be included in incidence analysis. Thus in many countries there is a valid reason to exclude social security taxes (where benefits are closely related to taxes), some export taxes (where revenues are plowed back into the export sector), and perhaps part of motor fuel and other automotive taxes from incidence analysis. In principle any of these—and others—should be included only to the extent that revenue exceeds the cost of providing identifiable benefits. Conversely, to the extent that revenue fails to cover the marginal cost of public services with identifiable beneficiaries, a subsidy exists and should be recognized in incidence analysis.[9]

Second, there is no reason to limit the analysis to sources of revenue that are designated as taxes, either officially or by common practice. Profits of liquor monopolies and lotteries should be (and usually are) included in incidence analysis. But so should the excess (or deficiency) of charges of government-owned public utilities over marginal cost. By focusing on revenues traditionally labeled as taxes and generally neglecting tax and subsidy elements in public utility prices, incidence analysts overlook a potentially important source of income redistribution through the fisc.

Finally, it is common to use a differential foreign exchange rate for important exports (with the central bank or the government appropriating the differential), rather than to levy a tax on export earnings explicitly. Official earnings from such sources are generally similar to taxes and should be treated as such in incidence studies.[10]

Assumptions about Tax Incidence

The assumptions about the incidence of many taxes are conventional and noncontroversial. Such is the case especially for indirect taxes, which ordinarily can reasonably be attributed to consumers.[11] But for other taxes the proper incidence assumptions are more controversial and deserve brief discussion.

Perhaps none is more controversial than the corporate income tax. Fortunately the area of controversy is greatly reduced by the existence of foreign tax credits in some important capital-exporting countries. To the extent that such credits are available, the host developing country simply appropriates revenue that would otherwise flow to the treasury of the home country of the multinational, and the tax is exported.

Theoretical arguments and empirical evidence can be marshaled to support tax burdens on shareholders, diffusion to owners of all capital, and a shift to either consumers or labor in industrial countries. (For a summary of this literature and further references, see Musgrave and Musgrave 1980, ch. 19.) Appraisal of the incidence in developing countries, however, may have to be based largely on theoretical arguments for several reasons. First, empirical estimates of a shift in developing countries are virtually nonexistent. Second, the empirical literature from industrial countries is far from conclusive, but in any case it would be of limited relevance in developing countries.

A theoretical argument that is particularly compelling rests on the international mobility of capital. If the developing country's corporate tax is below the tax creditable in the home country of multinational firms, the gross return earned by these firms effectively acts as a ceiling on gross returns in the domestic market. Thus the tax on domestic corporations is likely to be borne by local capitalists to the extent that it does not exceed the rate creditable in the home countries of the multinational corporations. (This line of reasoning is suggested by the analysis in Ballentine and Thirsk 1979.)

Once that key tax rate paid by multinational firms is exceeded, the argument changes drastically. In this case it can be argued that investment will be made in a developing country only if the corporate income tax can be shifted, say to consumers and labor. But international capital mobility may not be great enough to guarantee this result. Moreover potential economic rents and the desire to penetrate a market before it is preempted by competitors may induce firms to invest despite the corporate tax; in such a case shifting would not occur. Thus the conscientious incidence analyst may have little choice but to present alternative estimates for two or more incidence assumptions. This uncertainty is particularly unfortunate, since in many countries the degree of progressivity in the overall tax system depends crucially on how the corporate income tax is allocated among income classes.

During the 1970s a "new view" that the incidence of the property tax on improvements falls on owners of capital has come to replace the more traditional view that such a tax is borne by consumers.[12] But reasoning similar to that in the previous paragraph suggests that the tax on improvements may be borne primarily by consumers, and perhaps by workers and landowners, after all. Since in most developing countries the property tax is a relatively minor source of revenue, the uncertainty over its incidence is less disconcerting than that about the incidence of the corporate income tax.

Export duties are generally borne by those factors used in production for export, except under very special circumstances.[13] Yet some incautious analysts simply

assume that such taxes can be shifted to foreign consumers like indirect taxes on local consumption.

Comparability of Incidence Studies

Given the difficulties just described, comparisons of tax incidence between different countries, and even within the same country at different times, are hazardous. Two issues deserve special attention. The choices of which taxes to include and which incidence assumptions to use must be based on the economic realities in the particular country. In one country social security benefits may be closely linked to contributions, whereas in another the link between taxes and benefits may be so tenuous that these taxes should be included in the analysis. Similar comments apply in such areas as public utility pricing and the relation between automotive taxation and highway finance.[14]

Similarly the incidence analyst cannot simply go from country to country with a standard cookbook of incidence recipes, one for each tax. Because the appropriate incidence assumption depends on conditions in a given country, tax incidence must—to use the culinary analogy—be analyzed from scratch, instead of being a packaged mix. That is, the incidence of the corporate income tax is likely to depend on such conditions as the degree of production by state-owned enterprises, the extent of participation by multinational corporations in the corporate sector, the availability of foreign tax credits or tax sparing in the home countries of multinationals operating in the country, the mobility of capital in and out of (and perhaps within) the economy, the composition of corporate output, and the structure of industry in the country—things that can be known only through detailed analysis. (For a more detailed discussion of the pitfalls of using standard incidence assumptions for the corporate income tax, see McLure 1981b.) Similar comments can be made about the treatment of other taxes.[15]

Concentration on Politically Feasible Changes

A somewhat different final point relates to the purpose, legitimacy, and usefulness of tax incidence studies. There is an almost irresistible tendency to want to know the incidence of all existing taxes, in order to know whether the system is progressive or regressive and how it compares with the distributional effects of expenditures. After all, a regressive levy may be more palatable if it is part of a system that is progressive overall. But the theoretical legitimacy of using partial equilibrium analysis to "think away" the entire tax system is questionable; eliminating all taxes might have repercussions that are captured only quite imperfectly by standard incidence analysis.[16]

Moreover the usefulness of knowledge about the incidence of the entire tax system is also doubtful; after all, virtually no one seriously (and hardly ever successfully) suggests either abolishing the present tax system or doubling it. Rather, they may propose marginal additions or changes in present taxes. The analysis of such marginal changes is, of course, not subject to the methodological flaw just mentioned.

Future research should be devoted more to examining the incidence of politically feasible changes in existing taxes. Such studies should pay attention to details that are inevitably passed over in general incidence studies, which tend to be done with a broad brush. Care could be taken, for example, to assess the likelihood that an export tax might be partially shifted; the extent to which a higher corporate income tax might not repel capital because of unused foreign tax credits, economic returns or quasi rents, or the international immobility of capital; the possibility that urban property taxes might not burden the poor because of either legal or de facto exemptions; and so forth. Especially important in the present context, such research could reveal the distributional effects of differential rates, zero- rating, and exemptions under the VAT. (See also the next section.) These studies have direct policy implications and are interesting in their own right. (For a provocative example of the analysis of the incidence of changes in indirect taxation, see Bird and Miller 1985.)

Appraising the Incidence of the VAT

The incidence of the VAT can be examined on several levels, depending on the exact type of tax involved and on the availability of data. The easiest approach is simply to allocate the tax among income brackets on the basis of total expenditure on consumption or total expenditure on nonfood consumption, depending on whether or not food is taxed. Such an approach is likely to be satisfactory only if coverage is more or less universal, if a single rate is applied to taxed consumption, and if zero-rating, rather than exemption, is used when food is excluded. Of course these conditions are rarely encountered, and a more sophisticated analysis would ideally take account of both differing rates and exemptions from the tax base.

Unfortunately it is no easy task to meet this mandate. Although not all of the problems likely to be encountered can be described here, a few suggestions can be made, which are concerned more with methodological problems than with data problems.

In order to allocate to various income classes the VAT included in the prices of products bought by households in the income class, it is generally necessary to know how much VAT has been borne before—as well as at—the retail stage. Concentrating on the net tax

paid at the retail stage (that is, tax liability after credit for tax paid at prior stages) is almost never satisfactory.[17] Focusing on gross tax liability at the retail stage (that is, tax liability before credits) is satisfactory only under very special circumstances: the retail stage is subject to VAT, retail sales are made only to households, and all prior stages of production have been taxed (even if at a zero rate), with no breaks in the chain of credits.[18] Under this textbook specification only the tax rate levied on retail sales actually matters, since all VAT collected at prior stages is exactly offset by credits at the retail stage.

Posing the problem in this way indicates two important sources of problems. First, retail sales are not necessarily sales of final products to consumers, except in selected industries. More generally, retail sales include sales to business, for which an adjustment must be made in calculating gross liability on sales to consumers.

Second, and more important, the other two requirements listed above—coverage of all sales to households and no break in the chain of credits—are unlikely to exist in practice. A few examples will indicate the importance of this qualification. Retail sales of certain goods and services may be exempt from VAT; housing, financial services, education, and medical services are common examples. Exemption of the retail stage does not, however, necessarily mean that no tax is embodied in the price of such goods and services. Unlike zero-rating, exemption does not provide for the recoupment of taxes paid before the retail level. A thorough analysis would attempt to allocate preretail taxes to consumers of these exempt products.

A break in the chain of credits will also imply that all taxes embodied in the price of a given product subject to tax will exceed the gross liability at the retail stage. This can happen, for example, with exempt financial and insurance services provided to businesses, exemptions for farmers and small business, and commercial and industrial real estate (if construction and sale of buildings are taxed, but rentals are exempt). In most cases results will probably not be greatly distorted if the excess taxes that result from breaks in the chain of credits are simply allocated according to some broad measure of consumption, such as total consumption or nonfood consumption. But in other cases, such as exemptions for small business and farmers, shifting taxes forward to consumers would appear to be unlikely, and placing the burden on the exempt group would appear to be more reasonable. Quantifying these excess taxes may generally be quite difficult without a general equilibrium methodology of the type described below.

A partial equilibrium analysis that focuses only on sales to ultimate consumers, with ad hoc adjustments for taxes paid at prior stages, is unlikely to satisfactorily capture the effects just described. Clearly a general equilibrium framework that allows for input-output relations is required.[19] Such a framework can take explicit account of taxes paid at the preretail as well as retail stages of production and distribution. The analysis would ideally reflect the mechanics of the credit method of collecting the VAT: gross liabilities would be calculated by applying the appropriate tax rate to sales, and credit would be allowed for taxes paid on inputs by registered sectors (those not making exempt sales); for exempt sectors, no credit would be allowed for tax paid on inputs.[20] In all cases net liabilities at all stages of production would be aggregated through input-output relations.

No study is known that actually follows this methodology. The ambitious study by Ballard, Scholz, and Shoven (1986) examined the effects of both a flat rate VAT and a VAT with differential rates, but it neglected the important aspects of the problem just described. For example, in the differential rate analysis it assigns a zero tax rate to financial services, other services, and housing, thus ignoring all taxes collected at prior stages. Moreover there is no allowance for breaks in the chain of credits in the production and distribution of other goods and services under either the flat rate or differential rate analysis. The approach used by Ballard, Scholz, and Shoven is thus perhaps best characterized as an analysis of a tax levied at differential rates on sales to ultimate consumers; it is not truly an analysis of a VAT as one actually works.[21]

Notes

The author wishes to thank Wayne Thirsk for helpful comments on an earlier draft of this paper.

1. But even here, see the contrary view expressed by Browning (1978 and 1985) that where transfers are important, such taxes are borne by owners of productive factors rather than by consumers.

2. Devarajan, Fullerton, and Musgrave (1980) suggest that partial equilibrium analysis often indicates the general equilibrium incidence of taxation fairly well.

3. Shoven and Whalley (1984, p. 1045) warn that "model preselection can thus powerfully affect the conclusions that are reached."

4. Personal experience in a half-dozen countries—including some recent experience—suggests that even in the mid-1980s problems of the type described here are likely to be encountered in many—but not all—countries.

5. For this reason estimates of effective tax rates are probably more reliable than the estimates of income distribution.

6. Whether benefits of public services should be included in income or should only be the subject of expenditure analysis is a controversial issue.

7. Social security and other data on earnings could reveal the distribution of earnings among and within age cohorts.

Household surveys generally cannot be tabulated to provide similar information on age-specific nonlabor income and consumption patterns, because the samples are not large enough for such tabulations to be statistically meaningful.

8. An interesting methodological issue in industrial countries, if not in developing ones, is how to treat contributions to pension funds, the earnings of such funds, and retirement pensions. A cash-based definition of income would report income only when the pension is received, but an accrual-based system would report it as contributions are made and as earnings on funds accrue. See U.S. Department of the Treasury (1984), vol. 1, pp. 57–61.

9. In this discussion marginal cost pricing is taken as the proper benchmark for measuring tax or subsidy elements in prices. A discussion of the relative merits of using average and marginal cost pricing as the basis for comparison would take us too far afield, but the modifications are clear.

10. A final problem in the choice of which taxes to include is well illustrated by the following quotation from a document published by the U.S. Treasury Department (1977):

> Present law does not tax the interest on municipal bonds; therefore, a holder of such bonds receives less interest than he might receive if he invested his funds in fully taxable securities. The difference between what he receives and what he could receive is his implicit tax. It is *implicit* because no revenue is paid to the U.S. Treasury. It is nonetheless a *tax* because the bondholder's after-tax income is reduced in the same way as if he paid a tax....
>
> There is an implicit tax corresponding to many tax benefits to capital income.... Implicit taxes make the present tax structure as measured by effective tax burdens somewhat more progressive than it may at first appear.
>
> Taking account of these implicit taxes in developing countries might be an almost insurmountable task, given the lack of readily available data on returns to various types of investment. Moreover, they may be somewhat less important in developing countries than in developed countries a) because capitalists may not make marginal investment decisions with the same precision found in (or at least attributed to capitalists in) developed countries and b) because taking account of implicit taxes would change the estimated incidence within a relatively small fraction of the population at the very top of the income scale that pays income tax.

11. But see Browning (1978) and (1985). As noted earlier, import duties also act as a subsidy to protected domestic producers. They may also burden other export industries.

12. See Mieszkowski (1972), Aaron (1975), and McLure (1977). For an extended discussion of the incidence of the property tax in developing countries, including additional refinements and references, see McLure (1979).

13. For a discussion of these circumstances in a slightly different context, see Gillis and McLure (1975). Dominance of the world market by taxing nation(s) is generally required if such taxes are to be shifted to consumers. See also McLure (1981a, 1983a, and 1983b). If export duties cause devaluation, part of their burden is shared by consumers.

14. Bird and DeWulf (1973) clearly recognize the importance of the list of taxes subject to analysis, because they note whether social security taxes, earnings on differential foreign exchange rates, and fees are analyzed in each country. Even so, one can determine whether the particular choices made in specific studies follow a clear-cut rationale, instead of being haphazard, only by reading the original studies. Unfortunately even a careful reading is not enough if the author has failed to explain the choice of taxes included.

15. Again, Bird and DeWulf (1973) recognize the importance of incidence assumptions and devote three and one-half pages in their attempt to categorize and appraise the assumptions made in the studies surveyed. But once again it is difficult to know whether the assumptions made in a given country reflect careful analysis or the myopia of the analyst. This being the case, there is yet another reason to be suspicious of any comparisons across countries or time.

16. This point is made with particular force in DeWulf (1975), pp. 96–98. Bird (1980, p. 77) has written, "Empirical studies of the extent of income redistribution through the fiscal system have clearly opted for scope rather than reliability, so it should not be surprising that the significance of the results of such studies must be regarded with great doubt." General equilibrium analysis is somewhat less vulnerable to this objection.

17. Exceptions would be totally vertically integrated production (including some services), direct imports by consumers, and sales of imports not subject to VAT at the border or subsequent preretail sales.

18. This discussion is couched entirely in terms of the credit method of implementing a VAT. Focus on tax liability at the retail level would never be satisfactory under the subtraction method, except in the cases listed in note 17 above. Feeding prior-stage taxes through the input-output analysis (described below) should be somewhat simpler for the "naive subtraction method" (a term given to the standard textbook description of the subtraction method in McLure 1987) but not for the "sophisticated subtraction method" (also described there).

19. See Aaron (1968) for an early attempt to utilize input-output analysis to determine the differential price effects of a gross product type VAT. The methodology of this analysis appears to be most appropriate for a subtraction method VAT. Thus it does not address the difficulties noted in the remainder of this paragraph.

20. It would, of course, be unusual that a model would have enough disaggregation to allow distinction between exempt small businesses and other businesses.

21. Because housing, financial services, and other services are not really tax-free in the typical European VAT, Ballard, Scholz, and Shoven's estimates of welfare loss probably understate the relative neutrality of the differential rate VAT. Because some breaks in the chain of credit are virtually inevitable for administrative reasons (for example, for financial services), any flat rate VAT levied in the real world is not likely to be as neutral as this study suggests.

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Part II

Lessons from the Experience of Developed Countries

Interjurisdictional Coordination of Sales Taxes

Sijbren Cnossen

This chapter surveys and evaluates the principles, criteria, and practices that govern the interjurisdictional coordination of general taxes on goods and services, or sales taxes. Although other approaches are possible, in general taxes on commodities entering interjurisdictional trade may be levied according to the destination principle (imports taxed, exports exempt) or the origin principle (imports exempt, exports taxed). A discussion of the equity, efficiency, and administrative considerations involved in choosing between these two principles leads to the conclusion that the destination principle is the preferred choice. The application of this principle is then examined in a setting of independent nation-states with border controls, in a common market such as the European Community (EC) that wishes to banish such controls, and in a federal system such as the United States in which border controls are not allowed. The remainder of this introduction places the sales tax principles in an appropriate analytical context and summarizes the chapter's main findings and conclusions.

• *Principles of sales taxation.* The sales tax family comprises—in the order of their historical appearance—the turnover tax, the manufacturers tax, the wholesale tax, the retail tax, and the value added tax.[1] Shoup (1969, pp. 208–09) lists the methods by which interjurisdictionally traded goods are treated under each of these taxes. Eight situations—including no tax at all—are possible (table 4-1).

The universal sales tax (type 2) and the domestic-only sales tax (type 3) are rarely encountered. Under the universal sales tax the domestic tax would be imposed on imports but would not be remitted on exports. This treatment is thus equivalent to the destination principle plus an export tax or the origin principle plus an import tariff. The reverse situation is found under the domestic-only sales tax (type 3); goods produced for home use are taxed but both exports and imports are exempt. This tax is conceptually bizarre and is administratively infeasible because it extends an open invitation to tax evasion.

Under types 4, 5, and 6 the sales tax is levied on imports (type 4), on exports (type 5), or on both imports and exports (type 6), but in no case are commodities that are produced and consumed at home included in the base. Import and export duties are usually selective rather than general taxes. The import duty, if levied, is mainly a protective tariff. Export duties often take the form of taxes on natural resources or agricultural products. The distinguishing feature of import and export duties is that they are pure border taxes—that is, they are imposed only on goods that cross international frontiers. As such they are inimical to international trade because they reduce trade volumes below the level that would be regarded as desirable under the principle of comparative advantage. Since border taxes by definition do not require coordination, they fall outside the scope of this paper.

This leaves the destination-principle sales tax (type 7) and the origin-principle sales tax (type 8). Under the destination principle commodities are taxed on the basis of location of consumption or destination—that is, the jurisdiction in which they are consumed, regardless of where they are produced. Exports must leave the exporting jurisdiction free of tax, and a compensatory tax is required on imports so that they can compete on an equal tax footing with domestically produced

Table 4-1. *Types of Sales Taxes with Respect to Interjurisdictional Trade*

Type	*Hh*[a]	*Ha*[b]	*Ah*[c]	*Designation*
1	E	E	E	No tax
2	T	T	T	Universal sales tax
3	T	E	E	Domestic-only sales tax
4	E	E	T	Import tax
5	E	T	E	Export tax
6	E	T	T	Export-import sales tax
7	T	E	T	Designation-principle sales tax
8	T	T	E	Origin-principle sales tax

Note: H = produced at home; h = consumed at home; A = produced abroad; a = consumed abroad; E = exempt; T = taxable.
a. Nontraded goods, import-competing goods, and exportables consumed domestically.
b. Exported goods.
c. Imported goods.
Source: Shoup (1969), p. 209.

goods. The export rebate and the import sales tax, termed border tax adjustments, are generally effected through border controls; customs posts ensure that exported goods actually leave the taxing jurisdiction and that imported goods actually attract sales tax.

Under the origin principle commodities are taxed on the basis of their place of production or origin—that is, the jurisdiction in which they are manufactured, regardless of where they are consumed. On the face of it, the origin principle does not require explicit border tax adjustments because imports are not taxed and no rebate is given on exports. But, as shown below, this is misleading. For instance, under an EC-type value added tax, a notional tax credit has to be attached to imports to prevent their being taxed in subsequent domestic stages of production and distribution, and exports must be valued on some arm's length basis to ensure that they bear the full domestic tax on leaving the jurisdiction of production.

Invariably, international trade in commodities subject to a general sales tax is conducted under the destination principle. In federal countries with local, provincial, or state taxing jurisdictions, however, goods may be taxed on the basis of their origin. In the Federal Republic of Germany and in Luxembourg *Gewerbesteuern* are imposed on sales (in combination with a tax on wages and capital), and no tax rebate is given on exports. The origin principle is applied because these subordinate governments cannot effect border tax adjustments. From time to time it has been suggested that the Common Market adopt the origin principle to get rid of border controls.

• *Findings and conclusions.* There are three main considerations in the choice between the destination principle and the origin principle: interjurisdictional equity or tax base entitlement; allocative efficiency or, more precisely, locational neutrality; and administrative feasibility.

In economic theory it makes no difference to allocative efficiency whether the destination principle or the origin principle is applied. The equivalence theorem postulates that the substitution of one principle for another will have no effect on relative prices and trade in real terms, provided that domestic prices and exchange rates are perfectly flexible. But the condition of price and exchange rate flexibility is so far from being met in practice that it is advisable to refrain from applying the theorem. Moreover, the theorem holds only for a truly general, uniform-rate sales tax on all goods and services—a tax that has no counterpart in the real world. In such a situation, as argued in the tax literature (Hufbauer 1977), a destination-based tax system places the effects of tax-induced distortions in the product market because the structure of world prices facing producers remains unchanged. By the same token, an origin-based tax shifts tax-induced distortions to the factor market because the structure of world prices facing consumers is unchanged. Since there is a presumption that rigidities in factor markets are more severe than those in product markets, a sales tax that applies the destination principle is preferable. It is difficult to contest this choice on equity grounds. The origin principle appears to violate the equal treatment rule and receives little or no support from the benefit-received approach. (These approaches are discussed in the next section.) Moreover, the origin principle involves far too much valuation of each export and import.

Thus it is perhaps not surprising that the destination principle has been widely accepted as the best approach for dealing with the tax implications of interjurisdictional trade. Between nation-states the required border tax adjustments can be effected more precisely as one moves from the turnover tax to the value added tax. The adjustments with respect to turnover taxes are inherently indeterminable because the amount of tax borne at the stages preceding the export stage and the precise amount of the compensatory tax to be imposed on imports are unknown. The treatment of imports is problematic under manufacturers and wholesale taxes

because an equal-rate compensating import tax discriminates in favor of goods imported by nonregistered traders and consumers. Border tax adjustments are hardly necessary under a retail sales tax because by definition the tax is largely destination based. In practice, some element of tax may be incorporated in the price of export goods, since producer goods may not be fully free of tax. Full border tax adjustments are most readily achieved under value added taxes that rebate all prior-state taxes declared on purchase invoices and that correct automatically in the domestic stages for any understatement of the import tax.

Border controls are an accepted phenomenon among independent nation-states. But they are contrary to the philosophy of a common market such as the EC that wishes to attain all the characteristics of a domestic market in which there are no border controls and indeed no exports and imports. It has long been thought that to get rid of border controls the EC should abolish border tax adjustments by replacing the destination principle with the origin principle in its internal trade. This chapter shows that such a move would be unnecessary, undesirable, and infeasible.

The solution to abolishing border controls in the EC lies in shifting border tax adjustments to books of account. This can be done under either of two approaches. Under the *deferred payment scheme* the compensatory import tax is collected not from the importer but from the first inland recipient of the taxable goods, and export rebates can be based on documentary evidence rather than physical controls. A principal drawback of this scheme is that there is a break in the tax chain from producer to consumer. This does not happen under the *tax credit clearance system*, which taxes exports but allows importers a credit for the out-of-state tax that they in turn present for payment to the exporting state's tax administration. Although this system is more comprehensive than the deferred payment scheme, it requires EC-wide agreement, which is difficult to secure. If it were adopted, some realignment of the coverage of the various value added tax rates of member states would be desirable. Both the deferred payment scheme and the tax credit clearance system are destination-based solutions to the problem of abolishing border controls. Unlike the conventional import sales tax procedure, both methods are neutral with respect to trade.

On its way to abolishing border controls, the EC will have to face many of the same problems encountered under the retail sales taxes that are administered by states and provinces in the United States and Canada. Most U.S. states levy use taxes on out-of-state purchases of taxable goods, but taxes on interstate mail order and direct-marketing sales and border sales, as well as on some part of taxable business-to-business sales, escape collection because the sales are not always declared. The current situation of rising tax rates and revenue needs and increased competitive distortions requires much tighter interstate cooperation. Federal legislation may be necessary to require mail order firms to collect and remit the tax of the destination state. An alternative would be a direct federal tax on interstate mail order sales, but this might be considered an abridgment of the states' power to tax.

It should be pointed out that in practice no sales tax is neutral with respect to consumer and producer choices in the jurisdiction in which it is imposed. By extension, every sales tax is bound to distort trade with other jurisdictions, whichever principle is applied and regardless of the accuracy of border tax adjustments. As is well known, cumulative effects that reduce specialization and hence economic growth and that cause erratic variations in the ratio of taxes to consumer prices are inherent in turnover taxes. But manufacturers and wholesale taxes also distort patterns of industrial and trade organization. Under the Canadian manufacturers tax, for instance, significant valuation problems arise from the treatment of similar sales at different trade levels, transfers between related parties, sole distributors, and private brands. Moreover, the tax base of the preretail taxes is highly incomplete because services are excluded and trading margins are not included in the taxable value. Differentiated rates compound the resulting distortions. These effects also occur under retail and value added taxes that, in practice, are not simple uniform taxes on all consumption but fall in part on investment and with different weights on various consumption goods and hence on different consumers. Therefore, any sales tax, whatever its form, materially affects the level and composition of domestic production and consumption and hence the level and composition of interjurisdictional trade flows.

Throughout this chapter the analysis is illustrated by reference to members of the Organisation for Economic Co-operation and Development (OECD), but the arguments are equally applicable to other countries. (For a recent survey and evaluation of sales taxes in industrial countries see Cnossen 1983b.) Furthermore, taxes on specific commodities are not covered, although the issues and problems of coordinating excises on, for example, alcohol, tobacco, and petroleum products differ little from those encountered under sales taxes. Unless the contrary is indicated, it is assumed that sales taxes are added to the final price and that their incidence reduces the real income of consumers.

Criteria for Sales Taxation

Although no doubt other factors enter into the choice between the destination principle and the origin principle, the main considerations have to do with carv-

ing up the sales tax base between two or more jurisdictions as fairly as possible (interjurisdictional equity), in a manner that does not interfere with consumer and producer choices, particularly decisions about the location of manufacturing (locational neutrality), and in a form that is as simple and certain as possible for the taxpayer and the tax administrator (administrative feasibility).

Interjurisdictional Equity

Interjurisdictional equity, or tax base entitlement, means that the proceeds derived from the taxation of goods and services produced or consumed in two or more jurisdictions should be distributed fairly among the jurisdictions that share the same tax base.[2] In turn, within and between jurisdictions the principle must be applied to individual taxpayers through either the equal treatment rule or the benefit-received principle.

Equal treatment rule. Equal treatment means that sales taxes should be imposed with no distinction between similarly placed producers and consumers. Equal treatment is not the same as horizontal equity under the income tax, since the index against which such treatment is measured is not comprehensively defined. Equal treatment does not mean that a tax on automobiles is inequitable because people who do not own cars do not pay it, but it does mean that all automobile owners—that is, persons similarly placed—should pay the tax.

On the face of it, the origin principle appears to come into conflict with the equal treatment criterion. To illustrate, suppose that jurisdiction A imposes a general sales tax of 10 percent and jurisdiction B a tax of 20 percent. If A exports to B automobiles that compete with similar but more highly taxed automobiles produced in B, then, under the origin principle, a foreign car sold in jurisdiction B has only a 10 percent tax on it (aside from the value added in B by marketing the car there), compared with the 20 percent tax on a domestically produced car. An analysis of the alterations that adoption of the origin principle brings about in the exchange rate (see below) is unlikely to convince the domestic automobile producer that no unfairness or inefficiency arises from the difference in tax rates. If the tax rate differential is reversed—if the tax rate in the exporting jurisdiction is high—the origin principle will be perceived as unfair to the producer in A, whose cars must now sell at a higher price in B than cars produced in B.

Under the destination principle these perceived injustices disappear, but in their place arises a perceived unfairness against producers of nontraded goods or importers in the exporting jurisdiction in favor of those who produce traded goods and therefore seem to benefit from the exemption or zero-rating of exports. Similarly, if two jurisdictions have different destination-based sales tax rates, the domestic producer in the lower-tax jurisdiction may believe that he has to pay a higher "price of admission" to the higher-tax jurisdiction than the foreign producer has to pay for admission to the domestic market. In practice, these forms of unfairness seem to be regarded as less unfair, or at least seem to receive less attention, than the perceived unfairness of rate differences under the origin principle.

Benefit-received principle. Under the benefit-received approach taxes are considered proxies for the payment of goods and services supplied by the government. The idea is that the cost of such services, insofar as it is allocable, should be charged to those who benefit from them—although often benefits are only partly discernible and charges are only an imperfect approximation of cost. The benefit-received principle makes sense in respect to, for instance, government-provided transport, education, and health services. It could also conceivably apply to the provision of the legal conditions, including the enforcement of contracts, that make production and export possible or to the maintenance of a clean environment that contributes to health and general well-being.

In relation to the origin principle, the benefit-received approach implies that the revenue from the sales tax on a traded good, up to the time it is exported, goes to the exporting jurisdiction—that is, the jurisdiction in which the good has been produced. Presumably the consumers of the goods in the importing jurisdiction would pay the tax in the price, and, quite properly, they would ultimately defray the costs of the goods and services the exporting jurisdiction's government has rendered to the producing firms. Under the destination principle the consumers would pay just as much, but all of the sales tax included in the price, not just the tax on the value added in the importing jurisdiction, would go to the importing jurisdiction's government. The ideal case for the destination principle, by that reasoning, would be one in which the exporting jurisdiction's government supplied few or no services to the firms involved, whereas the importing country was heavily engaged in supplying services to consumers.

On closer inspection, however, the benefit-received approach does not cut much ice as a rationale for tax base entitlement. A favorable institutional climate has great financial and economic significance, but it, like the rights of free speech and assembly, can be provided at practically no cost. It is therefore not possible to charge a sales or value added tax on these grounds. To be sure, exporting firms do benefit from government services such as the provision of roads, canals, and en-

vironmental protection, but obviously sales or value added is not an appropriate base for charging such firms for the benefits received. Rather, selective taxes, such as road user charges and effluent levies, are needed. The benefit-received justification for sales taxes finds little or no support in the real world (Musgrave 1969, p. 242).

Locational Neutrality

The maxim of comparative advantage gives rise to an important requirement for interjurisdictional efficiency: sales taxes should not distort the relative costs of home-produced and foreign-made goods. In the absence of a sales tax or under a neutral tax, each jurisdiction, it is argued, would produce those goods that it can make more cheaply than can other jurisdictions, and all jurisdictions would obtain a higher real income than if, as a result of the tax (and not because of rising costs), they also produced goods that might be manufactured more cheaply elsewhere. In short, the tax should be neutral in its effect on the location of manufacturing facilities.

The well-known equivalence theorem postulates that under certain conditions it makes no difference for locational neutrality which of the two principles is applied to interjurisdictional trade if exchange rate adjustments are taken into account.[3] A destination-based tax added to price will have no trade effects, since the consumers in the taxing jurisdiction will find the relative prices of foreign-made and home-produced goods unchanged. Conversely, if prices stay unchanged while factor costs decline, the taxing jurisdiction's currency will appreciate in relation to other currencies, but trade will not be affected. If an added-on production tax is the preferred choice, imports will rise. This rise will increase the demand for and hence the price of the importing jurisdiction's currency and will thereby dampen the desire for imported goods and restore the original trade position. Thus, whatever is done, relative prices will be unchanged, and trade will be unaffected in real terms. More generally, exchange rate adjustments should cancel the effects of a changeover from the destination principle to the origin principle or the other way around.

This conclusion is gratifying until it is remembered that the equivalence of the destination principle and the origin principle is a long-run phenomenon in which domestic product or factor prices and exchange rates are perfectly flexible. In the short run, however, prices and rates are fixed, and a change from one principle to another affects a country's competitive position and balance of payments, as illustrated by the German and French experiences. Following the introduction of the EC value added tax at the end of 1968, Germany reduced its export rebates below the tax borne by previous stages and lowered the compensatory import tax below the domestic rate. Although the latter measure should have meant merely a partial postponement of the tax payment, the reduction in the export rebate had the effect of a revaluation of the deutsche mark and thus reduced a substantial trade surplus that had given rise to speculative short-term capital inflows. At about the same time France moved in the opposite direction. It abolished the 4.25 percent payroll tax, which was levied on the origin principle, and, to replace the revenue forgone, raised the value added tax and increased the destination-based border tax adjustments correspondingly.

In addition to the foregoing considerations, a general tax levied at a uniform rate on all goods and services has no counterpart in the real world. All sales taxes, whatever their form, exclude some goods and most services from their base, apply differentiated rates, and exhibit cumulative effects, thus distorting consumer and producer choices to a greater or lesser degree.[4] In this situation the choice of border tax adjustment system materially affects the level and composition of domestic production and consumption and, therefore, the level and composition of interjurisdictional trade flows. A shift from the destination principle to the origin principle will increase consumption and decrease production of heavily taxed goods and, conversely, decrease consumption and increase production of lightly taxed or exempt commodities, with corresponding effects on imports and exports.

Finally, as shown in the professional literature, for the equivalence theorem to hold, trade between jurisdictions must initially be balanced. There also should be no net transfer payments (for example, interest on debt) from one jurisdiction to the other and no net flow of capital to one jurisdiction. If these conditions were met—a highly unlikely assumption—interjurisdictional differences in (uniform) sales tax rates would not lead to a reallocation of production and hence to economic inefficiency if, say, the member states of the EC replaced the destination principle with the origin principle to eliminate border tax adjustments and border controls.[5] But in the models for such a scenario factors do not move across countries—an assumption that contradicts one aim of a true common market and therefore should not be made. Furthermore, it has been shown that even a uniform sales tax rate throughout the EC will not (save under certain unlikely conditions) prevent income transfers among member states under the origin principle (see Berglas 1981, Shibata 1967, and Whalley 1979 and 1981). In conclusion, the conditions necessary for the equivalence theorem to hold are so far from being met in practice that it would seem to be desirable to heed

Shoup's (1954) early warning against general application of the theorem.

Administrative Feasibility

The third criterion concerns administrative feasibility. One of the great advantages of a destination-principle sales tax, particularly a value added tax that extends through the retail stage, is that in applying border tax adjustments, administrators do not have to worry about underlying taxable value. The notion of taxable value is irrelevant for export rebate purposes; all prior-stage tax is simply refunded. But even at the import stage there is little concern. Under a tax-credit type of value added tax, any underpayment of tax owing to undervaluation at the border is caught at the first taxable stage inland. In the end every domestic and imported good is always taxed in full at the rate applicable at the retail level.

Thus the notion of taxable import value has little relevance if goods are imported by registered traders. Since the value added tax extends through the retail stage, only consumers might benefit from underdeclaring their imports. But normally—say, in the case of cross-border shopping—they would already have paid the full value added tax of the exporting jurisdiction, as neither they nor the supplying firm in that jurisdiction would be entitled to an export rebate. Thus the advantage, if any, to a consumer would be small; in effect, out-of-state purchases would be taxed on the basis of their origin. The likelihood of a tax advantage would be even smaller if imported consumer goods were taxed again at the border.

The tax aspects of interjurisdictionally traded goods —which are handled with relative ease under the destination principle—become a nightmare when the origin principle is applied in full. Since the jurisdiction of production then claims the tax on value added up to the time of export, exported goods must be valued for tax purposes, which can be a highly contentious matter. Presumably, in some cases actual selling prices might be used, but in a large and growing number of interlocking interjurisdictional transactions some arm's length principle would be necessary. This would be difficult to administer, as anyone familiar with customs operations knows. Similar difficulties would arise on the import side of the ledger. To prevent the import value from being taxed at subsequent stages under the tax credit technique, some notional credit would have to be attached to imports (at the import stage!) equal to the importing jurisdiction's tax rate times the import value.[6] Again, the appropriate underlying value would be an issue on which parties would not be likely to agree forthwith.

These administrative problems would be compounded under the restricted origin principle that has been recommended for use in the EC. Imagine goods passing through several jurisdictions before being exported to, say, the United States. At each internal border the notional import tax credit, based on the importing jurisdiction's value added tax rate (which might be the same as or different from the exporting country's tax rate) would have to be established. Then at the second and subsequent export stages credit would have to be given for the same country's notional import tax. In short, the origin principle requires valuation of each import and export—an excessive amount.

Concluding Comment

Not surprisingly, the consumption base is generally associated with the destination principle, and the income base is usually linked with the origin principle. This permits the simple solution whereby the destination jurisdiction imposes a consumption tax and the origin jurisdiction levies an income tax. There is, however, no logical reason why the pairing has to be of this convenient form. Suppose that the claim to the tax base is defined in destination terms but the destination jurisdiction wishes to place its tax system on an income base; or suppose that the claim to the tax base is defined in origin terms but the jurisdiction of origin wishes to apply a consumption tax. In the first case the jurisdiction of destination would tax the income earned in the production of goods produced at home as well as the income earned abroad in the production of its imports. In the second case the jurisdiction of origin would tax the consumption of its own products at home as well as the consumption of its exports abroad. In both cases some intergovernmental transfer mechanism would be needed, which is not the case for the more conventional forms of pairing. Thus, feasibility may dictate the pairing of destination with consumption and of origin with income, but there is no logical reason for this outcome. After all, any one jurisdiction is entitled to choose whether it wishes to rest its tax system on an income or a consumption base, whereas the question of entitlement to bases in relation to trade (who is allowed to tax what) is a matter of interjurisdictional property arrangements among nations.[7]

Coordination of Sales Taxes

The destination principle emerges as the preferred basis for coordinating sales taxes among different jurisdictions, which range from independent nation-states to local governments with semiautonomous taxing powers. Common markets such as the EC—which presently operates as a customs union but is striving toward an economic union—and federal systems such as the

United States and Canada, in which states and provinces have substantial tax autonomy, are located between these poles.

This section examines the various forms of sales tax coordination in these diverse political and economic settings. To define the settings more closely, a nation-state is understood to pursue independent economic policies. Subject to international agreements and the possibility of retaliation, such a state may not be much concerned about international equity and efficiency; the exchange rate is flexible; and there are border controls to effect border tax adjustments. In a common market, member states care about competitive distortions, the exchange rate is fixed but adjustable, and the objective is to abolish border controls. In a federal system, states and provinces cannot pursue their own economic policies but have substantial independence in the tax field. Border controls are not permitted, but presumably border tax adjustments are allowed. Finally, local governments have less flexibility since border tax adjustments cannot be made; there is little, if anything, to coordinate in the sales tax area.

Independent Nation-States

Destination-based border tax adjustments among independent nation-states are governed by the provisions of the General Agreement on Tariffs and Trade (GATT).[8] Article 3, paragraph 2, of part II of the GATT provides that "the products of the territory of any contracting party imported into the territory of any other contracting party shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied directly or indirectly to like domestic products." Furthermore by implication, article 16, in conjunction with a note attached to it, permits the exemption of an exported product from duties or taxes borne by the like product when destined for domestic consumption. Although these and related provisions have been the subject of much debate, clearly their purport is that compensatory import taxes should not be used to protect domestic production and that export rebates should not be employed to subsidize exports.[9]

To implement the destination principle, border tax adjustments among independent nation-states are enforced through border controls, which were originally installed to ensure compliance with border taxes. Invariably, sales tax laws stipulate that compensatory import taxes should be levied as though they were import duties administered by the customs authorities. It follows that before being admitted to the country imported goods subject to sales tax pass under the power and supervision of customs personnel and are handed back to the importer only after the required documents have been cleared and the tax has been paid. Generally, the compensatory import tax is calculated on the import-duty value of goods (an arm's length price concept) plus any import, customs, and excise duties. For the domestic sales tax, this procedure implies that, unless a suspension technique applies, the compensatory tax on imports is due and payable on purchases rather than on sales.

Of all sales taxes, the turnover tax is the most intractable and nonneutral in its effect on both domestic products and imported and exported goods.[10] Since a turnover tax strikes every sale at nearly every stage of production and distribution with no allowance for tax already paid at earlier stages, the total amount of the tax included in product prices varies widely, even for products taxed at the same nominal rate. Border tax adjustments cannot be reliably determined. Simple exemption of export sales takes no account of turnover tax collected at earlier stages. A rebate of such tax can only be approximate because of the differing number of selling stages that different goods go through before being exported and the differing values added at those stages. The same applies to imports. To match the cumulative burden of the tax imposed on goods produced domestically, the compensatory tax rate should in principle be higher the closer the good is to its final form, but how much higher cannot be ascertained with reasonable certainty.

Under the manufacturers sales tax levied in Canada, the compensatory import tax is normally payable at the time of importation, but it is payable subsequently for imports by registered manufacturers because the suspension technique applies.[11] Manufacturing exporters do not normally pay tax because they are integrated forward to the export stage. Tax paid by other exporters may be refunded, and in some cases the refund equals the total tax paid on the product. Where goods are imported by nonregistered traders, it is alleged that an equal-rate import tax favors imported goods over domestically produced goods because the taxable value of the latter may include marketing costs (advertising, financing, warranty, and the like) that are not reflected in the value of imported goods. Furthermore, in the case of nonlicensed traders, the Canadian sales tax, for instance, is applied to the duty-paid value of goods, and under the provisions governing the application of import duties this does not include the costs of transport from the place of shipment abroad to the Canadian border. In short, under a manufacturers sales tax an equal-rate compensatory import tax discriminates in favor of goods imported by nonregistered traders. Uplifts may correct for this, but equal treatment is not possible.

One of the few important advantages of the wholesale sales tax, which is levied in Australia and Finland, over a manufacturers sales tax is that it offers more equal treatment of domestically produced goods in relation

to imports because selling and promotion expenses incurred after importation are also included in taxable value.[12] Still, problems and nonneutral treatment occur with respect to the importation of fully manufactured goods by nonlicensed traders such as retailers and consumers. In valuing such goods for sales tax purposes at the import stage, the domestic wholesale margin must be taken into account. Australia makes the adjustment by adding 15 percent to the duty-paid value before calculating sales tax liability. Although such rough adjustment procedures are inevitable, they remain highly arbitrary (and excessive). Again, imported goods are not treated on a par with domestic goods. Generally, no such discrimination occurs on the export side of the ledger, since exporters do not normally pay tax.

The compensatory import tax is seldom payable under the retail sales tax, which is widely used by subordinate governments in the United States and Canada, because the tax is inherently destination based. Consumers and unregistered small traders are liable to tax at the import stage, but in most cases the personal exemption, which is usually applicable for import as well as sales tax purposes, would be large enough so that the importer would not incur sales tax. Few if any infringements of the neutrality criteria occur. Since exporters do not pay tax, an element of undercompensation may arise in their case if the tax on producer goods, such as office machines purchased from retailers, cannot be rebated.

On the criterion of neutrality, the value added tax adopted by EC member states is even more precise in fully freeing exports from tax and in levying an equivalent compensatory tax on imports. Since the tax has to be explicitly stated on invoices at each stage, including the export stage, the amount of tax paid at previous stages and therefore to be rebated can be reliably ascertained. Similarly, the value added tax imposes an equivalent compensatory tax on imports even if import values are understated because any underpayment is automatically caught and corrected at the following stage. The only nonneutral aspect is that under conventional procedures the value added tax at the import stage is payable as if it were an import duty—that is, immediately, rather than, say, the following month, as would be the case for domestically traded goods. The import tax is creditable by the purchaser, but unlike the situation with domestic transactions the importer forgoes the interest on the prepaid tax until he receives that tax back from his customer.

A point worth noting is that with all sales taxes an element of undercompensation may arise from so-called *taxes occultes*—"hidden taxes" paid on specific goods and services used in the production, transport, and distribution of goods. These may include taxes on auxiliary materials such as energy, fuel, and lubricants; on durable capital equipment such as vehicles; and on services such as transport. Undercompensation may occur if such goods and services are subject to separate excises that are not rebated on exportation or accounted for on importation. It will readily be seen that by incorporating such excises in a value added tax that covers all stages of production and distribution, full credit can be ensured; that is, undercompensation does not occur. Of course, if the taxes represent benefit charges—that is, if they are proxies for the cost of roads and other services provided by the government—no credit should be allowed because the taxes reduce production costs. Such taxes should take the form of (noncreditable) excises.

In summary, only the retail sales tax and the value added tax are inherently suitable for ensuring neutral treatment of internationally traded goods in relation to domestically produced goods. The retail sales tax is perhaps somewhat more neutral to the extent that the import tax does not have to be prepaid, but the value added tax is more comprehensive in freeing producers goods from tax and thus reducing the likelihood of undercompensation.

The European Community

The value added tax has been adopted by the EC as the preferred form of sales tax because it permits precise and expeditious border tax adjustments. (For an evaluation of the experiences of several European countries see Aaron 1981.) This satisfies the objective of the Treaty of Rome which prescribes that the sales tax should not distort competitive conditions among member states. Another objective of the EC, however, is to abolish border controls. Given the preference for the destination principle, the question is, How can border tax adjustments be effected without maintaining border controls and customs posts? Two proposals are discussed, following a brief account of the reasons for introducing a common value added tax.

Background to common value added tax. In calling for the creation of a common market in which distortions of competitive conditions would be prevented and the free movement of goods and services ensured, the founders of the EC recognized that these goals could not be achieved simply by eliminating import duties (a step that was completed on July 1, 1968) if sales taxes and excises were still allowed to function as trade barriers. There was ample reason for concern. In 1957, when the Treaty of Rome was signed, five of the six original member states were levying a "cascade" type of turnover tax—a form that, as indicated above, does not permit a reliable and unambiguous computation of border tax adjustments. Border tax adjustments were

at best estimates, and it was tempting to use them for protective purposes or to correct trade balances.

Germany provides a good example of the discrepancy between the estimated and the actual tax burden under a turnover tax (see Gerhard and Takamuki 1968). In 1967 the average tax rebate on exports was 2.9 percent of their value, whereas the prices of exports incorporated an estimated 3.5 percent of turnover tax. Similarly, the so-called equalization tax on imports averaged 4.6 percent, whereas the estimated turnover tax burden on related home-produced goods was 7.0 percent. Under the turnover tax, therefore, border tax adjustments resulted in an undercompensation of approximately 3 percent. In Belgium and the Netherlands, too, border tax adjustments under the existing cascade-type sales tax did not provide for full compensation, and the changeover to the value added tax therefore had a devaluation effect.

These were cases of undercompensation, but no doubt overcompensation was just as likely to occur sooner or later. Since the rebates and equalization taxes were estimated average percentages that differed from one product to another without equaling the actual effective rate of tax except by sheer coincidence, border tax adjustments under the turnover taxes could be compared with a highly arbitrary schedule of import duties and export subsidies. As described above, these adjustments do not happen under value added taxes that extend through the retail stage. Under this form of sales tax the export rebate, shown on purchase invoices, is exactly equal to the tax paid at previous stages of production and distribution, and the tax on imports and subsequent domestic transactions eventually always equals the statutory rate levied at the retail stage.

Although border tax adjustments under the value added tax put foreign and domestic goods on an equal tax footing, they do appear to require the maintenance of border controls. Such controls are contrary to the spirit of a common market that wishes to attain all the characteristics of a domestic market. Until recently, therefore, the Commission of the European Communities, supported by expert advice (Neumark Committee 1963), favored the eventual adoption of the origin principle. Intracommunity border controls would not be necessary, it was argued, if each member state confined the tax to the value added within its own jurisdiction. Because of the considerations discussed above, this point of view has now been abandoned in favor of retaining the destination principle. Present proposals are to eliminate border controls by shifting border tax adjustments to the books of accounts of taxable persons in other member states under either a deferred payment scheme or, preferably, a tax credit clearance system (Commission of the European Communities 1983).

Deferred payment scheme. The deferred payment scheme was pioneered in the Netherlands and has been in use there ever since the value added tax was introduced.[13] Under this approach there is no compensatory import tax to put foreign and domestic goods on an equal tax footing, and imported goods are not checked physically at the border. Instead, the credit mechanism of the value added tax is relied on to ensure that the first taxable person in the importing country implicitly pays the compensatory tax, since there is no offsetting credit. The method works so satisfactorily that nearly all of the compensatory import tax otherwise payable on goods in international as well as intracommunity trade is shifted inland. Furthermore, eligibility for the export rebate may be proved on the basis of documentary evidence (bills of lading, payments from abroad, and so on) rather than through physical clearance at the border. Exporters do not have to show a certificate or affidavit signed by the customs authorities (as proof that the goods have left the country) to qualify for a rebate.

Under the Dutch deferred payment scheme, therefore, customs clearance methods are set aside by incorporating the compensatory import tax in the domestic ambit of the value added tax. The scheme makes the recipient, not the importer of the goods, liable to tax. The recipient has to compute and report the compensatory import tax but may take credit for that tax in the same return. To illustrate, suppose a manufacturing firm imports goods worth f. 10,000 in a month in which its domestic sales are f. 50,000 and its domestic purchases are f. 30,000. At a value added tax rate of 19 percent, it has to declare taxable sales and imports totaling f. 60,000, on which f. 11,400 gross tax is due. At the same time, it is eligible for a tax credit of f. 7,600 (f. 5,700 on domestic purchases plus f. 1,900 on imports). The net tax liability is thus f. 3,800, which is exactly 19 percent of the firm's own value added of f. 20,000.

The return for the compensatory import tax has to be filed at the time the imported goods are received—at the latest, on the eighth day following the day of importation. The day of importation can be verified because truck drivers have to drop a copy of the exporter's invoice in a letter box at the border crossing. Similarly, the self-assessment procedure, which in theory is redundant, facilitates compliance control. In most cases the effect of the scheme is that the import tax is not paid until the underlying goods are resold by the firm that actually receives them. This arrangement avoids the need for a large number of export rebates in a country heavily engaged in transit trade.

Deferral is compulsory for nearly all registered taxpayers who import goods across the Belgian-Dutch border as well as for all taxpayers who import specified

goods, regardless of the port of entry, that by nature can be used only for taxable activities (in other words, not for personal consumption). Taxpayers who import other goods by sea or across the German-Dutch border may obtain a personal permit that enables them to make use of the deferred payment arrangements, provided that they are resident, import regularly, and meet certain bookkeeping requirements. Deferral is not permitted with respect to passenger cars and motorcycles (except by personal permit), goods imported through the postal service (unless a special permit is obtained), excisable goods (except banderolled tobacco products), and goods imported by individuals, exempt farmers and small businesses, and nonresident taxpayers without a permanent establishment in the Netherlands. Although nearly all imports are covered, the scheme is not so comprehensive as to make border controls completely redundant.

The principle of the deferred payment scheme was adopted in article 23 of the Sixth Directive of the Commission of the European Communities and was amplified in a draft program of the commission as the direction the EC should take initially in an attempt to abolish border controls for the value added tax. In 1982 the preamble of the Fourteenth Draft Directive cited experience showing that the scheme met the requirements of simplicity and effectiveness in combating fraud. The draft directive limited the scheme's application to intracommunity trade, to goods used for taxable (that is, nonexempt) activities, and to regular taxpayers. The scheme would be administered through a system of permits. Obviously, like the Dutch system, it is not so comprehensively designed as to eliminate all border controls.

Tax credit clearance system. Under the deferred payment scheme some vestiges of border controls remain in that documentation has to be provided at customs posts. Moreover, there is a break in the tax chain from foreign producer to domestic consumer. Exports are free of tax, and imports are not taxed until the first stage of inland production or distribution. The main advantage of the scheme is that border formalities and congestion are reduced to a minimum. Nevertheless, border controls are not completely abolished. By definition, such border controls do not exist in an economic union, which is the goal of the EC.

Another solution to the proper coordination of rate-differentiated value added taxes in the setting of an economic union would be to make registered businesses that sell to registered or nonregistered entities or consumers in another member state liable for tax at the rate prevailing in that other state. Thus, for example, over-the-counter sales above a specified monetary threshold would be taxable in the jurisdiction of the buyer's residence as evidenced by the mailing address or other identification. Similarly, goods shipped by a vendor in one member state to a vendee in another state would be taxable at the rate applicable in the jurisdiction of destination. Tax collections on out-of-state sales would be identified separately on the vendor's return and paid to the destination jurisdiction, possibly through some form of clearing mechanism. A significant drawback of this proposal is that it requires vendors to distinguish between resident and nonresident buyers—a task as difficult to perform and subject to as much abuse as the application of end-use exemptions. In essence, the vendor is held responsible for the honesty of the vendee's self-identification as an out-of-state buyer.

Probably the best way of coordinating value added taxes in the EC would be to shift border tax adjustments to books of account in other member states under a so-called tax credit clearance mechanism. Vendors of goods traded within the EC would pay the full value added tax in their jurisdiction of registration; export rebates would not be provided. But the first taxable person in an importing member state would receive a credit for the out-of-state value added tax charged on the goods imported. The importer would list that credit and those of other out-of-state suppliers separately on the return filed with the local value added tax office. Next, the importing state's value added tax administration would collate and tabulate out-of-state tax credits separately for each exporting state. Finally, the out-of-state tax credits would be presented for payment to the value added tax administrations of the exporting states. An EC-wide clearing mechanism could be set up to handle the various claims. Net balances would be payable by states that are net exporters.[14]

To illustrate this method of removing border controls, assume that exporting firm A in jurisdiction X is faced with a value added tax rate of 10 percent and importing firm B in jurisdiction Y with a rate of 20 percent. Furthermore, assume that A exports goods worth $200 to B and that these goods have been produced with inputs worth $150. Under conventional border tax adjustments A receives a rebate of $15 (10 percent of $150) from jurisdiction X; it pays no tax on its own value added of $50. Furthermore, B pays a compensatory import tax of $40 to jurisdiction Y. Now, under the proposed method, A pays $5 (10 percent of $200 minus a tax credit of $15) to its jurisdiction of registration. Thus, jurisdiction X receives $20 on the goods sold to B. Following importation, B, which is not liable for any compensatory import tax, claims a tax credit or refund of $20 against its gross tax when it next files a regular return in jurisdiction Y. In turn, Y presents a compensation claim for the same amount to X. All tax transactions balance out exactly because the value added tax administration in X receives from exporter A and from those X-country firms that preceded A $20 in tax, which it pays to Y, and Y in turn

extends a credit to importer B for the same amount. Exporter A receives $20 tax invoiced to B, which is reimbursed (through the credit just noted) by the value added tax administration of jurisdiction Y. Jurisdictions X and Y may be said to administer the destination principle jointly.

The tax credit clearance system brings in its train additional administrative obligations (which, it should be noted, can generally be met when it suits the taxpayer), but it would eliminate the costs of red tape and delays at the border. These costs, in all, are estimated at 5.7 percent of the value of intracommunity trade (Commission of the European Communities 1975). There would be no valuation problems at the time of export because generally the exporter's selling price would be taken as the value for tax. Undervaluation would result in a lower tax credit in the importing jurisdiction as well as a lower tax credit clearance payment by the exporting jurisdiction. An objection might be that the exporter's payment risk is increased by the amount of the value added tax for which he invoices his client. A zero-rate notification procedure might be added to the system to meet that problem. On his request the exporter would receive a rebate, the importer would pay tax as though subject to a deferred payment scheme, and the exporting jurisdiction would not have to compensate the importing jurisdiction's tax administration. In view of the administrative ramifications, however, zero-rate notifications should be used sparingly, if at all.

This approach has to be supplemented by rules that exempt or regulate intracommunity imports by nontaxable persons such as individuals and exempt organizations and institutions, including governments. A good case can be made for the complete elimination of compensatory import taxes on internally traded goods bought by individuals. Until recently, individuals in the EC were charged the full value added tax of their country of residence on goods imported from other member states if the total value was greater than the personal exemption, even though value added tax had already been paid in the country of origin. In 1982, however, the European Court of Justice issued a prejudicial ruling (case 15/81) that an importing country could impose its compensatory import tax but that the residual of the value added tax paid in the exporting member state and still incorporated in the value of the product had to be credited against the import tax.[15] Here it is proposed that for over-the-counter sales only the value added tax of the country of the vendor should be payable; that is, for consumer purchases the tax would be applied on the basis of the origin principle. To minimize abuse, mail order firms should be obliged to compute and remit the tax of the customer's member state or, alternatively, the difference between the tax rates of the states of destination and origin.

For current consumer goods the proposed procedure would mean little more than formalizing the existing situation: individual exemptions are so high and cross-border shopping is so difficult to police that nearly all out-of-state purchases are taxed on the basis of origin. For expensive durable consumer goods such as cars and yachts, which attract higher rates of value added tax in some countries, existing registration requirements in residence countries might be used to collect the additional import tax from consumers in the form of an extra registration duty or purchase tax. Of course, durables imported through dealers would be taxed in accordance with the tax credit clearance system. It seems advisable also to apply that system to governments and other exempt entities. The amounts of tax involved may be so large that the destination principle should continue to be applied.

Although value added tax rates do not have to be equalized in order to remove border controls, without question some alignment of the rate structures would facilitate a shift of border tax adjustments to books of account. Credits for foreign tax are easier to check if the coverage of a particular rate is uniform with respect to goods in intracommunity trade. Thus, agreement might be sought on a dual rate structure consisting of a reduced rate for agricultural and food products (simply defined as all items enumerated in the first twenty-one chapters of the Common Tariff Nomenclature) and for pharmaceutical and medical supplies and a standard rate for all other products and services. Although the issue need not block the implementation of the proposed schemes, increased rates might be abolished, since they primarily cover motor vehicles and excisable goods and any revenue loss can be recovered by increasing the rates of corresponding user charges and excises. But apart from these minor adjustments, each member state would remain free to set its own rates of value added tax.

United States

Historically, Canada and the United States, which have federal systems of government, have considered the retail sales tax the natural tax handle for provinces and states and, to a lesser degree, local governments.[16] Nine of Canada's ten provinces have this form of tax, as do forty-five of the fifty states of the United States, the District of Columbia, and about 7,000 local governments. In the United States, to which this analysis is confined, sales tax receipts average 31 percent of all state tax revenues. Rates range from 2.0 to 7.5 percent or, if local rates are taken into account, from 4.25 to 8.25 percent.

Interstate problems with retail sales taxes. The retail sales tax is ideal for states because it is almost in-

herently a destination-based tax. Interstate border tax adjustments, and hence border controls, are not required. Virtually all interstate trade is carried on in a tax-free area, since sales at retail are nearly always made within the boundaries of the state taxing jurisdiction. Exceptions arise, but until recently these have not affected the feasibility and efficacy of the various retail sales taxes. Use taxes, imposed "for the enjoyment of that which is being purchased," are levied on out-of-state vendors with an adequate "nexus," that is, a business location or other linkage (warehouses, service facilities, salesmen, and the like) in the state. Similarly, sales or use taxes on out-of-state automobile purchases can be effectively enforced by collecting the tax at the time of the mandatory registration of the vehicle in the state.

Because of lack of an audit trail or of possibilities for recovery, greater difficulties are encountered with the collection and enforcement of taxes on taxable out-of-state purchases by businesses and consumers through mail order sales, direct marketing sales, and border sales. The tax on taxable out-of-state business purchases must be collected through the usual (voluntary) process of monthly or quarterly returns. Mail order firms used to cooperate with destination states in collecting and remitting the tax due from their out-of-state clients. This was backed up by a network of mutual assistance agreements between states that made it possible to enforce tax collection from out-of-state firms through state courts.

In recent years a number of legal, technological, and sociological events have increasingly put this hitherto workable arrangement under pressure. First, in 1967, in *National Bellas Hess*, the U.S. Supreme Court ruled that a state could not require an out-of-state mail order vendor to collect and remit the state's sales or use tax on sales made to customers in that state if the vendor did not meet some minimum linkage or nexus test in the taxing state. Second, there has been a significant increase in interstate mail order sales through the use of toll-free long-distance telephone lines, computer networks, television ads, and specialty catalogs. Third, mail order firms are increasingly unwilling to provide assessment data to destination states to enable the latter to collect the use tax directly from customers. Fourth, growing revenue needs have induced many jurisdictions to increase their reliance on the retail sales tax by increasing tax rates; twenty-nine states and numerous local governments have done so since 1967.

In combination, these events have brought states' ability to collect sales and use taxes from out-of-state vendors increasingly into the limelight. A reliable estimate for 1983 puts consumer mail order purchases at $31 billion and direct business purchases at $28 billion (Ulbrich 1985). Potentially taxable interstate sales in 1983 thus totaled about $60 billion; assuming average annual growth rates of 8–12 percent, the total for 1985 would be $70 billion. On the basis of these figures it is estimated that states lose about $1 billion in sales tax revenue every year. This represents 1–2.5 percent of total sales tax revenues, a relatively small but growing figure. Moreover, in individual states the revenue loss may be as high as 5 percent of total sales tax receipts. The potential for problems with evasion and avoidance may be much more serious.

Toward more effective coordination. In considering various solutions to the problem of coordination, equity, neutrality, and administrative arguments again have to be taken into account. Destination states take the position that the retail sales tax base is theirs because their residents bear consumption taxes. These states regard as spurious the argument that out-of-state vendors do not benefit from the use that is made of the revenue collected on their products; after all, destination states put their markets at the vendors' disposal and are entitled to tax the benefits thus conferred. In the past destination states have been willing to concede a tax credit to buyers of out-of-state products at the rate levied in the origin state. This ensured the continued cooperation of the vendor's state and, in contrast to double taxation, promoted locational neutrality. Destination states are willing to consider a continuation of this origin-backup solution if their ability to reach out-of-state purchases is not impaired.

Destination states are also concerned about the effects of out-of-state purchases on the sales and profitability of both in-state firms and out-of-state businesses with adequate nexus. Tax-related price differentials can be as high as 8.25 percent, the combined state and local tax rate in New York City. Of course, actual effects depend on cross-state price elasticities of demand, which are high for identical products but may be low for products that are complementary to services provided locally. Estimates for such price elasticities range from 0.35 to 0.87, meaning that a price elasticity of 0.5 and a tax difference of four percentage points should lead to a 2 percent loss in sales volume (Fox and Campbell 1984). In a study of buying patterns in metropolitan Washington, D.C., Fisher (1980) estimated that a one percentage point rise in the local tax rate could lower sales by about 6 percent. Whatever the exact effect, these figures indicate that consumers are responsive to tax-induced price differentials, especially for expensive items such as television sets, washing machines, and other consumer durables.

Out-of-state vendors, for their part, point to the costs they incur in complying with the enormous diversity of tax rates and exemptions for products as well as designated purchasers (local government agencies, charitable organizations, and so on) in forty-five states and nearly 7,000 local taxing jurisdictions. The Willis Re-

port (United States, House of Representatives 1965), however, found no significant differences in compliance costs for interstate sellers compared with in-state firms. Moreover, the higher cost of multistate filings fell mainly on larger firms whose costs were lower than those of median firms. Since the mid-1960s, when the study was undertaken, technological progress has probably reduced the costs of staying current with sales tax rates and exemptions. Small firms might be an exception, but a minimum amount below which out-of-state sales would not be taxable would alleviate undue hardships to them. Another possibility is uniform combined state-local rates, which would effectively reduce to forty-six the number of rates of which a vendor must be cognizant. Finally, twenty-seven states already provide a rebate for compliance costs in the form of either a breakage or a percentage allowance. Any remaining compliance cost differentials should be negligible.

It is probably impossible to find a solution that will satisfy all interested parties—state tax administrators, mail order firms, consumers, and competing in-state businesses. After a careful examination of the arguments, Ulbrich (1985) proposed four alternative solutions: (1) affirm the status quo and thereby accept the existing infringements on interjurisdictional equity and locational neutrality; (2) initiate state litigation to overturn or modify the nexus standards established in *National Bellas Hess* and return to multistate cooperative agreements to collect and enforce the use tax on interstate mail order sales; (3) initiate federal legislation requiring mail order firms to collect and remit the use tax of the destination state if the firm engages in regular or systematic solicitation of sales (compliance costs might then be reduced by adopting a minimum sales threshold and single-state rates); or (4) introduce a direct federal tax on interstate mail order sales and distribute revenues among states according to some proxy for mail order purchases.

The potential for effective enforcement of these solutions increases as one moves from (1) to (4). So does the intrusion of the federal government into what states have hitherto considered their sovereign domain. Given this partly political context, the arguments are difficult to weigh properly. As in the EC it appears that the destination principle should be the ruling criterion for the interjurisdictional division of the tax base. It might be backed up by the origin principle for out-of-state consumer purchases, meaning that destination states should concede this part of the tax base to origin states to ensure their cooperation in collecting and remitting to the destination state the difference between the destination rate and the origin rate. Such origin taxation might take the form of a credit to purchasers for tax paid out-of-state. Arguments supporting an equitable treatment of both in-state and out-of-state-sellers appear to outweigh arguments for a dogmatic adherence to the destination principle. As long as locational neutrality is maintained, out-of-state sales and purchases are more likely to balance each other. This implies that a solution that combines both origin and destination principles should not make any difference to the division of the tax base.

Concluding Comments

There are remarkable similarities between the coordination of state retail taxes in a federal system of government and the coordination of value added taxes in a common market that wishes to banish border controls. In this respect the EC has much to learn from the U.S. experience. At first sight it would appear that interjurisdictional coordination without border controls, if desired, may be easier to achieve in the EC because the tax base of the various value added taxes is more comprehensive and uniform than for the U.S. retail sales taxes. Coordination is more urgent for the EC because all preretail stages are taxable, and it is imperative that domestic prior-stage taxes be creditable in subsequent stages abroad. The pros and cons are best considered according to the types of transaction that can take place in an interjurisdictional context: in-state sales to businesses or consumers, sales by in-state firms to out-of-state businesses or consumers, and sales by out-of-state firms to in-state businesses or consumers.

No serious conceptual or practical problems arise under either form of sales tax with respect to in-state sales. Under retail sales taxes the full amount of tax is collected by vendors selling to consumers, which include businesses buying consumer goods such as food and drink or services such as lodging. Business-to-business sales of producer goods are made in a tax-free area that includes all preretail firms that do not conduct business at retail. Difficulties are encountered when the use that is made of the taxable commodity—say, a typewriter or computer—determines whether that commodity is taxable or exempt. End-use exemptions are notoriously difficult to police because they depend on the purchaser's declaration of intent as verified by the vendor. These issues are less problematic under value added taxes because all transactions attract tax, and tax credits for consumer goods used in the course of business are simply denied at the user's level. Moreover, a value added tax is collected piecemeal throughout the entire production and distribution process, leaving an audit trail that makes evasion more difficult or at least less likely to succeed for the full amount of the tax.

Sales by in-state firms to out-of-state businesses or consumers, which are the mirror image of sales by out-of-state firms to in-state businesses or consumers, will not be considered here; presumably some form of

interjurisdictional cooperation would be established to achieve reciprocal treatment. Sales by out-of-state firms to in-state businesses or consumers may take place through direct marketing activities, mail order sales, or border sales, and the goods sold may be either consumer or producer goods. Under a retail tax, sales from direct marketing activities or through mail order houses must be taxed at the level of in-state businesses or collected from consumers in the form of use taxes. A tax credit might be allowed for the out-of-state tax, and the out-of-state administration might remit that tax to the destination state. Presumably such an arrangement would satisfy interjurisdictional equity; it would not be required for locational neutrality. Over-the-counter sales would have to be taxed on an origin basis, except for consumer durables such as automobiles that must be registered for tax and other purposes and therefore can be fully taxed on a destination basis.

Although ad hoc solutions are tolerable for retail sales taxes, the treatment of interjurisdictional sales under value added taxes requires a more structured approach because prior-stage taxes must be taken into account. Consumer sales by out-of-state mail order firms or through direct marketing can be fully taxed on a destination basis, but the origin state's cooperation would be required for audit and enforcement purposes. Conceivably, only the revenue corresponding to the rate differential might be paid to the destination state. An exception might be made for designated durable consumer goods and government purchases. The tax on interstate business-to-business sales is best treated under a multijurisdictional tax credit clearance system which, unlike the deferred payment scheme, would leave the tax chain intact. Border sales of consumer goods would have to be treated according to the origin principle to avoid use taxes, which are extremely difficult to police. As under retail sales taxes, concessional value added tax regimes might be permitted in populous areas that straddle interstate borders.

Finally, a tax credit clearance system should also be feasible in federal systems, such as the United States and Canada, if it were decided to replace the retail sales taxes with rate-differentiated value added taxes. Border controls between subordinate units of government are prohibited in a federal system of government, but, as evidenced by U.S. practices, border tax adjustments are allowed. Similarly, the EC might decide to substitute the retail sales tax for the value added tax, but placing the full impact of a high-rate sales tax at a single stage would probably exacerbate compliance problems. For the EC, therefore, the solution to abolishing border controls lies in the adoption of the deferred payment scheme or, preferably, the tax credit clearance system. Both methods ensure locational neutrality. This is not true of the conventional import sales tax method, which discriminates against imports because the tax is payable immediately rather than later, when the regular return is filed.

Notes

The author is grateful to Carl Shoup for his perceptive comments on an earlier draft. Peggy Musgrave's contribution (1986) on the interjurisdictional coordination of taxes on capital income has also been helpful in structuring this paper.

1. The OECD (1985, p. 45) defines sales taxes as taxes levied on the production, lease, transfer, delivery, or sales of a wide range of goods and on the rendering of a wide range of services, irrespective of whether they are domestically produced or imported and irrespective of the stages of production and distribution at which they are levied. For more on the definition and classification of sales taxes see Cnossen (1977, ch. 2).

2. This and the following subsections have benefited from earlier work done in collaboration with Carl Shoup; see Cnossen and Shoup (1987).

3. See Shoup (1969, p. 209) and the literature cited there. The analysis in this section has greatly benefited from Hufbauer (1977) and Johnson and Krauss (1970). For a general treatment see also Musgrave and Musgrave (1984, ch. 36).

4. Of course, even under a general destination-based sales tax excess burden would arise between consumers at home who are taxed and consumers abroad who are exempt. See Shoup (1969, p. 221).

5. See Due and Friedlaender (1973, p. 519), Musgrave and Musgrave (1984, p. 769), and Shoup (1969, p. 644). For an analysis in the U.S. setting see also McLure (1980). In this literature the idea is that the EC should use the origin principle for its internal trade but maintain the destination principle in its trade with third countries. Hence this system is termed the restricted origin principle. Cnossen (1983a) argues that this system is irrelevant because border controls are not necessary for effecting border tax adjustments under the destination principle.

6. Messere (1979, p. 489) and Shoup (1969, p. 264) have pointed out that the origin principle appears incompatible with the credit method of computing the tax liability.

7. I am grateful to Richard Musgrave for providing this paragraph in a comment on the draft.

8. The GATT was drawn up in the 1940s and represents a codification of practices existing at that time. Previously, border tax adjustments were normally provided for in bilateral trade agreements, and the main provisions of the GATT are based on such agreements concluded by the United States.

9. For a review of these and other articles of the GATT see Gerhard and Takamuki (1968). Broadly, the debate on border tax adjustments has concerned the incidence of indirect taxes versus direct taxes (for which adjustments are not allowed) and the assumptions about the use that is made of tax revenues.

10. For a highly useful analysis of the equity and economic effects of the turnover tax as well as its administrative ramifications see Shoup (1969).

11. For an expert analysis of the history and shortcomings of the Canadian manufacturers sales tax with many references to the literature see Gillis (1985).

12. Until recently the wholesale tax was also levied in New Zealand and Portugal, but in these countries it has been replaced by the value added tax. For an assessment of wholesale taxes in Austrasasia see Due (1985).

13. This section and the following draw heavily on Cnossen (1983a, pp. 153–57).

14. For an early brief reference to this exciting proposal for doing away with border controls see Sullivan (1967, p. 99). For a recent technical exposition see Simons (1981, pp. 375–82).

15. This case, known as the Dutch Yacht case, reached its finale on May 21, 1985 (case 47/84), when the Court of Justice ruled that the credit for foreign value added tax incorportated in imported used goods should be calculated on the goods' value net of such tax.

16. This section draws heavily on Ulbrich (1985). The record and analysis of U.S. retail sales taxes owes much to John F. Due. For a concise and succinct treatment see Due (1982).

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VAT Treatment of Farmers and Small Firms

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In the developing countries, and to some extent in many industrial ones as well, an inherent problem with any form of sales tax is that of controlling relatively small firms; this problem is also encountered with income taxes. Retailing in most developing countries is characterized by large numbers of small firms, such as the market stalls of Kumasi, the sidewalk sellers of Lagos, the endless small shops of the Indian cities, and the tiny establishments of Latin America. Even in countries that have some large retail establishments, a high percentage of retailing is done on a small scale. Likewise the manufacturing sectors of most developing countries are characterized by numerous craft producers, some working entirely by hand, some with simple power tools; the large factory is the exception. At the wholesale level there are numerous relatively small firms that sell to retailers and are themselves often retailers as well, even in countries in which a few large importer-distributors control most of the primary wholesale trade, as in Jamaica and other West Indies islands.

The Need for Special Treatment of Farmers and Small Firms

The small size of firms alone would not prevent effective operation of the taxes; there are many relatively small firms in the most industrial countries. But in the developing countries these firms are typically operated as a household activity, often by uneducated persons and with few or no records. Especially in small towns and rural areas, many stores consist of nothing more than a room in a person's house, store keeping is a part-time activity, and records are nonexistent. Most proprietors are not subject to income taxes because their incomes are too low, but they are potentially subject to sales taxes, including value added taxes (VATs).

Quite apart from the commercial sector, small enterprises are almost universal in agriculture. Although there may be a few large plantations and state farms, and in some countries farmers moving toward commercial operations, most agricultural production is carried on by small-scale farmers. In the least developed countries they often operate on a semisubsistence level but produce a substantial portion of the total agricultural output reaching the market. These small farmers are not likely to be subject to income tax, but they can well be liable for collection and payment of some forms of sales tax.

The tax measures relating to small firms seek to avoid, lessen, or offset the high compliance cost of the firms and to minimize the administrative cost. To force the firms to keep adequate records would be virtually impossible, and any attempt to do so and to get them to file returns would create severe hostility and, if carried out, would burden them all out of proportion to the revenue involved. Furthermore, most small firms must pay their suppliers sooner, and are able to collect from their customers after a longer delay, than the larger firms. Craft producers and stores also have an extremely high rate of turnover, with existing enterprises failing and new ones being formed constantly.

On the administrative side, too, an attempt to enforce correct payment from these small firms would result in cost all out of proportion to the revenue involved and would produce a phenomenally high cost-

benefit ratio. Quite apart from controlling delinquency and audit, the mere routine of issuing registration certificates, distributing return forms, recording payments, and ascertaining delinquency would be very expensive in relation to the amount of money collected.

This chapter reviews the experience of countries in the European Economic Community (EEC) and elsewhere in treating small firms and farmers and then considers appropriate policy in developing countries.

The Treatment of Small Firms under European Value Added Taxes

All of the European countries using the value added tax (VAT) have introduced features relating to small firms, as authorized for EEC members by Article 14 of the Second Directive: "Each state is to have the option . . . to apply to small enterprises, for which subjection to the normal system of the tax on value added would encounter difficulties, the particular system best adapted to national requirements and possibilities." Article 24 of the Sixth Directive allows the member countries to exempt firms with annual turnover under 5,000 European units of account (about US$7,000). Higher figures used before the directive could be continued, but future increases are limited to the rate of inflation. The article also allows the use of simplified procedures for small nonexempt firms, "provided they do not reduce tax liability." The intent was that these special rules be temporary.

Exemption of Firms with Sales below a Specified Figure

Seven EEC countries exempt small firms completely from registering, collecting taxes, and filing returns. For comparison the exemptions are converted to U.S. dollars at January 1986 exchange rates.

Federal Republic of Germany. Firms with total annual sales of DM20,000 or less (US$8,200) in the previous year and expected sales of less than DM100,000 in the current year are completely exempt; they do not register, collect tax, or file returns. There is some tendency for firms to split to avoid taxation.

Denmark. Firms with annual sales of less than DKr10,000 (US$1,100) are completely exempt.

United Kingdom. Exemption is granted to firms whose turnover is expected to be less than £20,000 (US$29,000) in the current year or whose taxable sales in the last quarter have not exceeded specified figures. The figure is indexed and changes annually.

Ireland. The exemption figure is £Ir25,000 (US$28,700) annual sales for sellers of commodities and £Ir12,000 (US$13,800) for suppliers of services. These and the U.K. figures are the highest in the EEC, and there is some pressure to raise them. There is almost no voluntary registration of small firms except for a few selling to registered firms.

Luxembourg. Firms, except in agriculture, with sales of less than LuxF200,000 (US$4,000) are exempt.

Sweden. Firms with annual taxable sales of less than SKr10,000 (US$1,300) have been exempt. This rule also applies to farmers. The figure is so low that only tiny establishments have been exempt. As of July 1, 1986 the figure rose to SKr30,000 (US$3,900). About 74,000 firms will thus be dropped from the roll, but this is still a very low figure.

Norway. Firms with annual sales of less than NKr12,000 (US$1,600) are exempt.[1]

In most countries, exempt firms may opt for regular tax treatment. In Norway, for example, few firms do so, but in Germany and the U.K. the number is substantial. In general, exempt firms must keep their sales invoices.

Exemption from Payment but Not from Registration

Under this system, all firms are registered, but firms with sales volume below a certain figure merely invoice forward to their customers the tax paid on their purchases.

France. As subsequently noted, a substantial range of firms receives special treatment. But exemption is confined to firms whose annual tax liability is less than F1,350 (US$176). These firms are registered and invoice tax on their purchases to their customers so that the latter may obtain credit for it against their tax liability. The exempt firms must file annual returns.

Netherlands. Firms need not pay when the tax is less than f.2,050 (US$738) a year. They invoice the tax to their customers, thus allowing the customers to take credit for the tax against their own tax liability.

Austria. Firms with sales of less than S40,000 (US$2,350) in the tax period are not required to file a return and pay VAT on their sales, but they receive no credit for tax on their purchases. The firm may, however, apply the tax on sales invoices to their customers, who then can obtain credit for it. Firms may opt for regular treatment for five-year periods.

Simplified Industrywide Schemes for Calculating Tax Paid on Purchases or Taxable Sales

Quite apart from exempting small firms, several countries have sought to simplify the tasks of the smaller firms subject to tax. In some instances calculation is based on industrywide markups, in others on the individual circumstances of each firm. These approaches may be used together with exemption or separately.

Federal Republic of Germany. Small firms may use a specified percentage of their sales (based on standard markups) to calculate the tax paid on purchases. Only firms with sales less than DM100,000 (US$41,000) during the year are eligible, and certain primarily financial activities are excluded. These firms do not have to keep records of purchases or of the tax on them.

Italy. As is characteristic of the Italian tax system, the "simplified" system is complex. For determining the tax paid on purchases, small firms may apply a specified percentage to sales figures to calculate their purchases and thus the tax paid on purchases: 50 percent for hotels, transport, restaurants, and the like; 70 percent for retailers; 25 percent for commercial intermediaries; and 20 percent for artists and other professions. In general, firms with sales less than Lit6 million (US$3,600) are eligible.

Belgium. Smaller firms are allowed to calculate taxable sales on the basis of their purchases—the reverse of the German and Italian systems.

Simplified Calculation of the Tax Liability of Individual Firms on a Forfait Basis

In five countries provision is made for determining the tax due by each firm on a *forfait* basis for certain types of activities, that is, by negotiation between the firm and the administration, rather than by actual calculation of tax due on sales and tax paid on purchases.

France. In France, which has no provision for use of a standard markup system for calculating tax due, tax is determined in a simplified way for firms with annual sales of goods and hotel services less than F500,000; of other services, 150,000; and for the professions, 175,000. As noted above, the firms do not pay tax if the amount thus determined is less than F1,350.

Belgium. The administration determines the tax on an individual basis when the standard markup system cannot be used.

Italy and Ireland. Simplifying rules are provided for small firms subject to more than one rate.

Reduced Tax Liability of Small Firms to Compensate for the Greater Cost of Compliance

Several countries reduce the burden of tax on small businesses that are not exempted in order to offset the higher cost of compliance as a percentage of sales.

Luxembourg. Firms with annual sales between LuxF200,000 (US$4,000) and LuxF1,000,000 (US$20,000) may reduce their tax liability by 1 percent of the difference between LuxF1 million and their actual sales. Presumably they collect the full amount from their customers.

Federal Republic of Germany. Firms that have sales of less than DM60,000 (US$24,600) and that do not opt for exemption if eligible may reduce their tax liability by 80 percent if their sales are less than DM20,500 (US$4,050); if sales are greater than that, the 80 percent figure is reduced by one percentage point for each tranche of DM500. These firms are registered, collect VAT from their customers at the regular rate, and receive credit for tax paid on inputs.

France. Firms with *tax* liability between F1,350 (US$175) and F5,400 (US$702) have their tax liability partially reduced. Partial relief is also provided to firms in the *artisanat* group, for which labor constitutes more than 35 percent of sales, when the tax liability is between F1,350 and F20,000 (US$2,600).

Netherlands. Tax liability is partially reduced for firms with annual sales between f.2,050 (US$738) and f.150 (US$1,494).

Austria. Firms with sales between S40,000 and S150,000 in the tax period are subject to regular tax treatment, but their tax liability is reduced 20 percent if sales are less than S50,000, 15 percent if sales are from S50,000 to S100,000, and 10 percent if sales are from S100,000 to S150,000. The deduction is made from the net VAT due.

Variable Payment Periods

In some countries small firms may use returns and payment periods that are longer than those required of larger firms.

Equalization Tax

To lessen the competitive advantages that small firms gain from preferential treatment, Belgium applies

an equalization tax to sales to the exempt firms. The tax is applied by suppliers of the exempt firm in addition to the regular VAT on the sales.

This system applies only to certain sectors of retailing and only when the sales of retailers are less than BF4.5 million (US$90,000) for food sellers and BF2.5 million (US$50,000) for others. Small retailers, however, may opt for taxation in the normal fashion.

Extent of Coverage of the Exemptions and Special Treatment of Small Firms

In most countries it is impossible to know exactly how many firms do not have to register, since no records are kept of the exempt firms. In the United Kingdom an estimated 1 million undertakings do not have to register, compared with the 1,459,000 firms that did register in 1985. In Ireland some 9,000 firms are not registered, while 87,000 are, but the 9,000 figure probably does not include all of the unregistered firms. In Luxembourg only 550 firms are known to be exempt from registration, but 11 percent of the firms are eligible for tax reduction. In France, where all undertakings are registered, out of the 2.17 million total registration in 1984, 66,000 (3 percent) are completely exempt, but they account for only 0.03 percent of total potential tax revenue. Some 435,000 (18 percent) of the total are eligible for the special artisanat treatment—mainly small service and repair shops. In total, 724,000 firms receive forfait or exempt treatment, and 760,000 are subject to simplified calculation. Thus 759,000 are subjected to the regular tax treatment; of these about 15 percent are voluntarily subject (Ministere de l'Economie et des Finances 1986a). In the Netherlands, out of 400,000 registrants, 28,000 (7 percent) are exempt and 75,000 (18 percent) are eligible for rate relief. In Belgium, for which figures are incomplete, some 14,000 small retailers may have the equalization tax applied to their purchases.

Relative Costs of Compliance by Small Firms

A significant issue is the relative cost of compliance for small firms in relation to that for large ones. Such information is rarely available, and the accuracy is always questionable. The aim is to arrive at the additional expenses for which the collection and remittance of tax is responsible, and thus no element of overhead should be included. Significant information is available only for the U.K. Several studies conclude that the relative compliance costs are far greater as a percentage of taxable sales for small firms than for large ones, about thirty times as great for firms with sales of less than L20,000 compared with those with sales of more than L1 million. The overall compliance cost in 1977–78 was estimated to be 9 percent of tax revenue, and ranged from 12.3 percent for the firms with less than L40,000 to 0.4 percent for those with more than L1 million (Sanford 1984).

Changes since 1978–79, particularly the increase in the tax rate, however, have reduced the cost of compliance materially. In 1984–85, with a standard rate of 15 percent, the compliance cost was estimated to be 5 percent, or 2.3 percent if the cash flow gain is considered (Sanford and Godwin, this volume).

Summary of European Experience

Thus all European countries using the VAT provide some special treatment of small firms, and most countries report few problems arising from the provisions relating to small firms. In Great Britain, however, there is constant pressure to raise the exemption figure, which is already at the maximum allowed by the EEC, although not all small firms agree.

It is difficult to obtain much information on the success or inadequacies of these systems, but they appear to operate without much complaint. Outright exemption is the simplest system but creates the problem of breaking the chain; the attempt of two countries to eliminate this effect by allowing the small firms to invoice the tax paid on their purchases lessens the effectiveness of the system in mitigating the problems of the small firms. Allowing small firms to simplify the calculation of the tax has merit but introduces an arbitrary element into the operation of the tax, since actual markups of most firms are not identical with the standard markups provided. Forfait assessment simplifies the tasks of the firms but is certain to deviate from the appropriate tax liability in most instances and is an invitation to corruption. Similarly, features that reduce the tax liability on the small firms, but not the amount they invoice to their customers, roughly compensate only for the higher compliance cost. Allowing small firms to file and pay over longer periods is simple and alleviates the burden on these firms.

The Tax Treatment of Farmers in Europe

The tax treatment of farmers differs somewhat from that of small firms.

Alternatives

Several alternative ways of taxing farmers are possible.

1. Treat farms as any other business, and require farmers to register and apply tax to their sales, so that they will receive credit for tax paid on their inputs.

This approach is clearly difficult, however, and in most developing countries is operationally impossible.

2. Exempt all farmers from having to register and apply tax. This is the simplest alternative from a compliance and administrative standpoint, but it results in some multiple taxation; tax applies to various purchased farm inputs, for which subsequent purchasers cannot take credit.

3. Apply the same rule to farmers as to other small businesses: exempt those with sales less than a certain figure. This would greatly reduce the compliance and administrative problems compared with full taxation and would eliminate cascading of tax liability for the larger farms, but not for the smaller ones, because tax would apply to their inputs.

4. Exempt farmers and zero-rate sales to farmers. This eliminates the multiple taxation, but it requires identification of sales to farmers and opens the way to escape from tax of some sales for consumption. Farmers would not need to be registered in the usual way and file returns—but they would almost of necessity have to be given special registration numbers.

A variant is to zero-rate major farm inputs regardless of the purchaser, and thus hold multiple taxation to minor items. Some consumer purchases of the zero-rated goods would escape taxation.

5. Exempt both farmers and sales to farmers. This would lessen the multiple application of tax but not eliminate it, since inputs at early stages in the production of the farm products would bear tax, and it would distort distribution channels.

6. Tax sales to farmers, exempt farmers, and allow the purchasers of farm products to assume that the purchase price includes a specified percentage that reflects tax on farm inputs. This is relatively simple operationally—but the percentages specified are certain to be arbitrary.

7. Register farmers, apply tax to farm inputs, and require farmers to apply a specified rate lower than the basic rate to their sales. This rate is likewise arbitrary, and the approach requires control of all farmers.

8. Do not register small (or all) farmers, exempt their sales, and allow them to file for refund of tax paid on purchases. This approach avoids multiple taxation and registering but creates numerous refund claims.

European Experience

The EEC's Sixth Directive proposes the use of alternative 7: farmers would be registered, tax would apply to their inputs, and they would charge a single tax rate on their sales to all customers other than farmers. The flat rate tax charged by the farmers would be designed simply to pass forward the tax paid by the farmers on their inputs. Farmers must be registered, but they would not file returns or refund claims. This is the general system used by several of the ten member countries.

France. Farmers with annual sales of less than F300,000 (US$39,000) may opt out of the regular system; they do not apply tax to their sales but may file reimbursement claims with the government for tax paid on inputs. The reimbursement varies with the product; for example, 4.7 percent (of sales) for eggs and 2.9 percent for fruit and vegetables. Farmers with sales greater than F300,000 and those smaller farmers who wish to opt in are subject to a simplified system, known as RSA (Regime Specifique de l'Agriculture). They collect tax on their sales, file annual returns, pay quarterly, and are required to keep only simplified records of purchases and sales. A high percentage of farmers opt into the system, partly because of the relatively low reimbursements if they do not. The number of firms subject to the simplified system has risen steadily from 220,000 in 1971 to 440,000 in 1984, while the number not in RSA and receiving tax reimbursement has fallen from a high of 660,000 in 1976 to 480,000 in 1984 (Ministere de l'Economie et des Finances 1986b). A few small farmers selling only to individual consumers are not subject to the system and do not receive a reimbursement. Some large farms and cooperatives are subject to the regular tax requirements. The general conclusion is that the simplified system has worked well.

Federal Republic of Germany. Farmers are subject to the same general rules as other small firms. Firms not required to register may opt to do so; fewer than 1,500 have registered. Small farmers may retain a portion of the VAT owed to offset the loss of border compensations.[2] There are problems with larger farms splitting to avoid the ceiling and with nonfarm product receipts, the tax on which is not eligible for reduction. If registered, they charge 7 percent tax on their sales.

Italy. Since food is exempt, few farmers are involved with the tax; if they are, the same system is followed as in Germany.

Denmark. Farmers are registered, pay tax in the usual fashion, and file refund claims if their credit exceeds the tax on their sales. Out of 376,459 registered firms in 1985, 105,095 were farmers. Reporting periods for farmers are somewhat different from those for other firms. Few problems have arisen.

United Kingdom. Farmers must register and apply tax, and thus receive credit for tax paid on their inputs,

although they may opt out if all or most inputs are zero-rated and input tax credit always exceeds output tax. Most are registered and treated like other firms. Food is zero-rated in the U.K., so most farmers are not subject to tax on their sales. Farmers follow simplified record keeping rules and experience very low compliance costs.

Sweden and Norway. Farmers are treated in the same fashion as other taxpayers, and thus very small farms are exempted, with no system to pass through and no refund of tax paid on farm inputs. In Norway registered farmers file and pay on an annual basis.

Ireland. Since 1976 major farm inputs (fertilizer, feed, seed, and animal medicine) have been simply excluded (zero-rated) from tax to avoid registering farmers (to do so would double the number of registered firms) and minimize the amount of multiple tax application. Farmers can file for refund of the tax paid on inputs for farm buildings, land, drainage, and reclamation. Purchasers of farm products are allowed to assume that 2.2 percent of the purchase price is tax on farm inputs. Only about 1 percent of farmers opt for regular VAT treatment.

The system is generally accepted, although there are complaints of discrimination in favor of less intensive agriculture and of the failure to pass the 2.2 percent credit back to the farmers. Food is exempt in Ireland.

Netherlands. Farmers are not registered and bear tax on their inputs. Purchasers of farm products are permitted to obtain credit against their tax liability of 4.5 percent of the purchase price of farm products.

Austria. Farmers are subject to the same rules as other small businesses, but they do not file returns or pay tax because the tax paid on inputs is assumed to equal the 10 percent tax due on their sales. (The basic tax rate is 20 percent.) The 10 percent tax may be invoiced to customers. However, if their sales exceed S3,500,000 (US$205,886), or the assessed value of agriculture and forest net assets exceeds S900,000 (US$52,940), or profits exceed S195,000 (US$114,700), they must keep records and are taxable as other enterprises.

The Treatment of Small Firms and Farmers under VATs in Other Countries

Outside of Europe value added techniques are used most in Latin America and are being implemented in New Zealand, the francophone countries in Africa, the Republic of Korea, Indonesia, and the Philippines.[3] The taxes in Africa, Indonesia, and the Philippines are confined almost exclusively to the manufacturing sector.

Latin America

All Latin American countries except Venezuela and Paraguay now use the VAT. Details of the current treatment of farmers and small firms are not available for all the countries, but a general outline can be provided.

Brazil. The only country to use VATs at both the federal and state levels, Brazil confines the federal tax to the manufacturing sector, and thus farmers are not registered (Guerard 1973). There is no exemption of small firms, but for administrative reasons forfait assessment is applied to small firms. At the state level small firms are likewise not exempt, but the forfait approach is used commonly for them, particularly retailers with sales below a specified sum.

The states have altered their treatment of farmers during the years. Initially farmers were subject to tax and were required to pay tax before the produce could leave the farm. Strong opposition gradually led the states to change their policies. The states in the south exempted all sales by farmers of unprocessed farm produce. In other states the tax came to be collected from the firms purchasing from the farmer. Most basic foods are completely exempt.

The problem remained of the tax on farm inputs. The procedure followed—initially by some states and then by all following federal government action—is to exempt the primary farm inputs: fertilizer, feed, seed, pesticides, veterinary products, and agricultural machinery and tractors. These are exempt, not zero-rated. Thus the manufacturers are subject to tax on the ingredients. But many of these ingredients are themselves exempt, and thus little multiple taxation remains.

Argentina. Argentina was a pioneer in the use of the value added technique in Latin America (Reig 1975). Small firms are exempt. Because of inflation actual figures are not significant for any length of time; by 1984, however, the exemption was about US$85,000.

Suppliers of these firms are required to apply a special supplemental rate to the sales to these firms, which reflects tax that would apply to the small firms' margins. The small firms cannot invoice this tax to their customers, and thus there is some multiple application of tax if these small firms sell to registered firms—but most of their sales are to final consumers. The rule gives some problems to suppliers, who must distinguish between consumers and others; this is regarded as a significant source of evasion. Farmers are not registered. Some primary farm inputs such as seed and

livestock feed are exempt, and farm machinery, fertilizer, and herbicides are taxed at a reduced rate (5 percent). Purchasers of farm inputs are permitted to take as a tax credit an amount equal to 4 percent of the value of the purchase. Since 1986 a VAT reform project has been considered that would provide for fixed amounts of tax on small firms based on capital and the number of employees, with credit for tax paid on purchases.

Ecuador. In Ecuador farmers are specifically exempted, but goods used in agriculture are subject to tax, and thus multiple application of tax occurs. Small firms are subject to an alternative levy on actual or estimated gross receipts, but at a lower rate. The exemption from the regular levy is based on total capital invested of about $1,000 (1984), with the further requirement that there is no fixed place of business.

Uruguay. In Uruguay farmers are exempt from tax, and principal agricultural producers goods are likewise exempt (not zero-rated). Small firms may opt for treatment as regular taxpayers or be subject to a special alternative levy—a turnover tax on actual or estimated gross sales, as in Ecuador.

Peru. Small firms are completely exempt. The figure is adjusted from year to year in light of inflation, but in recent years has been about US$9,000. Firms with annual sales between this figure and about US$46,000 are provided with a simplified technique for calculating the tax. The system has proved to be complex to operate.

Bolivia. Firms with sales under a specified figure (about US$10,000) are exempted.

Mexico. There is extensive use of forfait assessment.

Colombia. Firms with sales of less than Col$3.6 million (about US$21,000) in 1983 *or* wealth under Col$10 million (about US$58,000) are exempt from the regular tax and are subject to a tax based on the previous year's sales, less deduction of the tax charged the firm by suppliers. The figure is adjusted annually for inflation. Many firms are believed to understate sales to stay below the demarcation line. In 1985, 60,000 firms were subject to the regular system and 85,000 to the simplified system (Perry, this volume).

Chile. Special treatment is provided for small firms operating at the final consumer stage, including retailers, artisans, and various service activities. Such firms are eligible if their average sales per month during the preceding twelve months are less than twenty tax value units. A table indicates the fixed monthly tax payment for each bracket of sales, from which is subtracted the tax paid on purchases. There are only five brackets of these quotas, and thus the tax only very roughly approximates the amount of tax that would be due under the regular system. The monthly tax value units are modified periodically by the tax administration on the basis of price level changes (Aninat 1986).

Francophone Africa

The former French colonies in Africa inherited the value added technique from France and continue to use it, although primarily at the manufacturing level. These levies resemble the early French VAT, which did not extend through retailing. The tax applies to imports, to manufacturing firms, and in a few countries to larger wholesale firms (the exact coverage varies somewhat by country). Thus the problem of enforcing the tax against small retailers does not arise. Farmers are exempt in all of these countries. Senegal taxes some agricultural producers goods; the Côte d'Ivoire, Madagascar, and Morocco exempt major ones.

The practices vary somewhat among small businesses. Forfait assessment for the small firms is usual, although Madagascar exempts very small firms entirely; Morocco exempts artisan producers and taxes other small firms by forfait; Senegal assesses small firms by forfait—but forfait taxpayers and retailers who are not registered may show tax paid on business purchases on their sales invoices, and thus firms purchasing from them can obtain credit for this tax to avoid cascading. In the Côte d'Ivoire firms selling goods had been subject to forfait if their sales were less than CFAF30 million (US$80,000) annually, CFAF15 million (US$40,000) for other activities. This was recognized to be a very inexact system, but it was regarded as a necessary evil (Koffi 1981). In 1983, however, the provision for forfait assessment was repealed, and apparently small firms are now exempt.

Republic of Korea

The Korean tax extends through the retail level, and thus the problem of small firms is particularly severe. Firms with VAT-inclusive annual turnover in excess of W24 million (about US$27,000 in 1986) are subject to a 2 percent turnover tax on gross sales (the basic tax rate is 13 percent). In 1984 there were 895,000 firms subject to this special treatment, 75 percent of the total taxpayers. These firms accounted for only 5 percent of total VAT revenue in 1983 (Han, this volume).

Indonesia

Under the new Indonesian VAT (limited to the manufacturing sector), two alternatives are provided for ex-

empting small firms. The first is annual sales of R24 million (about US$19,000). The alternative is capital of R10 million (about US$8,000). Firms must meet both requirements to be exempt.

The New Zealand VAT

New Zealand introduced a VAT in October 1986 (New Zealand Treasury 1984). Farmers are subject to the tax, except as excluded by the small firm rule noted below. They therefore are registered, pay tax on their sales, and receive credit for tax paid on their inputs. The government argues that New Zealand agriculture is typically large scale, that farmers do keep adequate records, and that small farms are excluded by the general exemption of small businesses. There is, however, substantial waste motion, as a large portion of all farm products is exported. Tax applies and then is refunded at export. It is estimated that about one-third of all registered firms are farmers. Firms with sales of less than NZ$24,000 (about US$12,000 at 1986 exchange rates) will be exempt.

The Treatment of Small Firms and Farmers under Sales Taxes Other than the VAT

A brief review of the experience under single-stage sales taxes is relevant.

Retail Sales Taxes

Retail sales taxes are rare outside of the United States, Canada, Iceland, South Africa, and Zimbabwe. The state and the provincial governments of these countries do not exempt small firms as such. Farmers are not officially exempt but are not registered as long as they do not make retail sales. The general rule for small entities is established through the definition of a vendor subject to registration for the tax; business establishments, no matter how small, that regularly sell at retail on a commercial basis must register. Almost always such persons have an established place of business, although a few, such as itinerant vendors or contractors, may not. By contrast, persons or groups not selling on a continuous basis and without an established place of business are not subject; sales to them are taxed. Examples include children selling Christmas cards, persons selling door-to-door as agents for distribution firms, or newsboys selling papers on the street. Tax is collected from their suppliers. Persons or groups holding occasional "garage" sales are not registered. The line is somewhat arbitrary, but in practice creates few problems. The state and provincial tax administrations have never thought it desirable to exclude small firms as such.

Farmers are not officially exempted, but in fact are not registered as long as they do not engage in regular retail activity. Most sales by farmers are made to wholesale dealers or processors and thus are not retail sales. Casual sales of produce by farmers to final consumers are normally not subject to tax. But if farmers sell taxable goods at retail on a regular commercial basis, such as through a farm stand, in a market, or through an egg route, in most jurisdictions they would be required to register. In some jurisdictions they would not have to register if they were selling only their own produce.

As in the states and provinces in the United States and Canada, Iceland does not exempt small firms. These jurisdictions have highly commercialized retail sectors, with very few illiterate sellers or ones without established places of business, and retailers are not generally hostile toward collection of tax. Thus the failure to exempt creates no particular problems.

Zimbabwe uses a retail sales tax with a relatively high rate (the basic figure in 1986 was 15 percent). Zimbabwe provides an exemption for all firms whose sales volume is less than Z$20,000 annually, about US$13,000 (Due 1983). The government has indicated that this system works well and without serious problems. Only a few firms are believed to understate sales to escape registration. There is an incentive to register since this allows the tax to be paid at the time of sale rather than at the time of purchase, thus providing use of the money between the date of purchase and the date payment to the government. Inflation has increased the number of firms subject to tax, but raising the exemption to Z$50,000 would eliminate an estimated 3,000 firms from the registration requirement with little adverse effect on revenue.

Paraguay uses a tax that applies in part to retailers. But the exemption figure is so high—G8.4 million for sellers of goods and G4.2 million for service establishments (about US$52,000 and US$26,000, respectively)—that most retailers are not registered and the tax applies to the sale by their suppliers. Only about 3 percent of all firms are registered, but they account for an estimated 75 percent of all sales (Birch and Due 1985).

Manufacturers Sales Taxes

All manufacturers sales taxes have some exemption of small firms, in most instances by volume of sales, and farmers in general are not subject to the taxes since they are not considered manufacturers. Without an exemption of small firms, very small artisan shops would be registered; even the most developed countries have numbers of such undertakings, and the manufacturers tax, unlike the retail tax, is geared to control relatively large firms. In Canada, which has used the manufacturers sales tax for more than sixty years, firms with gross

sales under Can$50,000 (about US$35,500 in 1986) are exempt from the registration requirement. Certain activities that might be defined to be manufacturing are specifically exempted, for example, preparing meals, tagging goods, cutting goods to length, producing concrete and concrete blocks, and repairing used goods. This exemption, which benefits small firms, has not caused serious difficulties in operation of the tax, except, especially in the jewelry industry, to increase the practice of custom manufacturing, in which the firm does not buy the materials, to keep the sales figure below Can$50,000.

The Philippines was one of the first countries to use the manufacturers sales tax and was the first to use value added features (confined to the manufacturing sector). The exemption figure is very low—P2,400 (about US$128). But there is good reason to believe that many firms above this figure are not in fact registered.

The African countries using the manufacturers sales tax all have exemptions of small firms, as, for example, KSh100,000 (about US$7,000) in Kenya and K10,000 (about US$6,000) in Zambia. In Guyana the figure is about US$4,000. In India the central excise taxes essentially constitute, in coverage, a manufacturers sales tax; artisan handicraft enterprises and all manufacturers with annual gross sales of Rs2 million (about US$164,000 in 1986) are exempted. This is a high figure by usual standards, and there are only about 60,000 registered firms—in a country with 800 million people and extensive manufacturing. Pakistan provides an exemption of PRs100,000 (about US$6,300) under its manufacturers sales tax.

Under the manufacturers sales tax in Thailand, firms with monthly sales less than B2,000 (US$80) are exempt; those with monthly sales between B2,000 and B10,000 are subject to a fixed sum tax (forfait).

From all that is known about this experience, these exemptions from a manufacturers sales tax have not caused serious difficulty. Pakistan has had problems with firms splitting to avoid registration and has thus changed its definition of exempt firms to meet this problem ("Pakistan Budget" 1982).

Alternative Ways to Define Exempt and Nonexempt Firms

There are several possible techniques for delineating the exempt firms, if exemption or special treatment is provided.[4]

Sales Volume

As described in the preceding sections, almost all of the systems for exempting small firms use the volume of sales (or the volume of tax liability) to determine exempt status. In effect sales volume is used as the proxy for the ability of the firms to comply and of the administration to control the firms. The selection of the figure varies widely, from ones as low as US$200 in the Philippines and the low figures in the Scandinavian countries to figures approaching or above US$100,000 in other countries. In some countries the approach based on volume of sales has functioned reasonably well, but there are inherent problems. First, it is difficult to ascertain the sales volumes of firms near the borderline—and it is not worthwhile to use too much administrative effort to do so. Some countries require firms with sales above a specified figure but still lower than the dividing line to register, even though they are not required to file returns—but this does not solve the problem. Second, sales volume is not a perfect measure of the ability of the firm to conform to the requirements of the tax. Third, the system gives firms an incentive to split into two or more entities to escape the requirement, as has been reported in Pakistan and other countries. Fourth, some provision is needed for firms whose sales fluctuate above and below the line. Once registered, they usually must remain registered unless their sales fall below a figure substantially lower than the basic registration requirement.

Capital Investment or Profit

Problems with the sales volume approach have led to experimentation with other measures. Ecuador, Pakistan, Indonesia, and Austria in part use a capital investment figure. This is a more stable one and perhaps in some instances is a better proxy for the ability to conform with the law, but it is likely to be more difficult to determine with small firms. One danger is that some large-volume firms with good record systems but little capital investment may be excluded unnecessarily. Only Austria uses net profit as an alternative criterion for delimiting firms subject to special treatment.

Mechanization in Production

With a tax limited to the manufacturing sector, an alternative to capital investment is exemption on the basis of the use of mechanization. Mechanization is defined as the operation of equipment by means other than manual or animal power. In the Sudan, for example, firms not using mechanical techniques and not operating workshops do not have to register for the tax. Jamaica in recent years has excluded handicraft producers from registration. The assumption is that firms using mechanical power and workshops are large enough to be controllable. Mechanization is easier to determine than sales or capital, and this is probably

the easiest rule to implement. The rule could, however, discourage some firms from modernizing, but it would not discourage them from hiring additional employees. It cannot be used as the sole criterion with taxes extending below the manufacturing sector.

Number of Employees

An alternative often suggested, but rarely used, is the number of employees. New Zealand under the wholesale tax used this approach to supplement its basic sales volume figure for handicraft firms; those with no employees and sales less than a specified figure did not have to register. The number of employees is easier to determine than sales or capital, but it contains a flaw so great as to warrant its rejection: it is likely to discourage firms from adding employees. This result is particularly serious in the typical developing country, which has much unemployment.

Exemption by Type of Industry

The Uganda manufacturers sales tax exempted manufacturers in industries in which craft production was particularly important and instead applied a higher tax rate to the materials, such as lumber, sold to these firms. Specifically, five industries were so exempted: shoes, furniture, clothing, bakery products, and paper products. The rates on the materials were either 50 or 100 percent greater than the basic sales tax rate. The rule applied to all firms regardless of size, but larger firms could register if they wished, buy materials tax-free, and pay the regular rate on their sales. The suppliers of these industries were generally either importers or larger manufacturers. The adjustment was rough, with the assumption that value added in manufacturing bore a fixed relation to the purchase price of materials, but it did solve the problem of the small craft producer.

This system is a simple approach to the problem, since it confines the taxes to industries with relatively large firms. But it is by no means ideal. There may be small, uncontrollable firms in other industries. The most serious problem is the choice of the relative rates; the goal is to provide the same percentage burden to the final sale price as the remainder of the levy. But margins often differ widely among firms in an industry, and thus an average figure will result in a lower-than-intended tax on some firms and a higher-than-intended tax on others, to the competitive disadvantage of the latter.

Exclusion by Administrative Action

Several countries have had no statutory exclusion of small firms; tax administrators—usually local district officers—make the decision based on visits to the establishment and ascertainment of whether the firm can collect and report tax correctly. Examples include Ghana and Indonesia under the pre-1985 manufacturers sales tax.

The danger of this approach is that it invites corruption and prevents any appeal by firms against administrative action. It can also be time-consuming if done properly.

Summary and Conclusions

An inherent problem with any sales tax is the appropriate treatment of small businesses and farmers (including related activities, such as small-scale commercial fishing).[5] Although the problem exists in all countries, it is particularly severe in a developing country, in which advanced education, adequate record keeping, and administrative competence may be lacking. There are two significant aspects: the difficulty and added cost of compliance with the requirements for keeping records and filing returns and the problem of effective control by the revenue agency. Not only are the enterprises more difficult to control, but revenue agencies are more limited in their ability to register the enterprises and handle their returns and delinquency.

Any system of delineating firms that must register, collect, and remit tax from those that are excluded creates problems. If the delineation is based on sales volume, there are always problems of determining the sales volumes near the borderline. With most sales taxes, firms have an incentive not to register and thus will underreport sales if they are near the borderline or split into more than one enterprise. How often this occurs is not known. But without question evasion through failing to register is significant. An economic consequence of exempting small firms is competitive disturbance, since unregistered firms have an artificial advantage. There is a chronic tendency to set the delineation line in monetary terms without adjustments for inflation, thus continuously broadening the coverage of the tax—an effect not without merit. The problems with farmers are the same as those with other small businesses; in addition farmers frequently sell in more or less perfectly competitive markets and cannot easily shift the burden of the tax.

With the tax credit form of the VAT the problems of exempting small firms are altered somewhat. Exemption of any group of enterprises breaks the tax credit circle. Unless special measures are taken, tax paid by the exempt firms on their inputs cannot be taken as a credit by the firms purchasing from them, and multiple application of tax results. Any measures taken to meet this problem are inevitably contrary to the gen-

eral principle of the VAT, tend to be arbitrary, and do not eliminate the multiple taxation uniformly and equitably. But this problem does offer one advantage: firms have an incentive to register if they sell to registered firms, since only then can they pass forward the full credit for tax paid on purchases.

All of the countries using VATs provide some system, formal or informal, to meet the problem of small firms. In Europe the most common, but not universal, technique is to exempt small firms, as defined, from having to register and collect tax. Farmers in most of the countries are not registered, but in a few those who purchase from farmers are permitted to assume that a portion of the purchase price represents tax paid on purchases, so they can receive credit for it. But these rules are not universal. The Scandinavian countries, for example, do not exempt farmers unless their sales are below the exemption figure for small firms. Some countries seek to compensate the registered firms for the added compliance cost by allowing them to retain a portion of what they collect; others seek to simplify compliance tasks. Still others allow small registered firms to file returns and pay on longer intervals, thus lessening the net cost to them. Several countries, particularly Belgium, France, and Italy, have developed very complex systems for meeting the problem of small firms, to the detriment of simple operation of the tax. To keep the tax credit circle from breaking, a few countries allow small unregistered firms to invoice to their customers the tax paid on their inputs—a measure that in part offsets the gains from exempting the small firms in the first place.

In northern Europe the policy is outright exemption of small firms—although the exemption figure is typically quite low. In France and southern Europe, Latin America, and the francophone countries of Africa, the policy draws a much higher dividing line and then applies forfait assessment to the firms excluded from the regular assessment, or, in a few countries, applies tax on a gross turnover basis or on an arbitrary amount based on estimated sales. The forfait is based on the external criteria of sales volume and negotiations between the revenue department and the firm. Such procedure, however, is contrary to accepted standards of tax assessment in northern Europe and most British Commonwealth countries.

There is no ideal solution to the problem of small firms and farmers. Yet some exemption must be provided. Sales volume is not an ideal basis for delineating taxable and nontaxable firms, but in many countries it appears to be the only feasible approach. As best can be determined, it does not cause insuperable problems, but it undoubtedly results in some evasion. Some countries clearly set the exemption figure too low. Use of power equipment is an alternative that has rarely been used but offers potential advantages. Determining eligibility for exemption by administrative action has the merit of flexibility and the use of different standards in various fields, but it is open to corruption and arbitrary action.

One of the most serious problems concerns passing through tax paid on inputs. As noted, to allow firms to show tax paid on their inputs on their sales invoices reduces the gain from exempting small firms and is hardly workable for small semisubsistence farmers. To allow those who purchase from unregistered firms to assume that a portion of the purchase price consists of tax paid on inputs by the exempted enterprise is highly arbitrary and inequitable. To allow the unregistered firms to apply for a refund of tax paid on inputs is unworkable for the typical small farmer or enterprise for the same reasons that it is not desirable to register these in the first place.

Thus, in conclusion, some system for excluding small enterprises is imperative. For farmers the optimal, but by no means perfect, solution appears to be to exempt them from the registration requirement and zero-rate the principal farm inputs—livestock feed, seed, fertilizer, pesticides, farm machinery, and equipment—and thus hold the tax on farm inputs to minor items. Farmers could be given the option to register if they wished and could demonstrate adequate accounts. As a necessary evil, other small firms must be exempted on the basis of the volume of sales or, alternatively, the use of power equipment. This would give them the option to register if they wished—which they would do only if they were making significant sales to registered firms or large purchases of capital equipment. Allowing small registered firms to file and pay over longer intervals greatly reduces the net cost to them. Since most very small firms do not sell to registered firms but only to final consumers, no cascading of tax results. The inevitable discrimination in favor of small firms remains, but is not likely to cause serious economic distortion, given the cost disadvantages of small firms.

Notes

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1. Norway is the only European country in which the VAT has been subject to substantial criticism, but change is unlikely. The tax is reviewed in Norway, Finans-og toll-

departementet, St. meld, nr 54 (1984–85) Om merverdiavgiftssystemet (Oslo: 1985).

2. From 1984 to 1991, farmers may retain 5 percent of the tax owed in 1984–88 and 3 percent in 1989–91. They charge the full rate of 13 percent to their customers but pay only 8 percent to the government (1984–88).

3. Experience with VATs in developing countries is summarized in Lent, Casanegra, and Guerard 1973.

4. This section is based in part on Due 1984.

5. A summary of alternatives is also presented in Casanegra, this volume.

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6

The VAT and Services

John A. Kay and Evan H. Davis

The value added tax (VAT) appears to permit a comprehensive approach to the taxation of goods and services. The principles underlying VAT apply equally to both, and it has only been with the advent of this method that the tax treatment of services has been unified with that of goods.

In this chapter we examine the problems that arise in imposing VAT on services. Two areas—housing and financial services—that present widely recognized special difficulties receive only cursory attention here, as they are dealt with in detail elsewhere in this book. Our concern is with other kinds of services and with the particular issues that they pose.

In "Should Services Be Taxed?" we consider the economic questions involved in determining whether services should be taxed and at what rate. We ask first, who consumes services? It is a common perception that the income elasticity of demand for services is high, both among households within a country and among countries. We confirm the validity of this observation, with some qualifications. We then ask, What are the welfare consequences of including services in the tax base or of excluding them? Are there arguments for a development strategy that would particularly favor (or discourage) the growth of the service sector? We conclude that it is unlikely that welfare considerations would lead to more favorable tax treatment of services than of other commodities and that there is support for a structure that does not discriminate among product areas.

In "Methods of Taxing Services" we examine in particular whether the objectives of a VAT could be served just as effectively by applying to services a wholesale sales tax on the production of a defined list of commodities or a retail sales tax at the place of final sale. We conclude that the use of VAT does have advantages, although these are readily exaggerated, and that it neither eliminates all sources of difficulty nor supplants specific taxes and ad hoc regimes for particular services.

"General Problems of Taxing Services" takes up some issues that are common to a number of services. Self-supply by consumers or by exempt traders is a more feasible alternative for many services than for manufactured goods, and hence the scope for productive inefficiency is greater. For manufactured goods the location of supply is generally evident, and the tax treatment of imports and exports is subject to clear and well-understood rules and principles. These issues are much more difficult when services are taxed, and the rules that are generally favored are different. Many services are publicly produced, financed, or purchased, which raises the question of whether the tax treatment of the public sector's own financial transactions gives proper incentives to efficiency.

In the final section, "Specific Areas," we examine retailing, health and education, postal systems, trade in second-hand goods, betting, insurance, travel agencies, advertising and communications, the rental and self-supply of durable goods, and the problems posed by housing and financial services. Although all of these issues have received attention in their particular context, we believe that this chapter is the first attempt to assess them comprehensively.

It is difficult to define the service sector precisely and to measure its output. Hill (1977) has suggested a way to distinguish services from goods.

Table 6-1. *Services as a Proportion of Gross Domestic Product in Selected Economies*
(percent)

	Service				
Economy and year	*Construction*	*Distribution*	*Transport*	*Other*	*Total*
Hong Kong (1982)	7	18	7	45	78
Denmark (1982)	5	12	7	52	76
Sweden (1983)	7	11	6	50	73
Israel (1983)	7	13	7	46	72
Singapore (1983)	11	21	13	27	72
Canada (1983)	5	9	7	50	72
United States (1983)	4	17	6	43	70
Netherlands (1981)	7	13	6	44	70
Belgium (1983)	6	10	8	46	69
United Kingdom (1983)	5	12	6	45	68
France (1983)	6	12	5	44	67
Spain (1982)	7	18	7	36	67
New Zealand (1982)	5	22	8	30	65
Greece (1983)	6	12	7	40	65
Australia (1980)	7	14	7	37	64
Brazil (1982)	5	15	5	38	63
Japan (1983)	8	12	7	35	62
Norway (1983)	6	12	9	36	62
Germany, Fed. Rep. of (1982)	6	11	6	40	62
Italy (1983)	8	16	7	32	62
Ireland (1979)	9	14	6	32	61
Mexico (1982)	6	23	6	25	61
Portugal (1981)	8	22	6	24	60
Kenya (1983)	5	9	5	39	58
Argentina (1982)	5	18	6	27	56
Thailand (1983)	5	22	8	21	55
Iran (1982)	6	16	7	26	55
India (1982)	4	15	6	27	52
Egypt (1980)	4	13	7	26	51
Nigeria (1983)	7	22	4	16	49
Ethiopia (1981)	4	10	4	27	45
China (1983)	5	4	4	—	—

— Not available.
Note: The qualifications and notes in the source apply to these figures.
Source: United Nations, *Monthly Bulletin of Statistics*, July 1985.

> A good may be defined as a physical object which is appropriable and, therefore, transferable between economic units. . . . A service may be defined as a change in the conditions of a person, or of a good belonging to some economic unit brought about as a result of the activity of some other economic unit.

For tax purposes such a definition is far from complete, as goods can be supplied in the form of services and the other way around. For our purposes, however, it seems unlikely that any serious confusion will arise as to what is a service and what is not. It has not been possible to employ a common definition for all the tables in this chapter, but serious deviations are mentioned in the text. Considerable difficulties arise from the general difficulty of measuring the output of many service industries. This is particularly serious for cross-country comparisons. Within single economies the problems are less severe, although they are still real.

Table 6-1 shows the size of the service sector in thirty-two economies. Although measurement problems make comparisons unreliable, the table indicates that in all the economies the service sector is too large—45–78 percent of gross domestic product—to be ignored by a broadly based tax system. Table 6-2, a breakdown of spending in the EEC, provides more detail on the economic activity generally included under services. It is apparent that the service sector is extremely heterogeneous.

Table 6-2. *Consumer Spending on Services in EC Countries*
(percent)

Service	*Belgium*	*Denmark*	*France*	*Fed. Rep. of Germany*	*Ireland*	*Italy*	*Netherlands*	*United Kingdom*	*Average*
Domestic services	1.7	0.4	0.8	n.a.	0.3	0.6	0.5	0.3	0.7
Medical care and health	10.5	1.9	13.2	13.6	2.7	4.8	12.8	1.1	10.0
Public transport	1.2	2.7	1.9	1.8	2.3	2.1	1.4	3.5	2.2
Communication	0.9	1.4	1.1	1.7	0.9	1.1	1.3	1.8	1.5
Entertainment	1.6	2.3	1.5	n.a.	3.0	2.6	2.4	3.3	2.3
Education	n.a.	1.8	0.3	n.a	2.4	0.4	0.3	0.8	0.6
Hotels and catering	7.7	4.7	0.5	4.2	1.3	8.1	4.7	5.6	3.7
Financial services	2.7	1.0	n.a.	n.a.	1.1	0.3	2.4	2.3	2.2
Other	0.6	0.7	1.8	3.3	1.4	0.7	3.7	0.8	2.1
Total	26.9	16.9	21.2	24.8	15.5	20.7	29.5	19.6	

— Not available.

Sources: International Monetary Fund calculations based on 1985 Eurostat and 1983 national accounts statistics. Figures for Ireland are based on 1982 data weighted by GDP. The hotel and catering figure for the United Kingdom is taken from domestic accounts. Averages cover only items for which there are entries and are weighted by total consumer spending in 1983 at then-prevailing exchange rates. All estimates are for private consumption only because the roles of the public and private sectors vary significantly among countries.

Should Services Be Taxed?

In this section we consider the economic implications of including services in the tax base or of excluding them. The discussion falls under three distinct headings: equity and the relationship between income distribution and consumption of services; economic efficiency and the arguments for uniformity or discrimination within commodity tax systems in a conventional short-term static welfare loss context; and the dynamic effects on economic efficiency that arise from differences in the growth potential of sectors that are differently levied.

Distributional Factors

Because consumption of services varies considerably with income, whether services are included in the tax base has substantial distributional implications. If any area of consumption is untaxed, other spending must be taxed at a higher rate to raise a given amount of revenue, and this accentuates the distributional impact of any exclusions.

We have used survey data from the United Kingdom to analyze the relationship between income, type of household, and consumption of services (table 6-3). Travel expenditures, housing, and meals out are excluded. The main conclusion is that as spending rises, so does consumption of services as a proportion of spending; that is, the marginal propensity to consume services exceeds the average. This is true for all household types and for the overall sample.

The results also indicate that at all income levels, households with only one adult consume more services than do households with more than one adult. This can be most clearly seen by comparing single pensioners and pensioner couples. The presence of additional adults may obviate the need or reduce the desire for many purchased services, such as entertainment and meals outside the home. In addition, economies of scale on purchases of such services as home repairs and maintenance and domestic help may exceed those from purchases of goods. If the ranges of total spending had been based on equivalent income, these differences would have been reduced but not eliminated.

It is apparent that the taxation of services raises issues of horizontal as well as vertical equity, but these differences are less than might be supposed. One reason that household composition has such a small effect on consumption of services is that those services for which need is closely related to the structure of the household—health care for the elderly and education for households with children—are generally provided free of direct charge in the United Kingdom, and expenditure on them is not included in the above analysis.

The positive relationship between income and the share of services in consumption expenditure holds not only for entertainment, meals out, and other conventional luxury items but also, more surprisingly, for public transport. In fact, although buses are most heavily used by low-income households, rail transport constitutes 0.2 percent of the spending of those in the bottom income range and 0.8 percent for those in the top range.

Although manipulation of the VAT base or its rate structure is a recognized, if inefficient, method of effecting a desired distributional goal, there is no reason to exclude services from the base on distributional grounds.

Short-Term Welfare Effects

Exclusion of any items from the tax base raises the required rates of other taxes and the other costs, including deadweight losses, associated with these taxes. Tt is therefore apparent that the efficiency of the tax system will be reduced if any transactions cannot be brought within the scope of the tax base. This implies that there will be deadweight losses if services are excluded, but it does not tell us whether the magnitude of these losses will be substantial or what the appropriate rate of taxation on services would be.

The tax structure suggested by the Ramsey-Boiteux model of optimal commodity taxation—perhaps the best-known such model—implies, broadly speaking, equal proportionate reductions in the demand for all commodities (Baumol and Bradford 1970). Under suitable amplifying assumptions this reduces to the principle that tax rates should be inversely related to demand elasticities. This principle is appropriate if all lump sum taxes are excluded, but it is largely devoid of practical application because although optimal lump sum taxes are certainly infeasible, uniform lump sum taxes are not. Within the Ramsey-Boiteux framework any commodity tax is dominated by a poll tax, and there would be no reason in this model to tax services at all.

A more appropriate framework for assessing the relative taxation of services and other commodities is therefore one in which the government's distributional objectives preclude exclusive reliance on poll taxes. In such a model the tax is based primarily on the total income (or expenditure) of the consumer rather than on the commodity composition of expenditures. This suggests that commodity taxation should be uniform, which implies a common VAT rate across all goods and services. Exceptions are commodities that are complementary with leisure and commodities a taste for which is positively correlated with skill level. Both should be relatively heavily taxed, if they can be identified. Casual empiricism might suggest weak arguments for assigning some services to these categories, but we know of no firm empirical evidence.

These economic costs of discrimination in tax systems dominate any administrative costs involved in the determination of the tax base. To illustrate, we estimate the welfare cost of taxing services in the United Kingdom in 1984. The methodology, which is described in more detail in the appendix, measures the deadweight loss involved in taxation of services as against lump sum taxation. This loss is computed in relation to general commodity tax rates of 10 and 20 percent on all items, including services. For these purposes services exclude transport and housing and account for 9.9 percent of total 1984 consumer expenditure of £194,000 million. The losses concerned are, respectively, £99 million and £347 million. For comparison, the total administrative costs of collecting all value added tax were 190 million in the same year.

Methods of Taxing Services

Services may be taxed by means of ad hoc taxes on particular services or by means of a general service tax. The base of a sales tax may be extended to include services, and the sales tax may be imposed at the retail or the manufacturer or wholesale level or through the VAT mechanism. All these methods are currently in use,

Table 6-3. *Spending on Services as a Proportion of Total Spending, by Household Income, United Kingdom*
(percent)

	Annual income (pounds)						
Household composition	*Less than 4,000*	*4,001–6,000*	*6,001–8,000*	*8,001–10,000*	*10,001–14,000*	*More than 14,000*	*All income levels*
One adult, no children	9	8	9	14	14	20	11
One adult, with children	6	14	10	12	12	30	11
Two adults, no children	7	10	11	10	10	12	11
Two adults, with children	5	6	8	8	10	14	10
Three adults, no children	6	7	7	12	11	12	11
Three adults, with children	10	7	7	9	9	11	10
Single pensioner	11	13	18	22	10	65	13
Pensioner couple	9	10	8	10	10	26	10
All households	9	9	9	10	10	13	11
Percentage of sample in income range	23.3	13.2	11.8	12.8	20.0	18.3	n.a.

n.a. Not applicable.
Note: Travel expenditures on lodging and food are not included.
Source: International Monetary Fund estimates based on United Kingdom (1986).

and many countries use several of them. The perception that services are difficult to tax prevailed before the widespread introduction of VAT (Committee on Turnover Taxation 1964); even the EEC's Second Directive on VAT only reluctantly brought services into the tax base. It is not clear that VAT actually provides a solution to many of the problems identified. One of the supposed advantages of the invoice-based VAT obtains only if turnover exceeds value added by a significant margin. The service sector, which is characterized by high value added at the principal stage of production, is the one that could least benefit from VAT in this respect. Another advantage—that exports can be tax-free and imports can be taxed—also carries less importance for the many consumer services that are largely untraded. There seems, therefore, reason to doubt that VAT lifted the obstructions to taxing services. In this section we consider the advantages and disadvantages of alternative tax treatments in comparison with VAT. We conclude that VAT is a superior instrument in this context, although its superiority is easily exaggerated.

We base our assessment on three principal criteria. The first criterion, which follows from the analysis in the preceding section, is that the tax regime should, as far as possible, be nondiscriminatory among different services and between goods and services. The second relates to the cost and ease of administration and the probability of compliance by taxpayers. The third is that the tax should fall on final consumption and not on intermediate purchases by other producers. Exclusion of intermediate purchases is desirable to prevent arbitrary cascade effects in the tax system as a whole, which create incentives for inefficient production, vertical integration, and importation of items not affected by cascade taxation. Such exclusion can be achieved by differentiation based on the nature of the commodity, the location of the supply, or the identity of the purchaser. Most sales tax systems use some elements of each of these principles, but the first is normally characteristic of a manufacturer or wholesale sales tax, the second of a retail sales tax, and the third of a value added tax.

Regarding the administrative criteria, an effective means of taxing many services is to impose specific taxes on particular services. Almost all countries, whether or not they use VAT, adopt this approach for services that present special difficulties, such as betting and insurance. This approach has administrative merit, since it can be adapted to the circumstances of specific industries, but it is almost impossible to achieve a nondiscriminatory structure of commodity taxation through a proliferation of ad hoc taxes. A general service tax performs better against this criterion. Examples are the "taxe sur les prestations des services" in France and the selective employment tax in the United Kingdom, which preceded the application of VAT to services in these countries. Neither general nor specific service taxes can completely avoid the problem of cascading.

At least some services can be taxed by including them in the base of a retail sales tax, where one exists. Some U.S. states treat such services as restaurant meals and hotel bills in this way, and the approach can clearly be extended. This method distinguishes final and intermediate use of commodities principally by reference to the place of supply. (There may be some exemption for business purchases of retail goods, but this is rarely applicable to services.) Although this procedure works for hotels and restaurants and could be used for other services, such as transport, travel, and real estate, that are largely retailed, other areas of the service sector pose more difficulties. As with changing patterns of the retail distribution of goods, so changes in the ways in which retail services are provided militate against ready identification between the place of supply and the characteristics of the purchaser.

Moreover, the more comprehensive the retail sales tax is in its coverage of services, the more likely it is to introduce some taxation of intermediate goods. Unless it is equivalent to a full VAT, without tax levies on transactions between registered traders, the retail sales tax only works well if a clear distinction can be made between commodities that are sold for further processing and those that are destined for final consumption and if channels of distribution are well defined and stable. Neither condition is generally true for services. For some services, such as haircuts and massages, there is no intermediate use, and for others, such as club subscriptions and entertainment expenditure, public policy may be to deny intermediate use even if the expenditure is incurred at the expense of a business. But most services—professional services, advertising, transport, and communications—have extensive mixed use. Table 6-4 demonstrates this for the United Kingdom. Although services other than construction are, not surprisingly, little used in capital formation, other intermediate purchases are a substantial proportion of the sales of all categories except hotel and catering services, for which classification problems arise. Nevertheless, extension of the retail sales tax would touch only a limited proportion of consumption of services, including these areas for which VAT works best. The extension of a general sales tax imposed at the wholesale or manufacturer level is not a feasible solution to the problem of taxing services.

An advantage of VAT over the other methods is that it appears to cope automatically with the requirement of distinguishing between intermediate and final use. Registered traders receive refunds of tax paid, and the burden on final consumers lies where it falls. But, as we note in the discussion of the place of supply of services, below, the application to traded services is less

Table 6-4. *Proportion of Output in Service Sectors That Is Sold for Purposes Other Than Domestic Final Consumption*
(percent)

Service output	*Sold for intermediate use*	*Exported*	*Used in domestic fixed investment*
Miscellaneous	59.1	10.1	0.0
Post and communications	56.3	3.4	8.1
Real estate	51.1	2.4	0.0
Transport	48.9	30.0	1.9
Banking, insurance, and the like	33.0	18.3	12.5
Distribution and repairs	29.6	6.6	4.5
Construction	13.1	0.8	64.7
Hotels and catering	5.7	12.1	0.0
Total services	33.8	11.0	14.9
Total nonservices	36.5	19.4	6.1
Total manufacturing	39.6	25.3	8.7

Source: *Input-Output Tables for the United Kingdom, 1979*(London: Her Majesty's Stationery Office, 1983).

straightforward than it seems at first sight. As a result VAT regimes are obliged to distinguish between kinds of services, some of which are taxed whereas others are zero-rated. But it remains generally true that VAT deals more easily with the exemption of the intermediate use of services.

The methods discussed above share with VAT the disadvantage that their application to services involves the inclusion of a large number of relatively small producers. The compliance requirements of VAT are not less than for these other tax mechanisms and are perhaps greater. For most service industries the nature of the product implies that value added is a substantial fraction of turnover. Where this is not the case, as in retailing, it is common practice to offer small traders the opportunity to pay tax on the basis of a turnover-related formula rather than on a strict computation of value added. The claim that VAT provides an administratively simple mechanism for taxing services is therefore difficult to sustain, and it is not surprising that many developing countries that use VAT restrict its imposition to the manufacturing or wholesale level, leaving services out of the tax base.

From this discussion we can draw the following conclusions. If VAT is to be introduced, services can be brought within its scope with little, if any, more difficulty than would be involved in achieving similar objectives through other means. Moreover, VAT can, simply by exempting commodity retailing, include services in the tax base in a tax effectively imposed on the manufacturer or wholesale level. This gives VAT a significant advantage over classic manufacturer or wholesale taxes in the taxation of services. Nevertheless, a retail sales tax can effectively tax many consumer services, and VAT cannot be straightforwardly applied to many of the areas for which the retail sales tax is inadequate. This has led many countries that use VAT to increase their reliance on specific service taxes, whereas there is evidence of a declining reliance on such taxes in countries without VAT (see table 6-5). As discussed below, it is possible that problems are more efficiently handled through a series of ad hoc administrative concessions under VAT than through a series of ad hoc taxes. It is unlikely, however, that the superiority of VAT with respect to services would shift the balance in favor of introducing it rather than using a retail sales tax, if VAT had been decisively rejected on other grounds.

Services and Development

Tax distortions can cause long-term welfare losses on top of the short-term costs described above. If the tax system discourages the transfer of resources to, and the development of, a sector in which productivity growth is faster than that for the economy as a whole, the growth of the overall economy is likely to be hindered. There is some suggestion that this could happen if services are taxed more favorably than manufacturing industries (see, for example, Kaldor 1966).

That services are cheaper (compared with manufactured items) in poor countries than in rich ones is well documented (Bhagwati 1984). One explanation is that productivity gains are made most rapidly in the manufacturing sector as economies grow. Poor countries have cheap services because productivity in the largely traded manufacturing sector is low by international standards. This depresses wages in the service sector, where opportunities for differences in productivity levels are smaller.

This account is consistent with the findings of

Kuznets (1966), who observed that movements in the share of the service sector are neither marked nor consistent among countries or over long subperiods and that the service sector tends to take a rising proportion of the labor force. Although Kuznets refrained from explaining these observations in terms of lower productivity growth (on account of measurement difficulties), he did postulate that as a likely cause.

It is, however, necessary to consider whether the existence of greater differences among countries and over time in manufacturing productivity reflects a real economic phenomenon or the difficulty of measuring productivity in the service sector. It is obvious that medicine in the United States is more expensive than in many developing countries or than in the United States fifty years ago. It is also obvious that the quality is higher. The first effect is properly reflected in economic statistics; the second is not.

It would be inappropriate to comment in any detail here on the role of different sectors of the economy in promoting economic development, but we should note that these considerations may influence the design of tax structures. It is unlikely that they do or should influence them in a direction that would lead us to tax services more favorably than goods in general, and perhaps they would lead to less favorable treatment of services.

Table 6-5. *Taxes on Specific Services as a Proportion of Government Revenue*
(percent)

Country	*1965*	*1975*	*1983*
EC members			
Belgium	0.4	0.7	0.8
Denmark	0.3	0.3	0.4
France	0.5	0.5	1.7
Germany, Fed. Rep. of	0.5	0.8	1.0
Italy	1.2	0.7	1.0
Netherlands	0.3	0.7	0.5
United Kingdom	0.5	0.6	0.6
Canada	0.5	0.6	0.6
Japan	1.3	1.1	0.8
United States	1.4	1.2	0.9

Source: OECD, *Revenue Statistics of OECD Member Countries* (Paris, 1985).

Table 6-6. *Value Added as a Proportion of Total Output, by Service Sector*
(percent)

Service	*Labor*	*Capital*	*Total*
Miscellaneous	61.7	18.9	80.6
Post and communications	49.6	23.0	72.5
Real estate	11.6	43.3	54.9
Transport	37.1	15.6	52.7
Banking, insurance, and the like	63.0	−0.9	62.1
Distribution and repairs	41.7	19.3	61.0
Construction	32.1	22.6	54.7
Hotels and catering	25.8	14.0	39.9
Total services	42.7	17.4	60.1
Total nonservices	31.5	15.7	47.2
Total, whole economy	35.6	16.3	52.0

Source: *Input-Output Tables for the United Kingdom, 1979* (London: Her Majesty's Stationery Office, 1983).

General Problems in Taxing Services

Self-Supply as an Alternative

Value added tends to be a high proportion of turnover at the main stage of production for service industries. Table 6-6 shows this for different types of services and for different sectors of the U.K. economy. The contribution of labor is a more important component of the output of service industries than of manufacturing, whereas capital is less important; the capital-labor ratio for services is half that for manufactured items (Kravis, Heston, and Summers 1982). This predominance of labor-intensive production limits economies of scale and accounts for the large number of small suppliers in the service sector.

Because services are predominantly labor, self-supply is more readily substitutable for a purchased supply than in most other sectors. Consumers will not usually be inclined to make their own steel, but they are well able to cook their own food or clean their own kitchens instead of paying someone else to do so. Although the self-supply problem is not unique to services or to sales taxes (the labor involved in home knitting escapes both income tax and VAT), it is in the service sector that the substitution of own supply for purchased supply is most feasible. Incentives for self-supply exist for all agents who are unable to recover input tax; thus these distortions apply not only to final consumers but also to all exempt traders. It is neither efficient nor equitable, however, for services to be provided by those who do not have a comparative advantage in their provision.

Although it is difficult to assess the elasticity and extent of substitution, it seems unlikely that sales taxes could account for more than a small proportion of the total distortion caused by the tax system. Restaurant meals and domestic services within the home (including home maintenance) are probably the consumer services most readily substitutable by self-supply. Repair services usually require more expertise than most consumers possess. Certain services, notably laundry cleaning, are replaceable by durable goods that themselves are taxed and thus enjoy little competitive advan-

tage over purchased supplies. The same is true of transport. Distribution and banking both enjoy economies of scope and scale that make self-supply unattractive.

Location of Supply

It is a feature of services that the location of supply or of consumption is often elusive or even meaningless. This is particularly important for international trade in services, where two problems arise. First, rules must be devised to define what actually constitutes an export or import of a service; defining the location of a service supply is a prerequisite for effective treatment of traded items. Second, the nontangibility of services makes it difficult to detect purchases of services by physical checks at border points or inland.

The general principle underlying the VAT treatment of goods in most countries that employ the tax is the destination principle. This means that although jurisdiction for tax purposes is based on the place of supply, the rate of tax levied depends on the residence of the purchaser. Thus exports are zero-rated, and imports are taxed as domestic supplies. When final consumers purchase goods abroad, the country of purchase remits tax to the taxpayer, and the country of residence imposes it on importation.

Because of the difficulty of determining or detecting when a service has been imported or exported, this principle cannot generally be applied to services. Consider the problems of identifying importation (that is, purchase by a resident) of the following services that are frequently traded internationally (that is, purchased by nonresidents): hotel services, gambling, transport, legal services, and financial advice. It is apparent that in these cases none of the obvious methods work to locate the transaction. If tax liability is determined by the place of supply, then so long as different countries impose tax at different rates, international trade in services will be distorted in precisely the ways which the destination rules applied to the taxation of commodities seek to avoid. If tax liability is determined by the place of residence, there is no effective mechanism for enforcing liability in respect of purchases by final consumers—a serious drawback because services account for a substantial proportion of total consumer expenditure abroad. The proper objective, then, is to find a scheme that is at once feasible and broadly similar in practical effect to the application of the destination principle to the taxation of tangible commodities.

The EEC's Sixth Directive is designed to provide a solution to these problems that arise under VAT. Under the directive only exports of goods—not of services—are zero-rated. The general presumption is that services are provided at the address of the supplier, but some services that relate exclusively to business purchases—consulting services, for example—are deemed to be located at the address of the purchaser, and these are zero-rated. The net result of these provisions is that in virtually all cases consumers pay for services in the country of supply (in line with the system in effect for goods), whereas businesses' exports of services are zero-rated, and imports of services are taxed as though the businesses had supplied them themselves.

This approximates, in effect, the theoretically ideal system, but with some differences. First, because there is a presumption against zero-rating exports and because the schedule of services deemed to be supplied at place of receipt cannot be totally comprehensive, a few supplies are not zero-rated on export. Second, purchases by consumers abroad are taxed at the place of purchase rather than at the consumers' home location. (This is, however, in line with the actual treatment of most purchases of goods.) Third, exempt traders have an incentive to import services rather than to buy them domestically. If a Danish bank wants to employ an advertising agency to design a campaign, it has to pay VAT to any domestic supplier, but it can avoid the tax if it designs the campaign itself or employs a British agency.

Public Provision and Purchasing

A large proportion of services is publicly provided, and the bulk of publicly provided consumption is in the form of services. The spectrum of charges levied by the government or its agencies is wide. Some charges—postal fees, for example—are for essentially commercial services and broadly reflect costs. Some, such as entrance fees to state museums, fees for passports, and broadcasting licenses, are arbitrary charges for state services connected with noncommercial activities and are substantially unrelated to the cost of provision or the value of supplies. This category shades into pure taxes, such as vehicle registration duties. Where the services are competitive with commercially provided facilities and the fees are related to the costs of providing state services, efficient allocation implies that VAT should be chargeable. Where there is no such competition or where prices are not related to costs, the position is different. Charging VAT on services provided by the same authorities who benefit from the revenue raised seems unnecessary by any criterion. The effects of charging the tax can be precisely replicated by appropriately manipulating the price.

Some government bodies are beyond the direct control of the authorities that collect the consumption tax. They include local authorities, government departments with predetermined budgets, and quasi-governmental bodies. For these it seems desirable that any charges made should be subject to VAT. This is most

obviously true where the activities concerned compete with similar commercial services. But even where this is not the case, there is potential inefficiency if, for example, local voters' choice of an appropriate level of local services is distorted by the taxation of private and not of public consumption. Nor does it make sense for the contribution of a local area to central revenue to be influenced by such a choice. This implies that local taxes should be subject to a federal VAT, with deductions for locally distributed transfer payments.

At the same time it is important that state bodies have correct incentives for efficient purchasing decisions. For this reason they should, like firms, be indifferent as to whether an item is taxed when deciding whether to buy it. Government departments should not have to pay a tax on contracted cleaning services that they do not pay if they employ cleaning staff directly. Under a retail sales tax it is unlikely that many such purchases would have carried a tax charge. Under any other tax system government bodies should be treated exactly like private businesses.

The combination of allowance of input tax deductions with taxation of charges levied leads to a system of full VAT registration for all public sector bodies that have some degree of autonomy. The EEC partly takes this approach with respect to local governments. Given the tensions that often exist between state and national authorities, full adoption of this system may be unrealistic, but it would be a logical step.

Specific Areas

Retailing

The Neumark Committee, which first proposed VAT for the EEC, did not envisage its covering the retail sector. The committee believed that the best tax structure for the EEC would be an origin-based VAT at a uniform rate across the continent up to the wholesale stage and a retail sales tax at a rate that would vary to allow governments flexibility in revenue-raising powers.

> For a long time it will not be feasible to impose as the sole form of the turnover tax a single tax at the retail stage due to practical reasons of fiscal technicalities (particularly considering the very large number of small retail merchants most of whom are unable to keep books) . . . Levied at moderate rates as a complementary tax it would not raise the same objections or difficulties. (Neumark Committee 1963).

The exclusion of certain sectors from the tax removes much of the economic rationale for VAT. First, it is desirable to tax value added at the retail stage to prevent distorting consumer preference among goods that have different retail margins. Second, it is important to avoid a system that favors distributive trades over other forms of economic activity, for this hinders the efficient development of a sector prone to underemployment. Finally, it is becoming increasingly difficult to define the retail sector in a precise way in modern economies where there is no longer a regular distribution chain from manufacturer through wholesaler to retailer. In economies in which retailing is a less developed industry, however, exclusion from the full effects of the tax may be more justifiable and may be achieved by specifically exempting retailing or by setting a turnover threshold high enough so that most retailers do not enter the tax except voluntarily. The first method avoids distortions within the retailing sector itself at the cost of exacerbating distortions between retailing and other sectors.

When retailing is included in VAT systems, it usually enjoys special treatment. Issuing and keeping tax invoices on all sales is a considerable burden on those who deal almost entirely with final consumers. Moreover, retailers by their nature tend to sell a more diverse range of items than do most traders earlier in the production chain, which exacerbates the administrative task of calculating output tax in a multiple-rate system. For this reason most countries have special schemes whereby some weighted average of sales is used to approximate final liability. For example, shops are often allowed to apportion their sales among rates by using the proportion of each item in total purchases of inputs, thus disregarding differential margins on items sold at different rates of tax. This, of course, undermines much of the case for taxing items at the retail stage at all, but assuming a uniform positive margin on all items sold yields a better approximation than deeming a zero margin. An alternative approach is to apply flat-rate industry-wide margins to purchases by shops, ignoring their individual margins. Both methods allow proprietors to ignore the precise complexion of their turnover but do not completely lift the tax burden from them.

Health and Education

The almost universal exemption of health and education services from VAT can be justified on several grounds. The most common is that such services are meritorious items that yield benefits to society on top of those accruing to the individual purchaser or that involve "significant social policy considerations" (United States, Department of the Treasury 1984). Tax exemption then serves as a crude form of public subsidy in much the same way as a low VAT rate on books or newspapers does. This argument is rightly viewed with

skepticism in other areas; explicit subsidies are usually regarded as a preferred method of correcting prices. Moreover exemption—which implies an arbitrary rate of effective tax depending on the proportion of taxed inputs—is a crude approach to the problem.

Where health and education are publicly provided, the general arguments rehearsed above come into play. The grounds for applying the tax to areas in which market prices are systematically and deliberately overridden are solely administrative. Health and education often fall into this category and might expect to receive exceptional treatment under VAT. Such arguments would still not justify the exemption from tax of unsubsidized providers in the private sector.

An argument for a more general tax exclusion is that purchases of health and education are not consumption but a legitimate business expense of the personal sector and thus do not fall within the desired VAT base. This argument has the same force as applied to VAT as it has when applied to income tax. Although some countries do allow some deductibility of health and education expenditures for income tax purposes, we do not regard this case as substantial.

A final argument for excluding these areas from tax, and one that distinguishes them from legal services, is that they are often provided by nonprofit bodies. It is not clear whether only nonprofit bodies should be excluded from tax or whether the whole industry ought to be on the grounds that the predominance of nonprofit bodies in these fields indicates some general peculiarity. The first argument is not strong. Insofar as not-for-profit suppliers charge lower prices than commercial operators, they remit less VAT to the authorities anyway. It seems appropriate that they should remain in the VAT system, although voluntary donations to them should not qualify as considerations in return for supplies and should thus not attract a VAT levy. It is not apparent why the motives of the supplier or of a majority of all suppliers should influence the tax imposed on the consumer of the supplies.

None of the arguments provides more support for exemption of health and education than for zero-rating them. Exemption is usually administratively easier and represents a smaller degree of support at the expense of other taxpayers. Partial exemption, however, generates a high proportion of the administrative complexity of VAT. Insofar as providers of health and education also provide taxable outputs, zero-rating them is administratively preferable to exemption. It also leads to less distortion in the purchasing decisions of schools and hospitals. Finally, while zero-rating does represent a greater burden on the taxpayer than exemption, it at least ensures that the degree of implicit public subsidy is not arbitrarily determined by the proportion of taxable inputs used in these industries.

Postal Systems

The EEC's Sixth Directive on harmonizing VAT within the Common Market insists on exemption for publicly provided postal services in EEC member states, in conformity with the usual practice in the Community when the directive was drafted. There is little rationale for the system that was adopted. The bulk of postal services are carried by monopoly public operators, often with a status formally equivalent to that of the civil service. The matter is thus often seen as analogous with the issues discussed above in relation to provision of services by the public sector. Postal services, however, constitute a commercial activity that competes with telecommunications services (themselves frequently state-provided and normally taxed) and with other means of communication. Their exemption raises the price of the services for business users (since the postal service is unable to recover unpaid tax on its own activities, whereas any output tax would be recovered by commercial customers) and lowers the costs to domestic consumers. Since competition is probably more vigorous in the business than in the personal sector, it is not clear that the service, taken as a whole, gains any advantage from exemption. There is no reason why postal systems should not be subject to tax.

Trade in Second-Hand Goods

Devising a VAT system for the second-hand goods sector has proved complicated. Since VAT is not intended to be a transactions levy, it is inappropriate to tax the full value of an item every time it changes hands. It is desirable, however, to tax any value added by second-hand dealers on their sales. There is also scope for distortion—although probably unavoidably—if the consumption benefits derived from items sold to consumers before the introduction of VAT remain untaxed.

When a dealer purchases items from a member of the public, the transaction is inevitably outside the scope of VAT because the seller is not registered for VAT purposes. If the dealer is a registered trader, VAT will be charged on his output, with the result that a multiple charge is imposed on the items concerned. The normal practical procedure is to introduce special rules for commodities—houses, cars, works of art, and the like—for which there is an active second-hand market. These rules have the effect of imposing tax on the dealer's margin. The anomalous treatment of other second-hand transactions—and the substantial disincentive to commercial, as opposed to private, second-hand trading—remains.

frequently exempt. The EEC's Sixth Directive exempts travel agents when they act as intermediaries who buy services provided abroad on behalf of their customers.

For services provided domestically, the agent is charged tax on his commission, and all other supplies are taxed as though the agent were supplying them. A low-rated bus tour would thus be charged at a low rate, whereas standard-rated hotel fees would be charged accordingly. This system ensures that there is no distortion against package trips but makes VAT administration very cumbersome for that sector.

Advertising and Communications

Television and radio in the private sector are usually financed not through explicit charges for provision of programs but through fees to advertisers for air time. Because most advertisers are able to reclaim the VAT charged on their advertising expenditure, some have concluded that the value added by television or radio companies or by other media financed by advertising is untaxed in a VAT system (see, for example, *Economist* 1984). This would, if true, be an unnecessary anomaly. In fact, if we believe that advertising adds value to the product advertised, expenditure on it is taxed in the higher price of advertised products. Even if we believe that advertising is appropriately viewed as a consumption activity by certain producers, the normal VAT treatment works satisfactorily, although it would be appropriate to make some proportion of advertising expenditure ineligible for the recovery of input tax. If a television company finances part of its services through a subscription scheme, as long as VAT is charged on the subscriptions all consumption is taxed once and once only. VAT is remarkably robust in effectively taxing transactions in markets in which flows of payments are not straightforward.

Durable Goods

Durable goods do not provide a lump of consumption at the time of purchase but yield a consumption stream over their lifetimes. This feature has some significance for the treatment of the rented goods sector. In perfect rental and capital markets, consumers may choose to buy a durable good—borrowing to finance the purchase—and pay a lump sum tax straightaway, or they may choose to rent the item from a company that remits tax to the authorities as the income stream from the durable good is derived. In the first case the consumer pays interest on the lump sum tax payment as well as on the principal itself; neither interest payment is subject to VAT. In the second case the effective price paid by the rental company is lower because the company can reclaim tax, but the company's interest payments are reflected in the rental price charged to consumers, and tax is levied on that price. The first case requires that interest be paid on the tax charge and the second that tax be charged on the interest payments. There is clearly no distortion in the consumer's incentive to borrow or to rent.

When the perfect-market assumption is dropped, this result no longer necessarily holds. The equivalence result requires a common general borrowing and lending rate and certainty about the prospective consumption flows and the basis on which they are valued. If consumers face higher interest rates than producers, there is a VAT advantage to renting (although this may not offset the income tax advantage to buying). If returns from consumer durables are uncertain, tax will be payable on the ex ante expectation rather than the realized value of the returns from the asset. If a durable good is subsequently traded, the tax paid by any holder will, inappropriately, be affected by changes in its capital value that arise from changes in expectations during its period of ownership.

Housing

The most extreme case of the problems of second-hand items involves land, housing, and construction. There is a more developed second-hand market for these commodities than for any other. Buildings have long lives, and most consumption of housing services relates to buildings that predate the introduction of VAT. Thus the normal treatment of durable goods as described above is unworkable for most housing consumption. Another complicating factor is that housing is commonly viewed as a necessity and as a meritorious item.

Under the pure VAT treatment, tax would be levied on imputed income from buildings and land. Owner-occupiers would pay tax on their property, and landlords would charge VAT to their tenants. All consumption would thus be taxed at some stage, and as long as buildings were not taxed at point of sale, nothing would be taxed twice. Another approach is to tax the capital value of buildings at some point. This is straightforwardly applied at point of sale for new buildings. For existing stock the ideal approach is a one-time levy on the capital value of buildings at the time of the introduction of the tax. An alternative is the stock value added tax, or S-VATC, outlined by Conrad in this volume, under which buildings are taxed at first sale. The problem with this approach is that it locks people into the accommodations they had at the time of the introduction of VAT, since the longer sale is deferred, the later the capital tax is paid. But any capital approach to the taxation of housing has two significant problems. First, although ex ante the prepayment of tax and the flow payment of tax are identical (as described above for durable goods), unexpected capital gains and losses do in fact arise in housing, and the

implicit income from these will not be taxed under a capital VAT. Housing is the one durable good for which this is a serious problem. Second, arrangements have to be made for the transfer of second-hand property between the registered and the unregistered sectors. Conrad has devised an effective, although not a simple, means of coping with the second problem (Conrad, in this volume).

If these treatments are rejected on obvious practical grounds, there is a range of options from which to choose. The EEC option is to tax new buildings at a positive rate while exempting all other transactions in the residential area. This discriminates against new buildings but has worked convincingly enough for the New Zealand government to adopt it as its system for the goods and service tax it is introducing. The British government exempts all building and land sales and leasing transactions and zero-rates new buildings. This has two disadvantages: it requires that a distinction be made between new buildings and alteration of or repairs to buildings, and it does nothing to cope with the huge quantity of untaxed housing consumption. The main difference between this approach and the recommended EEC system is that exempt firms face no tax in the United Kingdom, whereas under the EEC rules only residential property is exempt and banks and insurance companies face a tax bill on their rents.

Financial Services

Financial services pose a problem—as does any form of business that derives a substantial proportion of its revenue from a source other than specific charges. In this case the source is the differential between interest rates on borrowing and on lending.

All countries that use VAT exempt financial services from value added tax altogether, but often they levy some special tax on them. The drawbacks are that exemption undertaxes banks in relation to other industries and a special tax on banks falls indiscriminately on business and private users and introduces a cascade element into the tax system.

Another approach, discussed at length in United States, Department of the Treasury (1984), is to tax all interest payments to banks. This would, in effect, amount to a tax on consumer loans, as most other users would be able to reclaim the tax paid. An option not discussed in the Treasury report is to tax the differential between the market interest rate and the actual rate charged rather than the full interest payment (see Edwards and Mayer 1983). Banks really provide services to both borrowers and lenders, and the charge paid is that differential. Adoption of this system also has the advantage of consistency with the principle of a sales tax that calls for taxing all consumption once and once only without taxing pure interest payments as an income tax does.

Conclusions

It is often asserted that a value added tax provides a straightforward way of taxing services as well as goods. This claim is much exaggerated. Most service activities pose problems under a value added tax, and many of these problems have been dealt with in practice through ad hoc procedures that could equally well have been used under other alternative tax regimes. But it is true that most kinds of service can be taxed under a value added system, and the difficulties of so doing are in the main no worse than under alternative tax regimes.

The best general guide to standard practice is the EEC Sixth Directive. Unfortunately, this is little more than a catalog of the most common of the ad hoc procedures that EEC member states have developed. In many cases it is possible to devise more appropriate regimes if careful consideration is given to the underlying rationale of value added tax and to consistency in the treatment of self-supply and competing activities. In this chapter we have sought to provide a coherent framework for such an analysis.

Appendix A. Welfare Costs of Taxation of Services

Let p_i and pt_j be, respectively, the consumer and producer prices of commodity i subject to ad valorem tax at rate t_i. Let $pt_i = p_i(1 + t_i)$ and demand functions $q_i = q_i$ (p, x), where p is the price vector and x is total expenditure. Then the tax revenue is

$$R = \sum_i t_i \, pt_i \, q_i$$

and, when q_i is treated as a compensated demand function, we have

$$\frac{\delta R}{\delta t_i} = \sum_j \frac{\delta q_j}{\delta t_j} pt_j \, t_j + pt_i q_i$$

Simplifying and rearranging gives

$$\frac{\delta R}{\delta t_i} = e \sum_j w_j e_{ji} t_j / (1 + t_j) + w_i f \, ex / (1 + t_i f$$

where

$$e_{ji} = \frac{\delta_{q^i}}{\delta p_i'} \frac{p_j}{q_j}$$

is the uncompensated cross (own) price elasticity of good j with respect to good i and $w_i = p_i \, q_i / x$ is the share of commodity i in total expenditure.

This equation is applied to the almost ideal demand system derived by Muellbauer and Pashardes (1986). The assumed tax structures involve a comparison of tax revenue at rate $t_i = 0.1$ on all i with tax revenue at $t_i = 0.1$ on all i except services. The comparison measures the revenue difference available at constant assumed utility level. The procedure is repeated for $t = 0.2$, with results as reported in the text.

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7

The VAT and Financial Services

Malcolm Gillis

It has long been realized that financial institutions present unusual problems for both the design and administration of income taxes.[1] Value added clearly is no less present in financial transactions than in those involving goods and other services. This does not necessarily imply that value added in finance is easily taxed or that all financial services should be taxed under a value added tax (VAT). Twenty-five years of experience with value added taxation in Europe have made it clear that truly satisfactory solutions to problems of taxing financial institutions under a VAT have yet to be devised, much less implemented. That this experience furnishes so few positive lessons for developing countries that are considering adoption of a VAT is lamentable, since inappropriate choices in applying a VAT to financial services in such countries may impede the orderly development of their financial sectors. Such an outcome would tend to slow the process of growth and development by hampering the emergence of activities for efficient financial intermediation, efforts for mobilizing domestic capital resources, and the capacity of the financial system to transform and distribute risk.

Workable options for the VAT treatment of financial institutions in developing nations can be defined as ones that are as consistent as possible with neutrality in tax treatments but that are also administratively feasible and do not erect needless barriers to the orderly development of the overall financial system.

The concern here is primarily with design of options for the type of VAT that extends through the retail sector and more specifically with the treatment of financial services under a consumption-type VAT imposed on the destination principle and collected by the tax credit method.[2]

Financial Sectors in Low- and Middle-Income Countries

Only in the mid-1960s did many analysts and policymakers begin to recognize the role of the financial system in the processes of growth and development in developing countries. Economists such as Shaw (1973) and McKinnon (1973) had by 1980 clearly established the importance of deep finance in mobilization of domestic resources, promotion of employment, and growth and diversification of risks in both rural and urban settings.[3] Successful financial reforms in Korea, Taiwan, Colombia, Brazil, Indonesia, and a host of other countries tended strongly to support the "financial-deepening" thesis. It is now widely appreciated that policies, including tax policies, that lead to shallow finance—a shrinkage in the real size of the financial system—are inimical to growth and development.

Differences in financial structure as between different developing countries are at least as great as differences in levels of income among these countries. Therefore, generalizations about financial structure in such nations are difficult to defend. Nevertheless, some commonalities may be cited.

In virtually all developing countries, the financial system consists of a remarkable variety of interconnected financial institutions, both formal (organized) and informal (unorganized). In the lowest-income countries or in countries with long histories of strong inflation the size of the unorganized financial sector may equal or exceed that of the organized sector. Except in Liberia and a few francophone African countries, a central bank is at the core of the financial sys-

tem. But in all developing countries the commercial banking system, public and privately owned, is not only the most visible but the most important component of the organized financial system. Virtually everywhere commercial banks are the principal recipients of financial savings and the primary sources of domestic credit to the private sector. The development of other elements of the organized financial sector, including investment banks, savings banks, and the nonbank financial intermediaries, depends vitally on a well-functioning commercial banking sector. Nonbank financial intermediaries include life insurance companies, casualty insurance firms, reinsurance agencies, and pension funds.

Coexisting with the modern, organized financial sector is the unorganized sector, which may in some countries have antedated the organized sector by several centuries. This sector includes pawnshops, local money lenders, trade credit, cooperative credit, and other informal arrangements involving the borrowing and lending of money, including intrafamily transfers. Taxes, whether income or value added taxes, typically do not apply to the unorganized sector, whether by design or by default. This of course does not mean that the unorganized financial sector will be unaffected by taxes imposed on the organized sector.

In some countries, particularly in Latin America and East Asia, the organized financial system has been a major vehicle for mobilization of domestic savings. In other countries, notably in Africa, the organized financial system has remained small and poorly developed, contributing little to resource mobilization or to the pooling of risks across the economy (Gillis and others 1983, ch. 3). An important consideration in the design and implementation of the VAT in all developing countries is that of ensuring that the tax does not jeopardize either of the vital functions of the financial system.

Comparative Treatment of Financial Services under the VAT: Developed and Developing Countries

The base of a consumption-type VAT extends to—and is intended to be confined to—all personal consumption spending, including all services of a consumption nature. Failure to tax any consumption item, whether goods or services, favors the excluded services relative to taxed items. Nevertheless, certain services, including some types of financial services, may be legitimately excluded from the VAT base for administrative reasons or because they do not represent consumption. For both reasons the inclusion of all financial services in the VAT base has not proven practicable in countries with a VAT. Two methods have been tried to free financial institutions from obligation to pay a VAT: ordinary exemption and zero-rating. As Shoup explains in this volume, the exemption method frees a firm from paying tax on sales of exempt items (services), but it does not free the items (services) from tax. Zero-rating, however, achieves both.

The European Community

After nearly two decades of experience with VAT in most countries of the European Community (EC), satisfactory methods for full taxation of financial services have yet to be developed. Practical problems in including banking services in the base of the VAT have instead led all countries of the EC to exempt, rather than to zero-rate, the core activities of banks. No country of the EC attempts to apply VAT to such intermediary activities as loans, deposits, or security transactions (Price Waterhouse 1979). Six of the nine countries do, however, apply VAT to several so-called secondary activities of banks, including rentals of safe deposit boxes, printing of checks, and foreign exchange transactions. Such countries as Germany, however, do zero-rate banking services when these are exported to countries outside the EC (International Bureau of Fiscal Documentation 1982, p. 53). Britain zero-rates all financial services supplied to persons outside the United Kingdom (Price Waterhouse 1979).

Although a portion of services supplied by banks is included within the VAT net, the entirety of services provided by insurance companies is nontaxable to the customers of such firms. All countries of the EC have specifically exempted all insurance services.

It is noteworthy that although countries of the EC do not generally attempt to apply VAT to financial services, many do impose other forms of indirect taxes on such services. In particular, all such countries have special levies on insurance, sometimes expressed as a percentage of the premium, sometimes as a percentage of the value of the policy. In certain cases, these taxes are substantial. Taxes on life insurance premiums are 4.8 percent and 4.4 percent in France and Belgium, respectively, and 6 percent on several types of insurance in the Netherlands (Gillis 1984).

Other Countries

Israel has been the only country to attempt to apply a VAT to a wide variety of financial services. The VAT imposed on financial institutions in Israel was not, however, of the subtraction-method tax credit type, in which tax liability is computed by subtracting taxes paid on purchases from taxes due on sales. Rather, a special addition type of VAT was imposed on the financial sector.[4] A 12 percent VAT rate applied to the sum of payrolls and profits of financial institutions.[5] No offsets were allowed for ordinary VAT paid by financial firms

on their purchases, nor could customers of banking firms credit the special VAT against the ordinary VAT due on their sales.

The special VAT on financial institutions proved unworkable and unpopular in Israel. Firms using banking and insurance services, for example, could not utilize the special VAT as a credit against taxes due on their sales, and financial institutions could not use ordinary VAT paid on their purchases as a credit against the special VAT applied to their supply of financial services. In response to complaints from both groups, the government abolished the addition type of VAT on financial institutions in 1981, replacing it with a separate tax of identical coverage, but completely divorced from the VAT. Since the 1981 tax on financial institutions is not labeled a VAT, it is quite clearly noncreditable.

The principal lesson from the Israeli experience seems to be that efforts to apply an addition-method VAT to financial services while other sectors employ the subtraction method leads to complications with tax credit offsets. The solution adopted in Israel was to ignore the credit problem through enactment of special taxes on financial institutions, as in Europe.

The VAT treatment of financial institutions in New Zealand was the topic of extended debate as that country moved toward implementation of the VAT (called the Goods and Services Tax, or GST) in October 1986.

The Ministry of Finance originally proposed that most financial services (including all life insurance premiums) be exempt from the GST. Fire and general insurance, as well as reinsurance services, were, however, to be fully taxed. Firms in the financial sector that would be affected by exemption reacted strongly, primarily on grounds that exemption without credit would seriously complicate the tasks of complying with the GST for a large number of registered persons.[6] There was also concern that exemption of financial institutions would endanger their international competitiveness, even with zero-rating of exports of financial services, as proposed by the government. And zero-rating of financial services was seen as complicating compliance with the tax, not to mention tax administration (Advisory Panel 1985, p. 4).

The government's special advisory panel, which included experts from the financial sector, proposed instead that the VAT be fully applied to all financial services except certain insurance. For insurance, the panel endorsed the government's proposal for full taxation of premiums for fire and general insurance policies, as well as reinsurance. The panel also strongly recommended, however, full taxation of premiums for pure life insurance, both term and whole life policies, and exemption of that portion of any whole life premiums that involve a savings element for the policyholder (Advisory Panel 1985, pp. 19–20).

Further, in the event that full taxation of financial services proved unacceptable to the government, the advisory panel recommended zero-rating instead of exemption (Advisory Panel 1985, p. 17). The government subsequently rejected the panel's recommendations on the VAT treatment of financial institutions and announced in August 1985 that it would proceed with its original proposals virtually intact: exemption of all financial services save fire and general insurance and reinsurance.[7] Exports of all financial services, including both exempt life insurance services and taxable nonlife insurance, are, however, zero-rated under the GST (Inland Revenue Department 1985, clauses 3, 14).

Developing countries that have employed the retail form of the consumption VAT have in general opted for the treatment of financial services used in the countries of the EC. The Korean VAT provides exemption, not zero-rating, to all insurance services and to financial services generally. In Korea as in Europe, however, services rendered outside the country are zero-rated (Ministry of Finance 1978, pp. 19–21). Latin American countries adopting a VAT also tend to follow the pattern of the EC. Both Argentina and Brazil exempt all financial services from VAT. Brazil, like most European countries, employs special taxes on financial institutions called the Imposto sobre Operacoes Financeiras (OIF). Chile, however, taxes general insurance under the VAT, but not life insurance companies, and exempts the core activities of banks.

Generic Issues

Criteria for Choice of a VAT for the Financial Sector

Developing countries that are contemplating adoption of the VAT face a large array of possible forms of the tax from which to choose (see chapter 1). Nevertheless, this consideration of the VAT and financial institutions is confined largely to those issues in the taxation of financial services under one particular type of VAT: the EC type of tax that is (a) extended through the retail level, (b) imposed on consumption only, (c) collected through the tax credit method, and (d) levied on the destination principle. Restriction of the scope of the discussion in this way is justified for three reasons.

First, important issues in the tax treatment of financial services ordinarily do not arise or are unimportant under preretail types of VAT (that is, VAT applied at the manufacturing or wholesale stage) such as those employed in Indonesia after 1984 and in Colombia before that date. This is particularly true in the case of consumer banking services, life insurance services, and pension funds, less so in the case of casualty insurance. For example, under a VAT that is extended only through the manufacturers' level, banking institutions would not be defined as taxable manufacturers. In any case,

the fact that no component of interest paid to banks is subject to VAT is immaterial where registered firms are concerned: interest is an element of value added by manufacturing firms, as will be discussed later. Furthermore, to the extent that purchases of life insurance services represent consumption, this service is rendered essentially to final consumers and is therefore best seen as a retail activity. Exclusion of casualty insurance services from a preretail VAT does give rise to problems, since in developing countries a high proportion of these services tend to be rendered to taxable manufacturing firms—if the Indonesian experience is typical. But this is merely one of the unavoidable costs of operating a preretail VAT. On balance, there are few good reasons for including financial institutions in the base of a preretail VAT.

Second, the EC type of consumption VAT has been overwhelmingly the VAT of choice for the 25 or so developing countries that now operate a VAT, and there are good economic and administrative reasons for that choice (see chapter 1).

Third, other alternative methods for imposing VAT, including the addition method, have never been successfully implemented by a central government anywhere, and the lone attempt to apply a special addition VAT to financial institutions was abandoned after five years of disappointing experience in Israel.

Neutral Tax Treatment of Financial Services under a VAT

There is no reason to presume that neutrality should be the overriding goal of tax policy. Governments may and often do make deliberate departures from neutral tax treatment of certain sectors of the economy, including the financial sector, to achieve other policy goals. Departures from neutrality, however, may involve costs both in economic efficiency and in administration and equity. That the conditions for neutrality be portrayed as clearly as possible to make these costs as transparent as possible is therefore essential so policymakers can weigh them against presumed gains from nonneutrality —including possible gains in efficiency. It is thus necessary first to identify conditions for neutral treatment of financial services under a VAT and, second, to determine whether neutral treatment is administratively feasible (given present technology) in both developed and developing countries.

Conditions for neutrality. Neutral taxes are not necessarily efficient taxes or optimal taxes.[8] A neutral tax is defined as one that does not lead to material changes in the structure of private incentives that would prevail in the absence of the tax. Although it is not nearly as intellectually satisfying a guide to tax policy as optimal taxation, neutral taxation is to be preferred as a benchmark until such time as analysts are able to identify optimal departures from neutrality in real-world policy settings and until such time as administrative capacities are equal to the task of operating necessarily complicated optimal tax structures. In both developed and developing countries that time is not likely to arrive before the twenty-first century.[9]

Consumption taxation requires taxation of all expenditure for personal consumption. Neutrality under a consumption-type VAT will be interpreted to require uniform taxation of all such current expenditure.[10] Any divergences from neutrality thus defined would be gladly accepted by most decisionmakers in developing countries, whenever these divergences can be shown to satisfy the goals of optimal taxation at acceptable costs of tax administration and compliance. It is therefore reasonable to establish that neutrality in taxation is a less than hallowed concept and that optimality in taxation is less than practical under existing technology and institutions.

Neutral treatment in applying a VAT to the financial sector involves four principal features:

- Neutral treatment of financial services relative to other taxable goods and services
- Neutral treatment as among all types of financial institutions
- Neutral treatment between firms that specialize in financial services (banks, insurance companies) and other firms that do not specialize in finance but that offer financial services as complements to their principal activities (trade credit offered by wholesale houses and manufacturers, factoring and leasing firms, and the like)
- Neutral treatment between domestic and foreign suppliers of financial services, and, particularly, avoidance of unintended discrimination against maturing (infant industry) domestic financial institutions.

Full neutrality thus defined is, at least for now, not feasible under any administerable VAT. Let us see why.

Difficulties in achieving neutrality. The principal sources of difficulty in achieving neutral treatment of financial services under a tax credit consumption-type VAT have to do with (a) problems in defining the value of taxable financial services, (b) the degree of substitutability among different types of financial assets and services, (c) the openness of the domestic economy, particularly when capital is mobile internationally, and (d) administrative capacities.

The problem of defining financial services has two phases: first, to identify the service element in financial

payments by and to financial institutions; and, second, to isolate the consumption element in financial services thus identified.

The taxable component of most nonfinancial services can be defined easily: the value of legal, advertising, and barber services is measured by gross sales value. Value added in such services is defined as gross sales minus purchases from other firms. But the gross value of payments from and to financial institutions is generally not a good measure of the monetary value of the service rendered. Further, the service component of many payments to these institutions for the financial services they render is rarely identified as a separate, freestanding charge to customers.

Consider first the case of banks. The core activity of banks is financial intermediation. Determination of the value of secondary financial services is not at issue: for secondary services such as safe deposit box rentals, the value of the service is the amount of rental paid, whereas ascertaining value for such other secondary services as free checking accounts is more difficult.

For banks, the value of loan repayments is not a measure of the value of the service to the borrower; the repayment consists of both nominal interest paid by the buyer and amortization of principal. Amortization must clearly be excluded in determining the value of the service. But what about interest paid by borrowers? Does this measure the value of the service provided by the lender quite apart from the fact that (when inflation is anticipated) nominal interest rates are inclusive of inflation? Interest charged by banks must cover not only the costs of deposits but also the gross margins of banks. Interest paid on deposits is clearly investment income to the recipient, not a component of services provided borrowers. The service element in bank lending then is the gross margin of the bank: this consists of intermediation costs plus profits associated with financial intermediation. This is a small fraction of total debt service, even in developing countries.

For loans to business firms registered for VAT, the entire discussion is largely irrelevant. Interest expenses of registered firms are part of their value added, and this value added is taxed at the level of the firm. It would therefore be inappropriate to tax any component of interest received by banks from registered firms. Therefore, the value added tax base for banking services would, at most, be the gross margins of banks in their lending to households and nonregistered firms.

Neither the value nor the value added in insurance services is measured by the gross premium paid by policyholders. In the case of casualty (accident) insurance, consider a simplified insurance arrangement under which ten people cover their risks of accidents by each paying a premium of $100 into a common pool. Administering this pool costs $50, net of any interest earnings on the pool. The arrangement provides that a total of $950 will be paid to the first one of the ten who suffers an accident. It is clear that neither the premiums nor the payment of the claim represent value of the service. Rather both are transfers of money. The value of the service in this case is the cost of administering the pool: the cost of getting the money to the victim, where it is most needed. The loading charge, or net premium, is $50. The loading charge is merely the excess of gross premiums over and above amounts required to cover losses (pay claims). The loading charge for each policyholder is $5. The value of the service to each is also $5. Had the pool paid out only $900 instead of $950 to the victim, the loading charge would have included both the expenses and the profit of the pool. The value of the service would then have been $10 per policyholder. This is also the value added by the insurance activity.[11]

The case of life insurance is only slightly more complicated. Services under pure term life insurance policies are analogous to that in the simple illustration for casualty insurance. But for whole life policies, part of the premium represents an addition to savings of the policyholder. The value of the insurance service is clearly again the loading charge of the company, which consists mostly, but not wholly, of wages and salaries. In both casualty and life insurance it is clear, however, that value added is present in the supply of the service. The existence of value added in an activity, however, does not necessarily imply that it can be easily taxed.

It is apparent, then, that in principle the service element in financial transactions can be defined. And taxation of financial services rendered to business firms registered for VAT involves no problems by itself, since any VAT paid by them on purchases becomes a credit against taxes due on sales. Services rendered to households, however, do present problems. A consumption VAT is meant to be confined to personal consumption. It is not altogether clear that household outlays for all types of financial services represent consumption.

That there is both value added and an identifiable service element in bank lending to households (the gross margin of banks) does not imply that all such services are consumption in nature. Services involved in mortgage lending to households may be viewed as having both a consumption and an investment element. What proportion of the service should be taxed as consumption? The appropriate answer probably lies somewhere between zero and 100 percent, depending upon one's point of view. It should be noted however, that any purchase of an investment good by a nonregistered entity, including households, carries with it a value added tax burden. If the VAT rate were 10 percent, then if a household, for example, buys a lathe to make

furniture for the home, the price paid for the lathe will include a 10 percent VAT element.

Classification of insurance services into consumption and investment presents vexing problems that cannot be resolved here. Purchase of an insurance contract by a household might be viewed as consumption: the household could be viewed as consuming the benefits of reduced future fluctuations in income. But other considerations argue in favor of treating at least some insurance services not as consumption but as investment.

Under ordinary term life insurance, a policy is purchased to cover risks of death over a specified period, say, five years. The premium is fixed for the whole period, and there is no buildup of savings; the policies have no cash value to the policyholder. Although term life insurance policies are not nearly so widespread in developing countries as in, say, the United States or Canada, the cost advantages of term relative to whole life will not likely go long overlooked there.

A purchase of a term life insurance contract involves essentially a transfer of wealth from the policyholder to the beneficiary. Payment of the premium by the policyholder reduces the lifetime consumption of goods and other services for the policyholder and increases the lifetime consumption possibilities of the beneficiary; the beneficiary's inheritance would be taxed under the VAT. It would seem, then, that inclusion of term life insurance in the base of the VAT would amount to double taxation.

Like term insurance, whole life insurance provides pure insurance protection. But unlike pure term insurance, whole life also provides investment income to the policyholder. The yearly increase in the cash value of this income adds to the net worth of the policyholder; it cannot, then, be defined as consumption.

In most developing countries most casualty insurance contracts are likely to be purchased by businesses, not households. Forward-looking tax policy should, however, take into account the possibility that household purchase of casualty insurance may eventually be as widespread in these countries as in industrial countries. Taxation of casualty insurance services rendered to business firms presents no great problems except as noted in the following. Again, taxes paid on purchases may be credited against taxes due on sales. Households are again the source of difficulty. It could be argued that casualty losses do not reduce households' VAT liability, since casualty losses reduce net worth rather than consumption. That being the case, it might be argued that net premiums (loading charges) paid by householders for casualty insurance should be taxable under a VAT.

It should be recognized, however, that for casualty losses on such household assets as automobiles or other durable consumer goods, restoration of the asset would result in spending that would be taxable under the VAT; the same would apply to housing if the VAT base included housing. Would this then mean that taxation of net premiums for casualty insurance coverage would constitute double taxation? This question cannot be resolved here.

Substitutability of financial assets and competitiveness in financial markets. Where there is not a high degree of substitutability among financial assets and where competition among different types of institutions is weak, there may be justification in aiming only at rough justice in the design of VAT policy toward financial institutions. In such circumstances the fact that application of a VAT (or exemption from a VAT) provides a small competitive disadvantage to one segment or one asset in the financial system (say, insurance companies or savings banks) will not result in large shifts in financial resources away from the disfavored segment and toward favored segments.

In developing countries with shallow financial systems and with relatively closed economies, less well-developed financial sectors would be expected than in countries with deep financial systems. A limited range of financial assets and limited competition among financial institutions are hallmarks of shallow finance. Nonneutral treatment of different types of financial services will not per se cause much additional damage in such circumstances.

But in countries with deep financial systems, a richer variety of financial assets, more types of financial institutions, and greater competition among them for savings will ordinarily be expected. Where different financial assets are reasonably close substitutes, and where competitiveness prevails, even a small arbitrary tax advantage to one type of asset may cause large shifts of funds into that asset and into the institutions that specialize in offering it. For example, life insurance services may be easily taxed when the industry is highly concentrated, as in Indonesia, but if pension funds and investment management companies faced slightly more favorable VAT treatment, large flows of resources might be drawn from life insurance companies. If banking in developing countries becomes more and more open and competitive, then to the extent that assets can be more easily tailor made by different types of institutions to fit the needs of the public, favorable tax treatment under VAT can cause funds to shift.

Openness and international capital mobility. The difficulty of attaining even rough neutrality of treatment of financial institutions under the VAT increases with the degree of openness of the domestic financial sector and with the international mobility of capital.

With open capital markets and international capital mobility, inappropriate tax treatment of financial ser-

vices under a VAT may induce movements of capital out of the taxing country.[12] It also may reduce the ability of maturing (infant-industry) financial institutions in developing countries to compete with foreign banks and insurers, particularly in their own domestic markets. In such circumstances, even a relatively small amount of additional VAT burden could result in some disadvantages for domestic banks and insurance companies competing with foreign financial institutions in the domestic market, even if exports of financial services are zero-rated. This is because although under the destination principle imports of financial services are nominally subject to a VAT, such imports are not easily detected, let alone taxed, in any country.[13]

The principal concern for most developing countries then is not whether inappropriate application of a VAT will hinder the ability of their maturing financial institutions to compete in external markets, although this possibility would be a source of concern for such higher-income nations as Singapore, Hong Kong, Malaysia, and Korea in the near future and perhaps for Brazil, Argentina, and Colombia in the more distant future. For middle-income countries such as Indonesia, which are not likely to become international financial centers soon, the main concern should be the possibility that inappropriate VAT treatment of financial institutions will provide a competitive edge, however small, for foreign banks and insurers over struggling domestic financial firms.

To the extent that developing economies are closed and to the extent that international mobility of capital is slight, such countries considering adoption of a VAT may safely ignore the possible implication of a VAT both for competitiveness of domestic financial institutions and for capital flows.

Indeed, capital controls, both explicit and implicit, abound in the world economy, and particularly in developing countries. Explicit controls are defined as restrictions on inward and outward movements of foreign exchange, usually in the form of limitations on purchase of foreign exchange by residents for purposes of international trade policy. Implicit capital controls include laws and regulations unrelated to trade policy that nevertheless limit the domestic holding of use of assets denominated in foreign exchange. Kimbrough and Greenwood (forthcoming) find that explicit controls on the international movement of capital existed in 72 percent of the member countries of the International Monetary Fund (IMF) throughout the entire five-year period 1978–82, whereas only 19 percent of IMF members had no explicit capital controls at all during the period. Furthermore, even in countries that use no explicit capital controls, implicit controls may hinder international mobility of capital.[14]

These observations suggest that the international mobility of capital may be limited. There are, however, other considerations that lead to quite different conclusions. First, the fact that explicit (and implicit) controls on capital are widespread, particularly in such developing countries as India, Pakistan, and Ghana, is not any indication that the controls are effective in limiting international mobility of capital.[15] In any case, presumptions that capital controls are administered with anything close to 100 percent effectiveness lack any significant empirical support. Second, there is a small but growing body of empirical evidence that suggests a fairly high degree of international mobility of capital, as attested by the work of Harberger (1980), Summers (1985), and Hartman and Firsch (1981).[16] Third, not all developing countries employ explicit capital controls. Indonesia, for example, has not used explicit foreign exchange controls of any kind since 1970.

Fourth, even the presence of implicit controls does not necessarily restrict the ability of foreign financial institutions to operate in domestic markets. For example, foreign firms wrote 75 percent of all nonlife insurance and 25 percent of life insurance issued in Canada in 1980 (Shearer, Chant, and Bond 1984, p. 229). Foreign insurance firms have gained the largest share of the total insurance business in Indonesia in spite of laws forbidding foreign equity ownership in insurance and in spite of ostensibly tight limitations on foreign participation in reinsurance. And although foreign banks are required by law to limit their operations to the capital city of Jakarta, this restriction did not prevent the Jakarta branches of American banks from becoming large profit centers of the worldwide operations of the parents in 1971–81.

In sum, it appears unwise for any developing country to frame a VAT policy toward financial services under the assumption that the effects of the tax on international capital flows and domestic competitiveness of financial institutions can be safely ignored.

Possible Options for VAT Treatment of Financial Services

Like their counterparts in Europe and New Zealand, tax authorities in developing countries face three principal options for the VAT treatment of financial services:

- Full taxation, with VAT credits on inputs
- Exemption, with no credits
- Zero-rating, also known as exemption with full credits.

The complexities involved in achieving neutral treatment of financial services when all are subject to a VAT has led all EC countries, New Zealand, Korea, and most Latin American countries to adopt the second option, exemption. This choice has been dictated by expedi-

ency. Exemption violates all four conditions for neutrality outlined in the preceding section. No country has gone so far as to zero-rate all financial services, largely for fear of revenue loss. Virtually all countries with a VAT, however, do zero-rate the export of financial services.[17]

Banking and insurance issues need to be discussed separately: although common problems affect VAT design toward both, several other difficulties call for separate discussion.

Banking Services

The full-taxation option. In only one country has there been strong sentiment for application of a VAT to the full price of core banking services.[18] The government's advisory panel on GST in New Zealand proposed this option, which was rejected by the government (Advisory Panel 1985, pp. 6–9).

The merits of full application of a VAT to financial services—when these are properly defined—are not inconsiderable. First, full taxation generally brings in greater VAT revenues than other alternatives. Further, this option would best satisfy all four neutrality conditions. When financial services are appropriately defined, full taxation preserves neutrality between financial services and other goods and services, between different kinds of financial institutions, between these institutions and nonspecialized providers of financial services, and between domestic and foreign suppliers of financial services (assuming zero-rating of the latter). Indeed, some financial institutions and retailers in New Zealand strongly favored the full-taxation over the exemption approach (Advisory Panel 1985, p. 7).

Other considerations suggest the need for great caution in applying the full-taxation approach. Taxation of interest paid by registered firms to banks is both unnecessary and anomalous under a retail-type tax credit VAT. Value added of firms is defined as receipts from the sale of goods and services minus purchases of other goods and services from other firms. Interest enters in the calculation neither as minuend nor as subtrahend. Rather, interest paid by registered firms to banks is a constituent of the remainder; it is in fact part of the value added of firms and is taxed at that level.

Full taxation of banking services provided to nonregistered firms and to households might, however, be advisable on grounds of both neutrality and revenue. But this approach also encounters problems. First, if transactions with nonregistered firms and households were the only taxable transactions for banks, banks would have to distinguish carefully between transactions of this type and those with firms registered for VAT. This could result in significant difficulties in compliance, particularly since nonregistered firms tend to be a higher proportion of all firms in developing countries than in industrial countries (Due 1984, pp. 202–03). Also, except in the unimaginable situation in which households and nonregistered firms were made responsible for withholding VAT on their sales to banks (deposits in interest-bearing accounts), banks would have to be required to collect and remit VAT on both their "purchases" (deposits) and their "sales" (interest-bearing loans), a requirement that would be at the least unusual for a VAT. Taxation of bank loans to households and nonregistered firms would also create incentives for financial disintermediation: persons would be faced with incentives to borrow from sources other than banks and financial institutions (U.S. Treasury 1984, p. 51; Advisory Panel 1985, pp. 9–10).

Second, the full-taxation approach, even when confined to transactions between banks on the one hand and households and nonregistered firms on the other, involves transitional problems not encountered under either the exemption or the zero-rating options. Application of a VAT to all loans to these groups would cause banks to suffer windfall losses on existing loans and would also involve enormous difficulties in compliance (Advisory Panel 1985, p. 29). Either intricate phasing-in provisions would be necessary or the VAT would have to be limited to financial contracts consummated after the effective date of the tax.

Third, there is the issue of first defining the value of financial services and then deciding which definable services are to be considered as consumption. The nominal interest rate, as noted earlier, is not a good measure of the value of banking services provided in loans, particularly since a portion of the nominal rate reflects compensation for inflation risks assumed by banks. The value of the service provided by lenders is, arguably, measured by the costs of transferring funds from savers to investors: the costs of financial intermediation. In the United States, these costs, measured roughly by commercial bank spreads, may be as low as 1 to 1.5 percent of the amount of bank loans, but they are at least twice as high in most developing countries (Gillis and others 1983, p. 362). In any case, the value of the service rendered will ordinarily be a small fraction of the nominal interest rate.

The exemption option. Exemption of banking services is fraught with problems. Exemption means only that the sales of the exempted service are not subject to tax; firms supplying exempted services, however, pay tax on their purchases. Banking services provided to registered business firms are exempt (as opposed to zero-rated); value added at the exempted banking stage is recaptured for tax purposes in sales at the registered

business stage because there are no VAT credits to applied from purchases from financial institutions.

If this were the only effect of exempting banking, few problems would arise. But in addition, the registered business firms bear (under usual forward-shifting assumptions) the tax paid by the exempt banks on their purchases. Thus, when a registered nonfinancial business firm sells to a final consumer, a VAT is due on its sales, unreduced by any credits arising from application of VAT to banking services. As a result, final sales of products sold by firms using exempt banking services will be taxed more heavily than if banks were fully taxed.

The amount of VAT not allowed as credits under the exemption option may be considerable. Brannon (1986) estimates that in the U.S. financial sector, for example, purchases from other firms account for as much as 20 to 30 percent of value added (loading). Therefore, if financial institutions were exempt from a VAT, they would still bear 20 to 30 percent of the full VAT because they would receive no credits (refunds) on their taxable purchases from other firms.

Exemption involves other nonneutralities as well as difficulties in administrative compliance. First, exemption would probably place domestic banks at some disadvantage relative to offshore banks, even if exports of financial services were zero-rated. Banks from other VAT countries of course benefit from zero-rating of their offshore activity, and the United States does not yet have a VAT. Therefore, in the domestic market the services of home banks would appear less attractive to borrowers, given the difficulty of applying VAT to imports of all financial services, which may be easily concealed.

Second, exemption provides financial institutions with incentives to produce intermediate goods themselves (in-house computing, printing, and advisory services) rather than purchase these inputs from specialized firms, with consequent loss in efficiency.

Administrative problems abound in the exemption option. First, exemption tends to create complicated apportionment problems for firms supplying both taxable goods and services and exempt financial services. Any VAT paid on inputs would have to be apportioned to ensure that such firms do not claim credit for taxes paid on inputs used in the provision of exempt banking services.

Second, exemption makes the VAT highly vulnerable to sophisticated tax evasion devices (Advisory Panel 1985, pp. 4–5). With exemption of domestic transactions and the usual zero-rating of export transactions, customers of financial institutions would quickly discover how to secure nontaxable financial services from offshore affiliates of domestic banks. For example, a bank in a developing country that uses the exemption option for domestic banking services could first lend to an offshore affiliate. This would be deemed a zero-rated export transaction. The offshore affiliate would then lend to the customer in that country. With domestic financial services exempt, tax would not apply on the transaction and refunds would have been paid on all input taxes of the domestic bank that lent to the offshore affiliate. These and similar kinds of offshore arrangements are not uncommon even in non-VAT countries in Southeast Asia and the Caribbean. A VAT in which financial services were exempt would enhance the attractiveness of such practices, thereby substantially reducing any revenue that otherwise would be gained by the exemption option (relative to zero-rating).

The zero-rating option. There are two principal disadvantages of zero-rating of banking services. The first and most obvious is the revenues that would thereby be forgone. We first compare revenue loss from zero-rating with that associated with exemption. Suppose that taxable purchases from other firms are as high as 20 to 30 percent of value added by banks (as in the United States). In a middle-income country such as Indonesia, where value added in the financial sector (banking plus insurance) is 7 percent of gross domestic product (GDP), revenues under exemption of all financial services would amount to no more than 0.02 percent of GDP at a VAT rate of 10 percent. Zero-rating, then, would involve, at most, a revenue loss of 0.02 percent of GDP, assuming 100 percent collection efficiency under the exemption option. And actual revenues under the exemption option would likely be considerably smaller because of the availability of offshore devices for avoidance of taxes.

Revenues from a fully collected, perfectly administered 10 percent VAT on financial institutions would be about 0.7 percent of gross national product (GNP) for a country such as Indonesia. This is not a trivial number, but then again to assume perfect administration is to overstate actual revenue potential. In countries with relatively large financial sectors, however, the revenue consequences of zero-rating could be quite significant. For the United States Brannon (1986) estimates this loss at 9 percent of the yield of a hypothetical broadly based VAT.

The main problem involved in zero-rating is administrative in nature. The tax systems of many developing countries are not well geared to operation of rebate structures, whether for zero-rating of financial services or for exports. But inasmuch as a rebate system will have to be devised and operated for exports in any case, the incremental costs of applying zero-rating to financial services should not be too great, particularly given the relatively small number of financial firms in most countries.

Insurance Services

Choices regarding the tax treatment of insurance services are somewhat more clear-cut than for banking.

The full-taxation option. Full taxation of insurance services involves certain administrative and conceptual difficulties but may still be advisable for some kinds of insurance. This is particularly true for nonlife insurance services, which in developing countries are provided primarily to registered business firms. Taxation of these services under a VAT would give rise to credits for firms purchasing insurance. By itself, this presents no great problems.

There remains the issue, discussed earlier, of defining the value of insurance services in general and deciding which types of insurance services rendered to households are properly classifiable as consumption. Clearly the full value of the premium is not the appropriate measure of the value of the service. The best measure of this value is the net premium, or the loading charge. But it is not entirely clear that purchase of life insurance services represents consumption that should be taxable under a VAT. This issue, however, cannot be resolved here.

Taxation of insurance services, however these services are measured, does involve some risks because of the openness of the sector and because of the apparent mobility of international capital. Exports of insurance services, if any, would of course be zero-rated. If it is clear that imports of insurance services can be fully taxed on the same basis as that applicable to domestic insurance services, then taxation of insurance premiums will not result in any significant competitive disadvantages for domestic firms. It is not altogether obvious, however, that imports of insurance services can be easily detected, let alone taxed.

Exemption. Exemption of insurance services would give rise to the same types of problems with uncredited VAT on inputs as in banking. And, particularly with regard to the ability of domestic insurance firms to compete in the domestic market with foreign firms, full taxation is preferable to exemption.

Zero-rating. Here again, zero-rating involves the disadvantage of revenue loss. But given the small present size of the insurance sector in most developing countries (less than 2 percent of GDP in Indonesia, for example), the losses would not be large. Zero-rating also involves some additional administrative demands, including that of providing rebates to insurance firms, which, however, are not numerous in most developing countries. Finally, zero-rating would favor somewhat the purchase of insurance services relative to taxed goods and services.

Conclusions

Apart from administrative considerations, the best option for the VAT treatment of financial services is likely to be that of zero-rating. This option violates only one of the conditions for neutrality, whereas exemption violates all four. In addition, zero-rating of exports of financial services will be required in any case to implement the destination principle. If a rebate structure is required for this purpose and to accommodate new and rapidly growing firms, provision of rebates to the relatively small number of firms in the financial sector should not engender significant complications.

The revenue consequences of zero-rating of financial services also are not likely to be consequential in most developing countries that are considering an EC kind of VAT, whereas this is not the case in Canada, the United States, or Europe.

Moreover, the administrative and definitional problems involved in both the full-taxation and the exemption options appear to be at least as formidable in the context of developing as in industrial countries. Zero-rating is not, however, without its own administrative problems, but these are by no means insurmountable.

Finally, zero-rating is also most supportive of financial deepening in developing countries, an important consideration in countries in which the financial sector is expected to shoulder a substantial share of the task of mobilizing resources.

Complete exemption of all financial services is arguably the most unsatisfactory solution of all for developing countries, on almost all counts. Full taxation of all services is at least tolerable, provided the value of taxable services can be appropriately defined and provided there is some assurance that imports of financial services will be effectively taxed. Neither proviso is likely to be satisfied in these countries.

If zero-rating of all financial services is deemed impossible on administrative grounds, consideration might be given to the following alternative schemes:

- Full taxation of all nonlife insurance on grounds that this is provided primarily to registered firms in developing countries. VAT paid on such services would be fully creditable against taxes due on sales of registered firms.
- Zero-rating of bank transactions with registered firms on grounds that full taxation of such activity is unnecessary under a VAT since interest expenses constitute a part of value added of taxable firms.
- Exemption rather than zero-rating of the value of life insurance services on grounds that these services are provided primarily to individuals and that exemption is not likely to erode significantly

the ability of life insurance firms to compete with foreign firms—provided that net, not gross, premiums are taxed.

- Exemption of banking services provided to households and nonregistered firms on administrative and compliance grounds.

This last alternative is not in any sense preferred; it merely represents the maximum concessions that could be made to expediency and are consistent with openness, financial deepening, and administrative constraints.

Finally, issues in application of a VAT to financial services have been examined here in isolation from other questions of VAT design. But resolution of these other issues may have an important bearing on the advisability of selecting one or another option for the tax treatment of financial services. For example, if all housing services are included in the base of a VAT, zero-rating of all intermediation costs in mortgage lending to households may be not only justified but required for neutral treatment of housing. But, as is more likely, VAT coverage of housing services is deficient because of practical difficulties in taxing imputed rent in owner-occupied housing, and exemption or full taxation of mortgage interest may be indicated as one means of redressing VAT discrimination in favor of consumption of housing services (see chapter 8).

Notes

1. Complex questions are involved in the tax treatment of reserves for bad debts of banks, foreign exchange gains and losses of banks, reserves of insurance companies, the taxation of income from reserves of pension funds, the tax treatment of mutual relative to stockholder-owned insurance companies, and limiting the scope for transfer pricing by banks through such devices as related party loans. See, for example, Aaron (1984).

2. For a clear discussion of the features of a consumption-type VAT of the tax credit type imposed on the destination principle, see chapter 1.

3. The term "deep finance," or "financial deepening," is usually attributed to Shaw (1973). Financial deepening refers to growth in the *real* size of the financial system, as measured, for example, by the ratio of liquid assets to gross national product. The essence of deep finance is avoidance of sharply negative real rates of interest.

4. See chapter 1 for a full description of the subtraction and addition methods of imposing a VAT.

5. The special addition-type VAT applied to a broad variety of financial institutions, including not only banks and insurance companies but companies or cooperative societies receiving money on current account and withdrawable by check, and "any class of persons as determined by the Minister of Finance" (Diagnun 1984).

6. Exemption of financial services increases the difficulties of compliance because many firms in New Zealand provide both goods and financial services. For such firms, exemption of financial services would require difficult apportionment problems for VAT paid on inputs for many firms, particularly those which extend credit as part of a normal sale (Advisory Panel 1985, pp. 4 and 5).

7. R. O. Douglas, minister of finance, "Report Prepared on GST and Financial Services," August 22, 1985.

8. An efficient tax system is one that involves a minimum of deadweight loss (excess burden) for raising the required amount of revenue. An optimal tax system pursues goals of both equity and efficiency; optimal tax analysis focuses on the tradeoff between equity objectives and the deadweight efficiency costs of raising a given amount of revenue. In general, either an efficient tax system or an optimal VAT system would involve different rates of tax on different goods, with tax rates inversely proportional to their demand elasticities. Quite clearly, neither a neutral tax structure, and in particular a uniform structure of tax rates clearly satisfies the requirements for efficient or optimal taxation. The informational and administrative requirements for imposing a set of optimal taxes across any economy are, however, so great under present technology as to preclude its practical application. For a thorough survey of modern theories of excess burden and optimal taxation, see Auerbach (1985).

9. For a more optimistic view on how the tenets of optimal taxation can be applied, or at least considered, in a developing country, see Newbery and Stern (1987).

10. Uniform taxation of all current consumption expenditures will not, however, be neutral in its effects on the choice between present and future consumption, except under very special conditions. See McLure (1980).

11. The outlines of this example are from Brannon (1986).

12. This will be more likely in a world in which (a) VAT nations zero-rate exports of financial services; (b) VAT nations do not impose special indirect taxes on financial institutions; and (c) non-VAT nations do not impose sales or excise taxes on financial services. The first condition prevails almost universally among VAT nations. The second condition does not prevail universally in insurance services; many EC countries, for example, impose special indirect levies on insurance. The third condition prevails in the United States and Canada, both non-VAT nations; practices in other non-VAT nations vary considerably.

13. Competitive disadvantages to domestic financial institutions will of course not occur to the extent that the equivalence theorem applies. This theorem holds that any competitive disadvantage for domestic firms arising from unrebated taxes on exports and untaxed imports will be vitiated by subsequent depreciation of the exchange rate, restoring the previous pattern of incentives to export and import. But the equivalence theorem applies fully only under a set of very restrictive assumptions, including (a) freely fluctuating exchange rates, (b) no international capital flows, (c) initial balanced trade between countries, and (d) no net transfer payments between nations (Shoup 1969, p. 205). In particular, then, competitive disadvantages to domestic financial firms could easily result from either full application of a VAT or a VAT exemption. Only zero-rating of financial services would ensure that this would not occur.

14. For example, Feldstein and Horiaka (1980, p. 328) identify several kinds of institutional restrictions that amount to implicit capital controls. In the United States, these include laws that require savings institutions to invest in local real estate, and the "prudent-man" rules governing many pension funds that deter them from investing abroad.

15. Long-standing capital controls in Colombia (before 1968), India, Argentina (before 1979), and numerous other countries did not prevent the buildup of large resident-owned foreign currency holdings outside these countries. Presumed

stringency of capital controls did not prevent Indian multinational firms from exporting substantial capital while becoming significant foreign investors in Southeast Asia before 1975 (Wells 1977).

16. After finding that rates of return in different countries are basically uncorrelated with the capital-labor ratio, Harberger (1980) concludes that "there must be some force operating to prevent such a correlation from emerging, and the most natural explanation was that the world capital market was alive and well in Zurich." The Harberger sample of countries included both developed and developing nations. Summers (1985) found significant evidence of a high degree of international capital mobility in a study embracing 115 countries, including both developing and OECD countries. The results were almost unchanged when the OECD countries were excluded from the sample. Hartman and Firsch (1981) found that foreign direct investment is very sensitive to tax rates in host countries, a conclusion also difficult to reconcile with capital immobility.

17. In the EC, however, it is more common to find zero-rating only for export of financial services outside the EC. The United Kingdom and Ireland in the EC, however—as well as Sweden and New Zealand outside it—zero-rate all exported financial services.

18. It is taken for granted that a VAT will apply to secondary banking services.

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8

The VAT and Real Estate

Robert F. Conrad

The tax treatment of housing and housing services is said to be one of the more difficult aspects of developing a value added tax system that can be administered cost-effectively.[1] This chapter examines problems in the treatment of housing and housing services under a value added tax, the current situation in Europe, and a proposed alternative, the stock value added tax (S-VAT). It is shown that the S-VAT creates no additional economic incentives beyond those that arise from a pure value added tax, that it can be administered effectively, and that it can be used in a variety of contexts.

Problems of the Treatment of Real Estate under a VAT

In theory, a value added tax should reach all consumption activities in a given period of time;[2] the impact (not the incidence) of the value added tax is designed to tax the flows of consumption in each time period. Flows of inputs used to produce consumption flows are exempt, as are stocks that embody future flows.[3] This implies that the tax should be applied on consumption, not on purchase. In reality, only a few goods and services—electric power, restaurant meals, hotel stays, and the like—can be taxed at the time of consumption, and the date of purchase is generally used as a proxy. For many consumption expenditures, however, the date of purchase does not correspond to the period of consumption; examples are consumer durables such as stoves and cars, occupied housing, and the purchase of land for housing or for investment. Real estate thus falls into a large group of long-lived stocks. In theory, there is no reason to treat housing differently from other long-term consumer durables.

A number of problems arise in the appropriate and feasible application of a value added tax to real estate. First, if all real estate were rented, the value added tax could be applied straightforwardly, but a segment of housing is owner-occupied and changes hands infrequently. It is not the long-term nature of housing by itself that generates concern about the application of a value added tax; the administrative difficulties stem from the combination of long life and the absence of regular market transactions between taxable parties.[4]

Second, the same real estate can be used for the production of goods and services by taxable firms or for final consumption. Since the value added tax is intended to tax only the current consumption value of real estate, mechanisms are necessary to ensure that taxable firms receive the credit (if the credit system is used) and that only consumption is taxed.

Third, real estate is used for both consumption and investment.[5] A significant share of the net worth (or savings) of individuals in any economy is held in the form of housing stocks and land. An ideal value added tax would distinguish between the consumption benefits and the investment benefits of real estate ownership.

Finally, there are the administrative difficulties of taxing small housing construction firms and small rental firms with few properties; the practice of self-construction, whereby consumers avoid paying tax on the labor component of the value added if all other inputs are taxed; and the question of taxing real estate agents who sell to both consumers and firms. The problems with respect to real estate firms are not directly

Table 8-1. *Value Added Tax Treatment of Real Estate Sales in the European Communities*

Country	Building land	New buildings	Old buildings
Belgium	Exempt 1	Exempt 1, 2	Exempt 1
Denmark	Exempt 3	Exempt 3	Exempt
France	Taxable	Taxable	Exempt 1
Germany, Fed. Rep. of	Exempt 1	Exempt 1	Exempt 1
Ireland	Taxable 2	Taxable 2	Taxable 2
Italy	Taxable	Taxable	Taxable
Luxembourg	Exempt 1	Exempt 1	Exempt 1
Netherlands	Exempt 1	Taxable	Exempt 1
United Kingdom	Exempt	Zero-rated	Exempt

Notes: 1-sales are exempt from value added taxation but are subject to other duties and transfer taxes; 2-sales are taxable if certain conditions apply; 3-services associated with real estate (such as construction) are taxable.

related to the taxation of housing, since the services of realtors can be observed and taxed, but have to do with how housing is handled under a value added tax. If real estate is not taxed (or if only new construction is taxed), no credit is available to realtors who hold housing inventory.

The Situation in Europe

The treatment of housing and real estate is covered by the Sixth Directive, May 17, 1977, of the Council of Ministers of the European Communities.[6] Under these rules the sale of real estate (including housing and land) is treated as a supply of goods and the leasing or letting of land and housing may be treated as a supply of goods or of services. The directive's definition of taxable persons can be applied to those who engage in certain transactions even on an occasional basis (Timmermans and Joseph 1980). Thus, in principle all transactions pertaining to real estate (even by owner-occupiers) can be subject to value added taxation.

Sales of Land and Real Estate

When real estate is regarded as a supply of goods, it receives special treatment. In particular, real estate sales are subject to value added taxation only if two conditions are satisfied: the building (and the land on which it stands) is new, or the land is building land, and the supplier is "carrying out such transactions within the scope of this trade or business"—that is, real estate (Timmermans and Joseph 1980, p. 74).

These conditions imply that member states may (but are not required to) tax sales of new buildings by sellers whose regular trade or business is not real estate. If the two conditions are not satisfied, the sale of real estate is exempt. In effect, the Sixth Directive allows states to tax new construction but not existing buildings of any type. Because of the exemption, the directive allows states to impose a value added tax on old buildings and land if both parties to the transaction opt for that treatment. The buyer then claims the credit for the purchase. This option, however, is not available to nontaxpayers; for example, an owner-occupier who sells an old house is not subject to the value added tax even if the purchaser is a taxable business.

Table 8-1 summarizes practices in individual countries. Some specific provisions are of interest.

- In Belgium, France, the Federal Republic of Germany, Luxembourg, and the Netherlands land and buildings that are not subject to value added taxation are subject to registration duties (turnover taxes).
- In Belgium persons who sell new buildings on a regular basis pay the value added tax.
- In Denmark all real estate transactions are exempt, but services associated with real estate (such as construction) are subject to value added taxation.
- In Denmark, France, Germany, Luxembourg, and the Netherlands transactions that would otherwise be exempt are taxable on an optional basis.
- In France the sale of building land (when the land is subdivided, even for own use) is a taxable event.
- In Italy all transactions in real estate, both new and old, are taxable, with the exception of land other than building land.
- In Luxembourg new buildings are exempt.
- In the United Kingdom nonexempt transactions may be zero rated.

Letting and Leasing Real Estate

The Sixth Directive does not explicitly state whether letting and leasing constitute supply of goods or of services. Thus, member states have the option of using either definition in treating these transactions.[7] The definition may be largely immaterial, however, since most leasing and letting transactions in this area are

Table 8-2. *Value Added Tax Treatment of Leasing and Letting Real Estate in the European Communities*

Country	*Leasing*	*Letting*
Belgium	Exempt 1	Exempt
Denmark	Exempt	Exempt
France	Exempt 2	Exempt 2
Germany, Fed. Rep. of	Exempt 2	Exempt 2
Ireland	Exempt/taxable 3	Exempt/taxable 3
Italy	Taxable 4	Exempt
Luxembourg	Exempt 2	Exempt 2
Netherlands	Exempt 2/taxable 3	Exempt
United Kingdom	Exempt	Exempt

Notes: 1-immovable leasing is excepted and is subject to value added taxation; 2-the option of taking taxable status is available; 3-exemption depends on length of lease; 4-immovable leasing is exempt.

exempt from value added taxation. The main exemptions include hotels, parking, and the like. The directive provides for optional taxation.

Table 8-2 summarizes the current treatment of letting and leasing. Some specific points are of interest.

- The tax treatment in Ireland depends on the length of the lease; if the lease is for more than ten years, the transaction is taxable.
- Commercial lessors (those who engage in the rental of buildings and land to commercial firms) are subject to tax in Belgium under certain conditions.
- Leasing is a taxable transaction in Italy.
- Dwellings are exempt from value added taxation in the Netherlands.

Although there appears to be some uniformity within the European Communities, glaring exceptions do exist (for example, Italy). Even if complete uniformity existed among the member states, there are a number of economic problems in the Sixth Directive itself.

First, there is the "new" versus "old" distinction. It has been claimed that if new buildings (regardless of use) are taxed and old land and buildings are not, the distinction creates a windfall for the owners of old buildings (Treasury I, p. 74). In addition, the taxation of new buildings implies that this activity is subject to a kind of first-sale value added tax. That is, the tax is paid by the first purchaser, who neither receives a credit for a subsequent sale nor explicitly charges a value added tax on that sale.

Second, once a new building becomes an old building, it is not subject to taxation. Also, if an old building is torn down and a new building is built, a distinction must be made between the land value and the value of the new building.

Third, exemption from value added taxation does not imply exemption from all taxation. In several countries sales of real estate (land, buildings, or both) are subject to various transfer taxes that can have relatively high rates. Since these taxes are not part of the value added tax system, they are in effect turnover taxes that can cascade throughout the system depending on how many times the property is sold. Even the sale of a building on which a value added taxation was paid (a new building that is now old) is subject to these turnover taxes.

Fourth, the option for taxation is intended to give the lessee or purchaser the right to credit the tax paid. If this option were not allowed, purchasers would bear part of the tax on inputs from sellers, who would increase the price of their output to recover the input taxes without the benefit of the credit.

Finally, the legal distinctions are made in the definition of a taxable transaction. Land used for farming appears to be exempt. The option for taxation is available only to registered taxpayers and not to individual consumers who sell or lease housing and land.

In summary, the European experience is not completely uniform, nor does it comply with standard notions of a value added tax. Neither rental nor sales of land and old housing are taxed. Optional value added tax treatment of rentals appears to depend on the tax status of the parties. Finally, transactions in this area that are not subject to value added taxation may be subject to turnover taxes that can cascade throughout the system—taxes that the value added tax was designed to replace.

Evaluation and Alternatives under Consumption Taxation

From an economic perspective the introduction of a value added tax is equivalent to the introduction of a pure consumption tax at a flat rate with no consideration for the personal circumstances—age, family characteristics, and so on—of the taxpayer. In either case the incidence of the tax on the factors of production (capital, land, and labor) is in proportion to their shares in pretax gross national income. Under either system, savings (however defined) are not subject to taxation, and so this type of taxation does not affect the relative

prices of consumption goods and services either within or between time periods.

This type of taxation, however, is not economically neutral (allocatively efficient). It generally creates incentives, other than pure income effects, to change behavior.[8] Since the tax does not fall on leisure, in particular, and on household production and consumption, in general, there is an incentive for consumers to substitute nonmarket for market activities. For example, the introduction of a value added tax (or a pure consumption tax) will create an incentive to substitute meals cooked at home for meals cooked in restaurants, since the home-cooked meal will escape value added taxation (or consumption taxes) on the labor component of the meal.[9] The same is true for housing. If a value added tax is applied to housing in a correct manner, consumers will have an incentive to substitute their own labor for market labor in the construction and maintenance of housing. For example, consumers will have an incentive to escape the value added tax on labor by painting their own houses instead of having taxable firms paint them.[10]

With respect to value added taxation on real estate, several alternatives have been proposed or implemented, but—if it is assumed that it is desirable to tax the consumption of housing services—none is without fault. First, real estate could be exempt from value added taxation. In this case either all housing services (rental or owner-occupied) would escape taxation, or only selected inputs subject to the general value added tax would be taxed. This treatment gives rise to some problems, in addition to creating a windfall for existing owners. To the extent that taxable activities and housing are substitutes, there is a clear incentive to consumers to substitute housing services for other forms of consumption. (The demand curve for housing shifts to the right when the relative price of taxable goods is increased by the introduction of the tax.) If the elasticity of the supply of housing is nonzero, the economy will be relatively more housing-intensive. Furthermore, the exemption of consumer real estate may change its relative price as against the value of real estate used as inputs in production.[11] Therefore it can be expected that under a value added tax with an exemption for real estate the production process will be less land- and building-intensive than under the ideal value added tax treatment—that is, the land-labor ratio would be lower—and a greater proportion of total buildings and land will be devoted to consumer use of real estate. But since savings are exempt from value added taxation, we would not expect a reallocation of the portfolio of assets in the economy devoted to housing stocks as against stocks of machines and equipment. Rather, there would be a reallocation of the portfolio of real estate stocks between consumer consumption and input consumption (the use of land and buildings as inputs into the production process).

A second alternative is that put forth in the Sixth Directive: tax new housing only, without benefit of the credit at later dates. In this case existing owners of residential housing and land clearly win in comparison with renters as well as with investors in stocks and bonds.[12] To the extent that new and old housing are substitutes, the price of old housing will rise, and existing owners of housing and land will get an artificial capital gain. This capital gain is above that which would occur if there were a fall in the real rate of interest as a result of the implementation of the value added tax.[13] Since the effect is a windfall, we would not expect a change in the share of rental housing.[14]

Some countries do not restrict the incentives created by the value added tax to one-time capital gains for existing owners of real estate. Once a building is "old," market trades are subject to various transfer fees and taxes that appear to be substituted for the value added tax.[15] These taxes are not credited for firms and are imposed each time the real estate is transferred.[16] From the perspective of the investor or seller, the total tax bill (both nominal and in present value) depends on the number of times the real estate is sold.[17]

Finally, there is the option of taxing only market transactions. One type of system would impose tax only on rental payments to third parties and not on owner-occupiers.[18] In such a system renters clearly lose, and thus this option has never been seriously considered.

The Stock Value Added Tax

From the previous discussion it is clear that the idealized value added tax on real estate is largely unworkable and that alternatives to it are flawed with respect to their economic incentives, distributional outcomes, or administrative feasibility. The alternative offered here is administratively feasible and does not create economic incentives over and above those created by the idealized value added tax. This alternative is called the stock value added tax (S-VAT).

Under the S-VAT, value added tax is paid on the sale of any type of real estate, new or old. Taxable firms receive credit on a purchase but not on a sale. Nontaxable purchasers pay the tax, and nontaxable sellers receive as a refund the taxes paid by the purchaser. Real estate agents and the like are taxable, as are construction firms. (There might be exemptions for small construction firms, depending on administrative costs.) All sales of durables used for home improvements or construction are subject to tax. (If such inputs—lumber, paint, steel, and so on—are sold to taxable firms, these taxes are creditable.) Rental payments are subject to a value added tax if the lessor is taxable; as with construction firms, relative administra-

tive costs determine whether all lessors are taxable.

The reason why such a strategy would work is that a value added tax and a flat-rate consumption tax are equivalent in nature. A consumption tax is intended to exempt savings, and the U. S. Treasury, in *Blueprints for Basic Tax Reform,* offered two alternatives for accomplishing this result (Bradford and others 1984). The first introduces the idea of a qualified account. All inflows into this account would be deductible for the purposes of computing the tax, the income earned would not be subject to tax as long as it stayed in the account, and all outflows from the account would be included in the tax base. The second method is tax prepayment. A stock (for example, real estate) would be subject to taxation if an individual chose to make the purchase outside the qualified account. On subsequent sale of the asset no tax would be paid on either the income or the capital gain or loss. *Blueprints* shows that in a flat-rate tax world the only difference is the timing of the tax revenues and that there is no difference in the present value of the tax revenue. Thus, either approach would fit the bill, and equivalent economic incentives are created by either alternative.

It can be straightforwardly shown that a prepayment approach to real estate would work equally well under a value added tax system.[19] Suppose that under the idealized value added tax an individual renter pays for an existing house $100,000 in present value, inclusive of tax, over the life cycle and that taxes equal $10,000 in present value. For simplicity, suppose the market value of the real estate is zero at the end of the life cycle. (This assumption is not necessary for any general result; see below.) In this case the market value of the house today would equal the capitalized flow net of tax benefits, or $90,000. At this price the owner of the real estate would be indifferent between holding this real estate, other real estate, or other types of capital. Suppose now that the S-VAT is introduced instead of the value added tax on flows (the flow VAT). The consumer is indifferent between paying $100,000 to the owner as opposed to $10,000 to the government and $90,000 to the owner, whereas in order to be indifferent the owner must get $100,000 and pay $10,000 to the government today to receive $90,000 net of tax. That is, relieving the consumer of the obligation to pay the tax on an annual basis does not relieve the consumer from paying the tax-inclusive price. The only difference between the two transactions is that under the S-VAT the owner pays $10,000 today for the consumer and recoups that sum over the period of the lease. The same effects are created with respect to sale. The owner-occupier pays $100,000 to the seller and the seller pays $10,000 in value added tax. Thus, the owner-occupier is no better or worse off in relation to the renter than under a pure value added tax. The value added tax is prepaid.

Owning versus Renting and Multiple Sales

The principal benefit of the S-VAT is that it creates no incentives for changing the allocation of real estate between owner-occupiers and renters or between residential and nonresidential use. In addition, multiple sales do not imply multiple taxation. For instance, suppose that the sale under consideration is of a piece of unimproved land that lasts forever. Furthermore, assume that all purchasers and all potential renters are willing to pay R in yearly land rents forever, net of value added tax, and to pay tR a year in value added taxes. (Again, this assumption has no effect on the general result.) Then the market value of the land today is R/r, where r is the market rate of interest. Suppose now that the S-VAT is substituted for the flow VAT. Then the seller of land receives $R(1 + t)/r$ for the land and pays taxes equal to tR. That is, the first purchaser pays the entire value of the flow VAT which has been capitalized into the value of land and then taken by the government on the first sale.[20] In effect, this one-time payment is a prepayment of all future taxes regardless of whether future use is for investment or for consumption.

When the property is sold at some future date, the seller demands and receives from purchasers the remaining balance of the prepaid taxes. Under the assumption of no capital gains or losses as a result of changes in relative prices, the present value of the taxes paid by the first purchaser after sale to another purchaser equals

$$T = tR/r(1 - e^{-rt})$$

Alternatively, the government could collect value added tax on each trade between consumers. But since the consumer has prepaid the entire tax, the tax collector should refund the taxes paid by the purchaser to the consumer who is the seller.[21]

It is clear that the allocation of residential property between owners and renters would not be affected. Renters would still pay the value added tax (technically, repay the owner for the prepayment) over the period of the lease.

The main difficulty with this proposal, in the absence of a credit system, would be transactions between registered payers of value added tax or between registered taxpayers and consumers.[22] If a credit system is used for registered taxpayers, the problem is solved. If the first purchaser is a taxable firm, it receives a credit for the full value of the tax, just as on the purchase of a new machine. When the firm sells the real estate to another taxable firm, it (or a VAT officer) collects the value added tax, and the selling firm does not receive a credit on that date. In effect, the government gives the firm the credit in present value when the real estate is purchased; that is, the government recoups the ex-

cess credit in present value when the real estate is sold. Such a tax credit system continues until the real estate is sold to the residential sector, which of course does not receive the credit. If the property is then sold back to the taxable sectors, the tax credit system starts again.

The administration of this type of value added tax could be relatively simple. Consumers would not pay value added tax, and they would never need to file any type of return. Commercial construction firms would not have to account separately for the cost of buildings sold to consumers as opposed to firms or for repairs as against construction, since all these activities would be subject to tax. These firms would impose the tax on all sales, and consumers would not get a credit. In contrast to the practice in Europe whereby only new buildings are subject to value added taxation and old buildings are subject to various other taxes, no distinction is necessary under the proposed system.

The administration and collection of this tax would involve two steps. First, when the real estate is sold, the title search (or deed) should contain information on whether a value added tax has ever been paid. No subsequent record is necessary. If the tax has never been paid, the tax is paid on this transaction independent of the tax status of the buyer or seller. If tax has been paid in the past, the tax status of the seller must be identified. If the seller is a payer of value added tax, the government collects the funds and keeps them; if not, the government collects the funds and gives them to the seller in the form of a refund for prior taxes. (Inflation is not a problem here unless interest rates do not reflect expected inflation.) This administrative setup would be simpler than a true value added tax on flows (which would be impossible) and, it is hoped, no more cumbersome than the value added tax on new buildings. (Land values do not have to be separately accounted for, and there is no need for an arbitrary determination of new versus old). In addition, there is no need to impose on old properties annual "in lieu of" registration duties that are not creditable by firms and can cascade throughout the system.

Finally, there is no need to make an arbitrary distinction between buildings and the land on which they stand. This implies that no incentives are created on redevelopment activities.[23] For instance, suppose a taxable construction firm buys an existing house and land, tears the house down, builds a new house, and sells the new house and land. In this case the market value of the land without the house is greater than the combined value of the land and the house. The difference in values is equal to the cost of demolition, and this value will be reflected in the taxes paid by the firm. When the new house and land are sold as a unit, the S-VAT is collected, and if the credit system is operating, the construction firm applies the credit to the purchase. Thus, the additional tax, if any, is equal to the value added by the demolition and the new building.

The incentives discussed above imply that any country that has a property tax or a stamp duty on real estate transactions should be able to administer the S-VAT.

Potential Conflicts and Problems

This proposal is not perfect. There are at least six criticisms that might be applied to this system. I believe that three are unfounded and that three may have some validity.

Capital gains and losses. The purpose of the S-VAT is to tax the present value of the flow of consumption benefits from real estate and exempt gains or losses brought about by changes in relative prices. Trades within the taxable sector will always recognize such gains and losses. For instance, land may sell for $1,000 today and for $1,000,000 or $500 (in real dollars today) next year. Under the proposed system capital gains resulting from changes in relative prices would not be taxed, nor should they be. Recall that real estate is one of many investment vehicles for consumers. Since there is no intention of taxing gains and losses under a value added tax, no tax should be imposed on gains from real estate. In fact, the government will capture its share of these gains when the seller trades the receipts for a taxable flow of goods and services.[24]

Increased housing prices. It has been claimed that to impose a value added tax on real estate would increase housing prices beyond the limit that many consumers could afford (Treasury I, p. 74). It must be realized, however, that a value added tax imposed on everything but housing both increases housing prices and creates windfalls for existing owner-occupiers.[25] Therefore, the question should be phrased, how much more (if at all) will housing prices rise under a direct value added tax than under an otherwise generally applicable value added tax with an exemption for housing? I believe that consideration of these effects would at least weaken, if not destroy, the case against imposing the value added tax on housing.

Self-construction. In an attempt to escape taxation on the value added in the construction sector, consumers might self-construct part or all of housing and improvements. It was noted above that there is no solution to this problem, and this incentive would continue under the S-VAT. Self-construction of improvements is just one example of this incentive. But the differences between self-construction and, say, cooking at home to escape the value added tax on restaurant meals

should be kept in mind. When the consumer uses his or her own time instead of the market time of others for construction and improvements, part of the value of the consumer's time is captured in the increased price of housing. Thus this value of labor will be taxed when the proceeds are realized and will also be subject to value added taxation on subsequent consumption of market goods. In effect, the consumer is making an investment that should not be subject to tax—after all, the consumer could choose alternative, nontaxable, means of increasing wealth, such as investing in stocks and bonds and using his or her time to appreciate the value of assets. To the extent that the time that consumers put into construction and maintenance is reflected in the sale price of the housing, only the consumer's own consumption of the improvements escapes taxation, and the future consumption benefits from the liquidation of savings do not escape.

Lock-in effects. The imposition of the S-VAT might create a lock-in effect if it were implemented as a completely new tax. To illustrate, suppose that a person owns a house worth $100,000 and is considering the purchase of another house, also worth $100,000.[26] The S-VAT is now imposed at 10 percent, and the net-of-tax price of housing does not change. (In effect, the supply curve of new housing is assumed to be perfectly elastic.) If the house is sold, the seller receives $100,000 but must pay $110,000, including the $10,000 in taxes, for the next house. Thus a lock-in effect is created, with all its potential negative implications.

A number of points need to be addressed regarding the implications of this effect. First, this lock-in effect is a transition problem. Once all housing and land have been sold under the new system, the lock-in effect disappears. Second, the introduction of any new value added tax creates a one-time lock-in effect by sending consumers a clear signal not to consume and discouraging consumers who own assets of various kinds (housing included) from liquidating their positions and purchasing taxable goods and services. Third, this lock-in effect is not avoided by the value added tax on new construction imposed in Europe, which creates an incentive for keeping old nontaxable housing in service longer than would otherwise be the case. Finally, the turnover taxes and registration fees used in lieu of the value added tax create similar problems, and the lock-in effect created by these taxes is not transitional but is part of the incentive structure of the entire system.

Thus potential lock-in effects are inherent in any value added tax system because of these systems' bias against consumption. The lock-in effects must be measured against the relevant alternatives as well as against current taxes that might be replaced by an S-VAT. For instance, an S-VAT that replaces an existing turnover tax on housing might create no lock-in effect at all.

Risk. If all consumers were risk-neutral, the S-VAT would create no incentives as compared with a flow VAT. But it is known that risk-averse consumers always prefer a flow-type excise tax to a fixed fee at the front end (see Thon 1985). This is a problem with respect to the value added tax treatment of all consumer durables as well as all forms of savings, and thus it is not unique to real estate. Given the value added tax treatment of other forms of savings (no tax until savings are consumed), there might be a reallocation of the share of portfolios devoted to housing, self-selection based on risk preferences between owners and renters, or a change in the relative price of housing services.

Use of government proceeds. The intent of the S-VAT (or of any value added tax, for that matter) is to confiscate for government purposes a uniform share of wealth on the value of land and the undepreciated value of the housing stock. In the present context it is reasonable to expect that government receipts would be front-loaded.[27] Unlike the incidence of the value added tax on labor income, which accrues over time, the government collects the present value of revenue as the trades are made. If, as expected, much of the revenue accrues to the government in early years, there may be a difference between the timing of receipts and expenditures as compared with a flow VAT.[28] But since the government confiscates at the front end rather than over time, perhaps fiscal restraint should be considered. For instance, a trust account might be established to receive funds from the S-VAT. Revenues collected from transactions in real estate could be placed in the trust. These revenues could be invested at the market rate of interest and the income (not the principal) could be used as part of general revenues. Under such a scheme the government could replicate the time path of receipts of a flow VAT.[29] Such a scheme might alleviate fears of future tax increases created by such one-time transfers from the private to the public sector.

Conclusion

In my view, if a value added tax is chosen as a means of raising government revenues, the consumption benefits from housing should be subject to value added taxation. The revenues would be sizable, which would imply a lower rate on all consumption goods, assuming equal revenue. The distributional implications from the exemption of housing services are largely unknown but may be regressive. This is particularly true in developing countries, where considerable wealth is held in the form of land and real estate. The S-VAT is one of a num-

ber of schemes that could do the job of raising revenues. In effect, the S-VAT taxes the stock of consumption value and not the flows. The intent of the tax is transparent and easy to understand, and it has the potential for being cost-effective while creating a minimum of allocative incentives.

Given these considerations, the S-VAT appears potentially feasible for any country that now collects property taxes (even at the local level) and that has a systematic record of landholdings. Whether such a scheme can be politically acceptable and cost-effective (with safeguards against corruption) is difficult to say at this time. But the tax is worthy of serious consideration and study.

Notes

I have benefited from the help of several people. Evan Davis made substantive comments during the conference and identified a potential problem with the proposal. Gregory Ingram provided a number of written comments. The current version reflects these important suggestions. Any remaining errors are mine.

1. See U.S. Treasury, November 1984, Volume 3 (referred to hereafter as Treasury I).

2. For purposes of discussion I will assume that the value added tax under consideration is a flat-rate tax designed to tax all consumption. If exemptions or variable rates are used, the incentives created by the value added tax will be different. At this point, however, it is convenient to assume universal application at a single rate.

3. From an economic point of view this distinction is largely irrelevant. That is, a uniform tax on all flows in an atemporal general equilibrium environment is equivalent to a uniform tax on all factors of production—the incidence of the tax is a nondistortionary tax on wealth (see Atkinson and Stiglitz 1980 and McLure 1975). It is this equivalence that is exploited in the design of the value added tax on real estate.

4. From an economic perspective the consumption benefits of owner-occupied housing are equal to the opportunity cost per period that the owner-occupier incurs from the absence of market trade in the form of rentals. In effect, the owner-occupier is both a consumer and a supplier of housing services. The problem is that under a value added tax that is practical to administer, there is no feasible way for the government to determine the value of these periodic rentals other than through some arbitrary rule.

5. Investment in this context does not necessarily imply that the real estate will be used as a taxable firm. Rather, the stock nature of real estate enables it to be a store of wealth.

6. An earlier version of this paper contained an appendix that described fully the information summarized in this section. This appendix may be obtained from the author.

7. This distinction will determine whether the value added tax is paid at the beginning of the lease in one payment (a supply of goods) or over the period of the lease (a supply of services). See Timmermans and Joseph (1980), p. 47.

8. This statement is based on the fact that at least one classification of commodities—for example, household production and consumption—will never be subject to taxation. To the extent that consumers can withdraw labor from the market sector to the household sector, there is a clear incentive to do so to escape taxation. In addition, local conditions for the optimal second-best taxation of commodities have been known since the time of Corlett and Hague (1953) and, depending on the cross-price effects, a flat-rate value added tax is not even a second-best choice.

9. For all practical purposes the definition of "market" will correspond to taxable sectors when a value added tax is applied. That is, if small firms or certain items such as housing are exempt, there is an incentive to substitute nontaxable for taxable activities. In effect, exemptions increase the number of goods and services that are not subject to taxation.

10. There is simply no answer to this problem. These incentives to substitute nonmarket for market labor are an inherent part of the value added tax (or of any consumption tax). Therefore no strict theoretical claim can be made that consumption taxes are Pareto-superior to income taxes unless certain stringent conditions are satisfied.

11. Because a value added tax is tax on consumption at the household level and not a tax on consumption at the firm level, the relative price of any good used in consumption that could be used in production will increase. For instance, if a value added tax is imposed on trucks, consumers pay $P(1 + t)$, where P is the price of trucks, whereas firms pay only P through the credit system.

12. Of course, this windfall could be offset by a windfall tax. Although good in theory, such a tax could never be implemented in practice because no one could attribute the gain until the real estate was sold, and even then such an attribution would be largely arbitrary.

13. If the supply of savings shifts to the right as a result of imposition of the value added tax (or the value added tax is substituted for a tax on income, including the return to savings), there will be a one-time capital gain for existing owners of capital. The windfall cited in the text is in addition to that brought about by such a change in interest rates.

14. See below. In effect, the first purchaser prepays the tax for each renter, who might be himself. Thus, the relative price of renting versus owning will not change.

15. Note that in these countries the transfer fees and taxes are imposed only if the real estate is not subject to the value added tax. Thus the fees appear to be clearly intended to substitute for the value added tax.

16. There is also the obvious problem of allocating the value of real estate between the building and the land on which it stands for countries that attempt to make the distinction.

17. This incentive will affect the market value of assets and in theory could be overcome if everyone knew how many times every property would be sold. That is, the capitalized value of the property today would reflect the number of trades. This, however, is a stronger assumption than could be reasonably expected.

18. There is always the option of taxing imputed rentals as income, which is done in some countries—for example, Belgium. It is commonly agreed, however, that such attempts are arbitrary and create economic incentives the effects of which are difficult to predict because of uncertainty about the degree of error in measurement.

19. For the basic analytical framework see Conrad and Gillis (1985). The mathematics are straightforward and are not repeated here.

20. This is the same type of capitalization that occurs in a European-type value added tax on new buildings, abstracting from the additional problems stemming from resale taxes.

Thus, if any type of property, such as old housing, is exempt from value added taxation, the owners of the exempt properties receive a one-time windfall equal to the present value of the tax revenues that would have been paid to the government.

21. Since this is not a credit system, there is no need for consumers to keep receipts for home improvements and the like. To the extent that the home improvements increase the value of the real estate, the tax (and thus the refund that is required because of the investment nature of housing) will reflect the prepayment of these taxes as well.

22. In Conrad and Gillis (1985) the issue of the allocative effects between the production and consumption sectors of this proposal were not considered. Real estate, however, can be used in both production and consumption. Therefore, if a credit system for taxable firms is employed, taxable firms should get the credit for the purchase of real estate.

23. Gregory Ingram noted the omission of this incentive in an earlier draft.

24. In principle, the S-VAT is superior to the consumption tax, which allows the option for prepayment or investment through qualified accounts. Windfalls realized outside the qualified accounts (through prepayment of tax) would not be subject to the consumption tax. Under a value added tax on all other goods, however, there is no way for the consumer to escape the tax. It might be deferred, but the present value will always be the same (see Bradford and others 1984).

25. If housing and taxable goods are substitutes, the demand curve for housing will shift to the right. Depending on the elasticity of supply, the price will rise, or housing will expand beyond the economically efficient quantity, or both. As long as the supply curve of housing is not perfectly elastic, housing prices will rise.

26. Evan Davis noted the lock-in effect in his comments on this paper. The example given here was developed in our subsequent discussion.

27. If new housing follows some kind of steady-state path based on depreciation, the government collects steady-state revenues at each point in time. The problem, however, is the front-end load of the revenues of the existing stock.

28. Of course, the government could borrow to replicate the S-VAT expenditure profile under a flow VAT, and thus in theory there is no reason for a difference in the time path of government expenditures.

29. The government could still borrow at the front end, but at least it would have collateral in addition to promises for future tax increases.

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9

Options for a VAT at the State Level

Satya N. Poddar

The value added tax (VAT) has grown significantly as a source of tax revenue during the past two decades. Much of this growth, however, has occurred at the national level of government. Except for the state VAT in Brazil (commonly referred to by its Brazilian initials, ICM) and the Michigan addition-method VAT in the United States, the tax is always imposed at the national level. When state governments impose general indirect taxes, they use a single-stage retail sales tax. Although in some countries there are constitutional or other legal barriers to the imposition of a VAT by a state government, the primary reason for the absence of VAT at the state level appears to be the lack of interstate fiscal frontiers. It is generally believed that without such frontiers state VATs would need to be based on the origin principle (as opposed to the destination principle) for interstate sales. An origin-based VAT could, however, distort the location of economic activity unless the tax was imposed at a uniform rate in all of the states.

Although the constraints imposed by open interstate fiscal borders are recognized, there is a growing interest among state (as well as national) governments in this form of tax. This interest reflects in part their inability to raise additional revenue through personal and corporate income taxes, selective excises, and other levies.[1] For developing countries in particular, yield from income taxes is limited because of ineffective enforcement and administration and the lack of well-developed business accounting systems. Increased reliance on income taxes, even if feasible, may not be desirable because such taxes do not encourage savings and capital formation, which is so vital for economic growth. A single-stage retail sales tax is also not a very attractive option for developing countries because of the prevalence of small retailers and the risk of tax evasion.[2] Even in industrial countries, governments have encountered increased evasion of retail sales taxes when the rates reach double-digit levels.[3]

In light of the above concerns, this chapter canvasses options for imposing a VAT at the state level and contrasts these with a single-stage retail sales tax where appropriate. There is one particular option for the national and state governments to impose a destination-based VAT together, which would allow each the flexibility to set its own tax rates.

Many of the issues covered here have been discussed previously in the report of the Neumark Committee (1963) and subsequent publications on the effect of removing customs posts and border controls on the movement of goods within the European Economic Community (EEC). The approach identified here for a joint national-state VAT with variable rates is similar to that proposed in Cnossen and Shoup (1987) for the EEC.

The various options for the imposition of a general sales tax at the state level fall into the following broad categories:

- A national tax with revenue-sharing arrangements
- Origin-based taxes
  - VAT with uniform rates
  - VAT with variable rates
- Destination-based taxes
  - Retail sales tax
  - VAT with uniform rates
  - VAT with variable rates
- A joint federal-state VAT.

The suitability of each of these options must be assessed in relation to four basic objectives. First, the tax should not require any interstate border controls or tax adjustments. Second, the states should have the flexibility to set their own rates to reflect their own social and economic priorities and fiscal needs. Their autonomy in setting the tax rate, however, does not preclude a uniform base for the tax across the nation. A uniform base would, in fact, be highly desirable, since it would greatly reduce the cost of compliance and ease the task of enforcement, with corresponding savings in administrative costs. Third, the tax should not distort the location of economic activity. Fourth, the tax should be relatively simple to comply with and enforce and should not require complicated rules or excessive administrative discretion.

In addition, it is assumed that, regardless of how the interstate movement of goods is treated, international flows of goods will be taxed on the basis of the destination principle, that is, the tax will be levied on imports and rebated on exports. No country, as a matter of principle, applies its sales taxes to exports and exempts imports. Although it seems reasonable to assume that the states would prefer to follow the same approach (as do the U.S. state retail taxes), both the Michigan VAT and the Brazilian state taxes are levied on the origin principle for the most part. To focus on interstate fiscal issues, this discussion assumes that the tax imposed is of the consumption type, applied at a uniform rate to most goods and services, and extended all the way to the final sale to consumers.

A National Tax with Revenue-Sharing Arrangements

From the technical and legislative perspective, a national tax with revenue-sharing arrangements is the simplest approach for state participation in VATs. Under this approach the tax is imposed at a uniform rate across the nation, and interstate movement of goods does not require any special adjustment in calculating tax liability. The revenue collected from the tax is then shared between the national and the state governments on the basis of a formula. This is the approach followed in Austria and the Federal Republic of Germany. In Germany, the VAT, while imposed by the national government, is collected by the state governments on behalf of the national government. This is, however, purely an administrative arrangement and does not affect the design of the tax.[4]

In its basic design, such a tax would be identical to an origin- or destination-based VAT imposed at a uniform rate by each state. All such taxes would affect any given transaction uniformly. The key difference between these approaches lies in the allocation of revenue among the state governments. Where the tax is imposed by the national government, revenue sharing would depend entirely on negotiations among the state governments. The revenue allocation agreed on by them could reflect a variety of factors, such as the fiscal need and capacity of individual states, as well as their share in national output and consumption. The other two approaches do not allow this flexibility and allocate revenue on the basis of production or consumption of goods and services.

A national tax with revenue-sharing arrangements would appear to be the simplest to administer. It would also be the simplest to comply with, since record-keeping and tax-return requirements and procedures would be uniform across all of the states. As discussed later, VATs imposed individually by each state government necessitate complex arrangements for deciding which state should impose the tax on imports and which should provide rebates on exports. Under a national tax all tax adjustments on imports and exports flow into or out of the national revenue fund and form part of the aggregate revenue that is subsequently shared among the national and state governments. International border tax adjustments thus do not involve any additional difficulties under this approach.

The main drawback of this approach is the lack of fiscal autonomy for the state governments. In federations where the states have enjoyed considerable autonomy in imposing a general sales tax (for example, the United States and Canada), this option thus may not be politically viable. As noted by Cnossen and Bird (1984, p. 10), "revenue sharing of this type and magnitude would mark such a fundamental change in federal-state fiscal relationships in the United States that it is probably unthinkable." The fear by the member states that they would lose fiscal autonomy has also been the main stumbling block to running a VAT without fiscal frontiers in the EEC.

Origin-Based Taxes

Under the origin principle, a given state imposes the tax on all sales by businesses resident in the state regardless of whether the sales are to persons residing in the state or to those residing elsewhere. Businesses are allowed an input tax credit for any taxes paid on their purchases, including those collected by the exporting states on interstate purchases. International trade flows are taxed on the destination principle. The state from which the goods are finally exported abroad bears the full cost of tax credits on export inputs, and the state through which imports initially enter the country collects the tax on their value at the point of entry.

An origin-based VAT as described above would be iden-

tical to a destination-based VAT, provided it was imposed at a uniform rate in all of the states. The only difference between the two would be the allocation of tax revenue among the individual states. Another obvious point is that, unlike a VAT, a retail tax cannot be imposed on the basis of origin principle. This option is thus not given any consideration here.

VAT with Uniform Rates

It has traditionally been assumed that in the absence of fiscal frontiers VATs can be imposed only on the basis of the origin principle. This was also the conclusion reached by the Neumark Committee (1963), which recommended that, in order to remove border controls, the EEC should, in the long run, move to a system of origin-based VAT imposed at a uniform rate in all of the member countries.

The choice between origin and destination principles, and its effect on the production and allocation of resources, has been a topic of considerable debate and discussion in the literature. Although the issues are numerous and are covered in greater detail in other chapters (see chapters 1 and 4), the ones that are relevant for our purposes can be summarized as follows.

First, the basic assumption that a destination-based VAT cannot be imposed without fiscal frontiers has been challenged, particularly in the context of a community or federation of mutually agreeing nations or states. Second, it is now generally agreed that an origin-based tax imposed at nonuniform rates distorts the location of economic activity. Although it has been shown that there are conditions under which such a tax would not be distortionary (for example, flexible exchange rates and prices, immobile factors of production, and zero balance of trade), in the real world these conditions are not likely to prevail.[5] These conditions are even less likely to prevail within a federation where, by definition, the exchange rate is fixed among the states and wage and price movements can differ from one state to another in a much narrower range because of institutional constraints (for example, nationwide wage bargaining by labor unions and uniform pricing for certain goods and services, such as travel, postal, and communication services). Third, an origin-based VAT produces several administrative and compliance difficulties that are nonexistent or less significant under a destination-type VAT. They relate to the valuation of interstate trade flows, particularly for transactions between related firms, and the calculation of appropriate tax and rebates on imports and exports.

The valuation problems that arise are similar to those that are encountered in computing corporate income tax on domestic and foreign-source income and that necessitate complex international transfer price rules. Inflows of goods and services need to be valued at the point of entry, so that the tax will not be applied on value added that was already taxed in the state of origin. Outflows need to be valued for goods leaving the state.

Consider, for example, a car produced in state A and sold to final consumers in state B for $10,000. If the car is sold by the manufacturer in state A directly to the consumer in state B, then under the origin principle all of the tax on the full sale value will be attributable to state A where the production took place. However, if the manufacturer initially sells the car to an unrelated distributor in state B for $8,000 and the distributor in turns sells the car to the consumer for $10,000, state A would collect tax on only $8,000, and state B would collect tax on the remaining $2,000 of the final sale price. If instead the manufacturer transferred the car to his own distributing branch in state B before selling it to the consumer, then all of tax might get allocated to state B, unless state A treats the physical transfer of the car as a taxable transaction and values it at, say, $8,000.

Where the tax rates differ across the states, business firms would prefer to assign as much value added as possible to the state with the lowest rate. Any transfer and valuation rules to counteract inappropriate shifts in the interstate allocation of tax would be arbitrary and might be circumvented through various tax planning maneuvers. The destination principle does not cause any such difficulties, since it allocates all of the tax to the state where final consumption occurs, regardless of the location of the producers and distributors of the goods and services.

It could be argued that if the rates of a VAT were uniform across the states, then firms would have no incentive to misstate the values. As pointed out by McLure (1980, p. 131), however, "even if firms were indifferent about the division of tax base among states, the states would not be." A set of rules would thus still be needed to allocate revenues among them appropriately.

International trade flows, assuming that they are to be taxed on the basis of the destination principle, give rise to the question of which state could collect the tax on imports and which state should provide the rebate on exports. To allocate all of the tax on imports to states where the goods initially enter the country would be seen to be quite arbitrary by, and not acceptable to, inland states with inadequate international airports, roads, or harbors. Similarly, it is unreasonable to expect the last state from which the goods are exported to bear all of the cost of export rebates when it may not have collected any of the tax on value added embodied in export sales. The value added in export goods may have borne tax in several states before their foreign shipment. It would be logical to allocate the cost of rebates in each state in proportion to the tax

collected by them. This, however, would require a detailed tracing of the export value added in each state, seemingly an impossible task.[6]

The only feasible alternative in these circumstances is for the national government to collect the tax on all imports and provide rebates on exports. If the foreign trade balance is zero, then the net revenue receipts of the national government would also be zero. Even this option, however, is not without problems. Most countries that currently impose a VAT have found it difficult to apply the tax on importations of services. In practice, this has not created any major problems under a national tax, because service imports are confined mostly to the business sector, and thus any omission of tax on them at the border is self-correcting through a lower input tax credit. Under the suggested alternative, however, the omission, while self-correcting in the aggregate, would not be so at the level of each government. The omission of tax at the border would be a loss to the national government, and the lower input tax credit a gain to the state government. On the export side, the state government would insist on collecting tax on exports of services, which would then be rebated by the national government. Needless to say, this could lead to endless arguments between the two levels of government.

Additional difficulties arise under the origin principle when determining the appropriate allocation of tax on goods and services that are provided nationwide by a single business firm. Consider, for example, the sales of electricity by a business firm that maintains a network of power-generating stations and transmission lines throughout the nation. Although the destination of electricity sales can be readily determined by the residence of the buyers, there is no simple and objective way to determine the origin of the electricity value added. Allocation of all of the tax on electricity sales to the state of incorporation or head office of the firm would be conceptually inappropriate and unlikely to be acceptable to other states. Other examples where similar difficulties would arise include satellite and other communication services, interstate transportation, and financial services, to name just a few. Determination of tax in such cases would require the use of allocation rules and formulas designed for the VAT and likely to differ from those used to calculate state income taxes. This, in turn, would necessitate interstate negotiations and likely national intervention to arrive at a uniformly applicable allocation system.

VAT with Variable Rates

The discussion above is equally relevant to the imposition of an origin-based VAT at variable rates. As noted earlier, the issues that arise about the imposition of an origin-based VAT at uniform rates relate primarily to the interstate allocation of tax revenue. Interstate variation in the tax rates, however, would also affect the location of production activities and produce distortions in the calculation of tax.

Consider first the distortions that arise in calculating tax under the credit-invoice method of a VAT. Take, for example, a product with a value added of $100 in state A, which is shipped to state B and sold for $200. If the tax rates in state A and B were 10 and 5 percent, respectively, then state A should collect $10 and state B $5 in tax. Under the credit-invoice method, however, state A would collect $10, and state B would collect zero (output tax of 5 percent of $200 offset by input tax of $10). If the tax rates were, instead, 5 percent in state A and 10 percent in state B, they would collect $5 and $15, respectively—again an inappropriate outcome in state B. To remove such inaccuracies in the calculation of tax, one would need to adopt the subtraction or addition method of VAT (McLure 1980).

Interstate variation in the tax rates would also affect the production and consumption patterns in the economy in a variety of ways. It is assumed here that the tax is calculated by the subtraction method.

First, even if each state imposes the tax at a uniform rate on all goods and services, any interstate variation in the tax rates would result in variation in the effective tax rates on different goods and services. The overall tax burden on any given product would depend on the allocation of total value added among individual states and on the tax rates prevailing in each. The tax would thus cease to be neutral at the consumer level. Second, it would induce businesses to locate their activities in states with the lowest tax rate. Third, importers would alter their shipments so that the initial point of entry would be the state with the lowest rate. Fourth, there would be no easy way to calculate an appropriate input tax credit on exports for which the value added originated in several states with different tax rates. Finally, the variation in tax rates would encourage a variety of activities to minimize the burden of tax, such as direct shopping in low-tax jurisdictions and sales through mail order or warehouse shipments from low-tax states.

The Brazilian Experience

Although the operation of this system has not been examined in detail, a cursory review of the literature suggests that Brazil, because its states have an origin-based VAT, has had to deal with all of the problems discussed above and many more. For example, to minimize the distortion of production and trade patterns from the variation in the rates, interpretation, and administration of taxes among states, the freedom of action of individual states had to be circumscribed by a set of constitutional directives and norms. The states

have not been able to agree on numerous issues, and the national government has had to step in to resolve the disputes. Ceilings on the tax rates that can be charged on interstate trade have been imposed by the national government. Without these ceilings, full credit in the state of destination for taxes paid to the state of origin could seriously undermine the revenue base of the former. (The state of origin can effect a transfer of revenues in its favor by increasing its rate of tax on interstate sales. Such an increase would not affect the production and consumption of the good as long as the state of destination provided full credit to the buyer firm for all input taxes paid to any of the states.)

The tax on interstate trade and transactions among related firms is calculated by reference to official price schedules for a range of primary products and other commodities. There are rules requiring allocation of at least 75 percent of retail sales values to the state of origin in specified cases. The treatment of international trade also appears to be unconventional. Exports in some cases are exempted or taxed at a lower rate, as opposed to zero-rated. It is not clear from the literature whether imports are taxable at the border or only on the first sale in the country. Services are generally not subject to tax unless they are provided in conjunction with the supply of goods.

Because it is based on the origin principle, the Brazilian system allocates a larger share of revenue to the producing states that are net exporters. States that are net importers, which generally also happen to be less developed, get a smaller share. This pattern of revenue allocation has been a source of concern. The policymakers have tried to deal with it by requiring states to impose a lower rate of tax on interstate trade than on internal trade. The difference in the rates on the two types of transactions is currently five to eight percentage points. It is, however, perceived to be inadequate to meet the policy concern. The producing states presumably would argue that the cost and quantity of government services are positively correlated with the volume of production activity and that they should thus get a larger share of the revenue.[7]

There is a risk that a mere reading of the tax statute or its description, without first-hand experience of its operation, may produce misimpressions about a country's tax system. Subject to this qualification, the Brazilian system appears to be one of the most complicated VAT systems in the world. Most of the complications relate to the origin principle of the tax. In spite of its potential to generate substantial revenue, one should not recommend it to other countries without exploring other options.

An origin-based VAT is particularly unattractive at the subnational level or within a community of nations with significant flows of trade and affiliated firms across the borders. Such a VAT severely restricts the autonomy of the taxing jurisdiction, requires virtually uniform interstate tax rates, and does not lend itself to simple administration. It allocates a larger share of revenue to the producing regions. If this is a policy goal, however, it could be better achieved through other explicit revenue-sharing arrangements.

Destination-Based Taxes

A destination-based tax could take the form of a VAT or a single-stage retail sales tax. Under both, the revenue from the supply of a product or service accrues to the jurisdiction where the final consumption occurs. Even though the tax may have been imposed at varying rates at intermediate stages, the effect on consumers depends exclusively on the final retail price and the tax rate applicable at that stage. An obvious implication is that any interstate variation in the tax rates should not in any way affect the location of production or the pattern of trade. The only constraint on the ability of individual states to set the tax rates would be the possibility that consumers would try to avoid taxes by shopping in low-tax jurisdictions, particularly in the absence of fiscal frontiers.[8]

Despite their potential for tax avoidance and fraud, which are endemic to all tax systems, destination-based taxes thus meet two of the basic objectives identified at the beginning of this discussion, namely, fiscal autonomy and economic neutrality. The issues that remain in assessing their suitability relate to the procedure for collecting tax on interstate flows in the absence of fiscal frontiers and the cost of compliance and administration.

Taxation of Interstate Flows

For this discussion it is useful to distinguish two types of interstate flows: sales to business firms and sales to consumers. To impose destination-based taxes on interstate sales between business firms, it is not necessary—contrary to traditional assumptions—to institute border controls. Any such sales are, by definition, intermediate transactions, and any tax on them does not affect the ultimate tax on the final sale to consumers. Fiscal frontiers are needed primarily for collecting tax on interstate sales to consumers. We will discuss the taxation of business sales first and then the problems related to consumer sales.

Under a single-stage retail sales tax there is no tax on sales to businesses, either interstate or intrastate. A VAT, however, applies to all sales, whether to businesses or to consumers. Special provisions are thus needed to relieve interstate sales from the tax they may have borne in the state of origin. There are two ways of accomplishing this: zero-rating interstate sales and

crediting taxes paid through a clearance mechanism (Cnossen and Shoup 1987).

Zero-rating interstate sales. The option of zero-rating would treat interstate sales in a manner similar to international sales. The vendor firm would not collect any tax on such sales but would still be entitled to full credit for any taxes that it may have paid on purchases of inputs. Any consumption or resale of such goods within the importing state would attract the normal tax, with a zero input tax credit.

The key differences between the treatment of interstate and international flows under this system would be in the timing of the tax and the method of collection. Imports from another country are generally taxable at the border. For imports from another state the tax would be deferred until either the use of, or the first sale within, the importing state. Although in theory such tax deferral may detract from the neutrality of a VAT, it is not likely to be large enough to be of serious policy concern in developing countries.

A tax credit clearance mechanism. Under this system, interstate business sales are subject to the normal tax in the exporting state, and the importing state allows full input tax credit to the buyer firm for any such taxes. The buyer firm, however, identifies the taxes paid to other states separately, and these are then charged to those states. A central tax credit clearance mechanism is needed to reconcile and consolidate all such interstate charges and to settle any net debits and credits for individual states.

This mechanism can also create a cash flow advantage (or disadvantage) if the tax rate in the importing state is higher (or lower) than in the exporting state. The size of this effect, however, would be even smaller than in the previous case because the tax deferment or rebate arises only to the extent of interstate variation in tax rates.

Neither of these alternatives is suitable for taxing interstate sales to consumers and exempt organizations and institutions. Zero-rating all such sales would clearly be inappropriate unless buyers were required to self-assess the tax in their state of residence. The self-assessment systems would be difficult to enforce, particularly for individuals, and would also have significant administrative costs. Under the tax credit system consumers would initially pay the tax at the rate applicable in the exporting state and then self-assess for any additional tax in the importing state. This option requires the vendor or the buyer to report such interstate sales so that any taxes collected on them in the exporting state are remitted to the importing state. Buyers and vendors, however, may not have any incentive to report such sales properly. Vendors would view the reporting requirement as unnecessary paperwork, with no fiscal benefit for them. Buyers would report such transactions only if the tax rate in the importing state is lower than in the exporting state. In practice, it is doubtful that such a system would function properly.

Cnossen and Shoup (1987) have suggested that direct sales to consumers be taxed in the state of origin. This is effectively the outcome of the current system with border controls. Very few consumers pay tax at the border on their purchases abroad, given the current tax- and duty-free personal baggage allowances. Explicitly incorporating the origin principle in the legislation would thus be simply legitimizing the current practice for such sales.

It is unlikely, however, that state governments would accept the origin principle for interstate consumer sales. Even if the volume of such sales is small, an explicit recognition of this principle would create incentives for tax avoidance, particularly in states with higher tax rates.

Although their treatment varies from country to country and state to state, interstate consumer sales pose similar problems even under a single-stage retail sales tax. In Canada, for example, most provinces require consumers to self-assess the tax on goods acquired outside the province of residence. They are generally entitled to claim a refund of any taxes paid to the vendor in another province when the goods were purchased. This system is relatively easy to enforce for motor vehicles subject to registration requirements, for purchases by exempt organizations that are required to maintain proper accounts, and for direct shipments by mail-order and catalog-sales establishments. It also works as an effective deterrent against large-scale, tax-motivated interstate purchases by buying groups. It is thus primarily the over-the-counter sales that attract tax in the state of origin, and there is no effective mechanism for a subsequent transfer of funds to the state of destination. The net volume of such interstate sales has not been sufficiently large to be of policy concern.

Administrative and Compliance Issues

Although destination-based taxes allow considerable autonomy to individual states to set tax rates, they do require some degree of interstate coordination for administration and enforcement. The North American experience suggests that a single-stage retail sales tax requires the least amount of interstate coordination. In Canada, for example, all businesses making sales in a given province are licensed for the retail sales tax. This license entitles them to buy goods for resale and production inputs exempt from tax and obliges them to collect the tax on all sales in the province to those without a license (that is, consumers and other exempt entities). The tax does not apply to sales outside the province. The primary areas of interstate coordination

Table 9-1. *Calculation of Federal and State VAT*

Type of tax	*Manufacturer in state A (Sale price = $100)*		*Wholesaler in state B (Sale price = $150)*		*Retailer in state C (Sale price = $300)*		*Final tax allocation*
	Input tax	*Output tax*	*Input tax*	*Output tax*	*Input tax*	*Output tax*	
Federal (tax 4 percent)	0	4	-4	6	-6	12	12
State							
A (tax 3 percent)	0	0	n.a.	0	n.a.	0	0
B (tax 8 percent)	n.a.	8	-8	0	n.a.	0	0
C (tax 6 percent)	n.a.	0	n.a.	9	-9	18	18

n.a. Not applicable.
Source: Author calculations.

under this system relate to the exchange of information to check tax fraud and to apportion tax on interstate transportation and other such items.

In concept, a VAT with zero-rating of interstate sales could function in a manner similar to the retail sales tax. The two differ primarily in the collection of tax on sales within a given state. The option of a VAT with a tax credit clearance mechanism, however, requires mutual agreement among states in several areas. First, it presupposes that the tax is imposed in all of the states, so that the chain of input and output taxes is not broken anywhere through interstate movement of goods. Second, the vendors are required to report their sales to each state separately to allow the taxes to be properly credited to the state of destination. They have to segregate their input taxes by state as well. Third, to minimize the compliance burden on firms, the coverage of the tax, the period for remitting the tax, the accounting standards, and other design features of the tax have to be uniform across the states. The national government can play a very useful role in setting uniform standards for such matters and also in supervising the tax credit clearance mechanism. In fact, it seems most improbable that the states would initiate such a tax and agree on all the issues without the intervention and leadership of the national government.

A Joint National-State VAT

Much of the discussion above is based on the assumption that the tax is imposed only by the state governments. In reality, however, comprehensive consumption (as well as income) taxes are generally imposed by the national governments. In many developing countries individual states may not have the technical expertise to impose such taxes, may find the administrative cost prohibitive in relation to the yield of the tax, and may have difficulty controlling tax fraud because they have no access to the records of vendors outside their jurisdiction. The only viable option for them could thus be to impose their tax as part of a joint national-state tax. One such option of a single national tax with revenue-sharing arrangements was described earlier. This section describes an alternative approach of a joint national-state VAT, which consists of two components: a federal tax imposed at a uniform rate across the nation and a state tax with variable rates across the states.

The mechanics of this tax are relatively simple. Each vendor is required to compute the federal and state taxes on each sale. In all cases the federal tax is calculated at the given uniform rate. The state tax, however, would be that of the state to which the goods are shipped by the vendor. The vendors would report their output tax for the federal and each of the state governments separately at the end of each VAT payment period. Similarly, they would segregate their input taxes for each government. Their VAT liability for the period would be the aggregate of all output taxes (for both levels of government) less the aggregate of all input taxes, which they would remit to a central tax collection agency. The output and input taxes reported by vendors would be credited and debited to the accounts of appropriate governments by the tax collection agency. The net balance in these accounts would be identical to what it would be if the tax were imposed and collected by each government separately at a given rate.

An example in table 9-1 illustrates the calculation of this tax. The manufacturer in state A makes a sale to a wholesaler in state B, who in turn makes a sale to a retailer in state C. Each vendor charges a federal tax and a state tax with federal and state input tax credits. Adding up the negative and positive entries for each government yields a final allocation of $12 to the federal government and $18 to the government of state C (the state of final destination of goods). Given the tax rates of 4 and 6 percent for the federal and state C governments, respectively, this is precisely what they would

have collected under a retail sales tax on a final consumer sale of $300.

A few additional features of this option are worth noting. First, although each sale invoice would have two tax amounts (one for the federal government and the other for the state to which the the goods are shipped), the tax return of the vendors that make interstate sales could potentially have as many output tax entries as there are governments (number of states plus the federal) in the country. The input side of the return would consist of only two entries, on the assumption that all of the purchases by the vendors were taxed at the rate prevailing in the state of their residence. Most small retailers who make sales only within the state would thus normally have only two entries for input taxes as well as output taxes. Larger businesses that make interstate sales should not find the task of having to report more than two output taxes too onerous. Second, because the state tax collected by the vendor is at the rate applicable in the state to which the goods are shipped, this system does not create any cash flow advantage or disadvantage that could otherwise occur under the other options considered earlier. Third, this system does not require each state government to participate in the tax. Any state that does not wish to impose such a tax would be assigned a tax rate of zero. They could also change the tax rate from time to time as they see fit. Fourth, all interstate sales to consumers, including sales through mail order or catalogs, would also be taxable on the basis of destination. This minimizes the need for any separate adjustments for them. The only sales that would be taxable in the state of origin, as opposed to the state of destination, are over-the-counter sales to consumers. As noted earlier, there is no effective way to collect the tax on them on the basis of destination.

This system should not be more administratively onerous than a single national VAT. It is obviously simpler than a system of separate taxes by each government, and it meets the objectives of fiscal autonomy and economic neutrality. It does entail a uniform tax base across all of the states. Although governments may view the loss of their flexibility in changing the tax base as a drawback of this system, from the viewpoint of economic efficiency it could be viewed as a positive feature.

Conclusion

Several options for imposing a general sales tax at the state level have been considered. They differ both in the essential design features and in the need for intergovernmental coordination and harmonization. Although no single option would be suitable in all circumstances, the last option of a joint federal-state VAT provides considerable fiscal flexibility to the subnational governments without sacrificing the advantage of a single uniform tax across the country.

Particular sectors of the economy—such as transportation, banking and finance, insurance, and telecommunications—pose additional problems in applying a sales tax of either origin or destination type at the subnational level. These problems relate essentially to determining the origin or destination of a particular supply. For example, how does one tax a passenger journey originating in state A and terminating in state B, or an interstate long-distance telephone call, or the purchase of fire insurance by an individual resident in state A but for a property located in state B? Banking and financial transactions have the additional problems of how to define the appropriate base for a sales tax and how to segregate consumption and business use portions of the base.

These problems are by no means unique to a tax at the subnational level. They arise in varying degrees at the national level as well. No national government has been able to apply a sales or value added tax to the banking and finance sector, and many exempt them from tax altogether, in part because of difficulties in segregating the domestic and foreign components of value added. Similarly, the national tax systems contain special provisions for transportation across borders.

It is noteworthy that the smaller the area of jurisdiction of a government, the more significant such sectors become in the overall design of the tax. For example, although international travel may account for a small portion of total transportation expenditures by residents of a nation, travel to and from a state would be a much larger portion of such expenditures by the residents of the state. As a result, if out-of-state travel were to be zero-rated, following the treatment of international travel in several VAT countries, it would have a relatively larger effect on the VAT base and revenue at the state level. Thus, subnational governments may not be able to apply a consumption tax on a base as comprehensive as that of the national government, particularly if both governments impose the tax individually, rather than jointly.

Notes

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1. For a discussion of the merits and role of a value added tax in state finances, see Kleine (1984) and Shannon and Gabler (1972).

2. Many of these problems are equally applicable to a value added tax that extends to the retail stage. For this rea-

son several developing countries do not extend their sales taxes beyond manufacturers or wholesalers.

3. It has been suggested that in Sweden the concern about tax evasion under the retail sales tax of more than 10 percent was a factor in the decision to switch to a value added tax.

4. The value added tax in Mexico is also collected by the state governments. This model, although generally successful in Germany, has given rise to significant difficulties of intergovernmental coordination in Mexico.

5. For a summary discussion of the conditions for the economic neutrality of an origin-based tax, see Cnossen and Shoup (1987).

6. Taxation of *interstate* flows on the basis of the origin principle and of *international* flows on the basis of the destination principle could produce significant distortions in the interstate allocation of tax revenue, particularly when some states are net importers domestically but net exporters internationally. For a discussion of the tax implications of such a triangular trade pattern in Brazil, see Longo (1982).

7. For a detailed description of the Brazilian VAT, see Guerard (1973) and Longo (chapter 11 in this volume).

8. It is also possible that a large variation in interstate tax rates would provide retail firms an incentive to commit fraud. For example, a multiestablishment firm could record a portion of its consumer sales in the high-tax state as sales in the low-tax state and thereby pocket the tax difference. Similarly, a firm could purchase in the low-tax state and sell in the high-tax state, both unrecorded, and make a substantial profit entirely from the difference in the rates.

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Part III

Lessons from the Experience of Developing Countries

10

The VAT in Argentina

Osvaldo Horacio Schenone

Argentina imposes an income-type VAT that extends through the retail level and is based on the destination principle. It was adopted in 1974 to replace a sales tax that had been adopted in the mid-1930s. Initially levied at a rate of 1.25 percent, the sales tax was subsequently raised to 10 percent. Higher rates (up to 20 percent) applied to durable goods, and certain goods for mass consumption were taxed at 3 percent. Agriculture and wholesale and retail trade were exempted from the sales tax, which until 1970 fell on manufactures only. Construction and certain services became subject to the tax in 1970.

The sales tax base was given by the value of sales minus the value of inputs physically embodied in the goods being sold. No allowance was made for capital investment until 1970, when a tax deduction of 25 percent of capital invested was introduced. The deduction was increased to 50 percent in 1971.

History of the VAT

The Argentinean government began studying the VAT in 1968. A team of experts was sent to Europe to gather information on the practical aspects of implementing the tax. The team visited Denmark, France, the Federal Republic of Germany, and the Netherlands and interviewed four groups of people in each country: public officials in tax administration bureaus; economists, both government and private; entrepreneurs, individually and as members of a chamber of commerce, industry, or agriculture; and private tax consultants.

After listening to diverse opinions about the desirability of adopting the VAT, the team concluded that substituting a VAT for the sales tax in Argentina would improve the tax system. In reporting its recommendations, however, the team noted that other improvements were more urgently needed, such as changes in the income tax. The team also expressed concern

Table 10-1. *Sales Tax and VAT Revenue as a Percentage of Total Tax Revenue and GDP*

Year	*Total tax revenue*	*GDP*
	A. Sales tax	
1966	19.3	2.3
1967	14.2	1.9
1968	14.4	2.0
1969	14.3	1.9
1970	12.8	1.7
1971	14.6	1.7
1972	13.0	1.4
1973	10.7	1.2
1974	11.9	1.6
	B. VAT	
1975	20.8	1.7
1976	21.0	2.3
1977	19.0	2.9
1978	21.5	3.1
1980	23.9	4.1
1981	23.4	4.8
1982	—	3.7
1983	—	3.1
1984	—	2.6
1985	18.9	—

— Not available.

Source: Direccion General Impositiva and Secretaria de Hacienda, Ministerio de Economia.

Table 10-2. *Registered Taxpayers, 1974–82*

Year	*Number of taxpayers*
1974 (sales tax)	180,992
1975 (VAT starts)	262,498
1976	305,649
1977	353,982
1978	387,755
1979	434,189
1980	824,638
1981	922,274
1982	974,475

Source: Direccion General Impositiva.

about the administrative cost of switching over to a VAT system and the revenue that could be lost during the transition.

This reluctance to make a drastic change and concern about reduced revenues during the transition may explain why it took so long to adopt the VAT. Indeed, in its early years the VAT resembled its predecessor. Almost three-fourths of the VAT collected in 1975 came from the manufacturing sector, which had previously borne the brunt of the sales tax.

Nevertheless, compared with the sales tax, the VAT has accounted for substantially larger shares of total tax revenue and GDP. As shown in table 10-1, the contrast is particularly strong after 1975, the first year of the VAT.

Since the VAT was adopted to replace the sales tax, which was not the main component of the tax system, it is hardly surprising that the VAT has never accounted for more than 25 percent of total revenue, excluding social security contributions (or around 15 percent if social security is included in the total).[1] In 1985 VAT collections amounted to 18.9 percent of total revenue (excluding social security contributions), and the share was expected to rise to 19.8 percent in 1986.

One reason for the stronger revenue performance of the VAT, compared with the tax it replaced, was the inclusion of a significantly larger number of firms in the indirect tax base under the VAT. By 1977, the third year of the VAT, there were twice as many registered taxpayers as there had been under the sales tax (see table 10-2). The sharpest increase in the number of taxpayers occurred in 1980, when the VAT base was broadened to include the following sectors: mining; electricity, gas, and potable water; and communications, transport, and storage.

The VAT rate was set in 1974 at 16 percent and was raised in 1980 to 20 percent. (Small exceptions to the standard rate have been added or eliminated almost every year. Foodstuffs and pharmaceuticals, for example, were taxed at 10 percent.)

As shown in table 10-1, indirect tax revenue did not change much after the VAT replaced the sales tax: in 1976 VAT revenue as a percentage of GDP equaled that of the sales tax in 1966; it was only after the VAT coverage was substantially improved in 1980 that the revenue as a percentage of GDP rose, although it fell again in 1983 and 1984.

Tax Treatment of Exports and Imports

In Argentina, as in many other countries, the VAT base differs from GDP mainly because exports are exempted from the tax and imports are taxed. The tax base is thus gross domestic expenditure (GDE) rather than value added in the economy. Neutral treatment of tradable and nontradable goods is preserved by taxing imports and exempting exports. This can be seen by considering an economy with a fixed exchange rate and downward-inflexible factor prices. In such an economy the imposition of a VAT at rate t percent must yield a t percent increase in the general price level.[2] If exports were taxed and imports exempted (that is, if the tax base were precisely the value added of the economy), the price of tradable goods would fall in relation to the price of nontradables. To avoid such a tax-induced distortion in relative prices, exports should be exempted from, and imports should be subject to, the VAT. Then, other things being equal, all nominal prices will increase by t percent, relative prices will remain undistorted, and the tax base will be not value added but domestic expenditure (consumption plus investment).

If, however, factor prices are fully flexible or the exchange rate is allowed to float freely, the effect of the VAT on the relative prices of tradables and nontradables will not depend on whether imports are taxed and exports exempted or vice versa; that is, the effect will be the same whether the tax base is value added or domestic expenditure of the economy. Three cases, then, arise in which the VAT treatment of imports and exports does not alter the neutrality of the tax: (a) the exchange rate and factor prices are flexible, (b) the exchange rate is flexible and factor prices are not, and (c) the exchange rate is fixed and factor prices are flexible.

Consider, for example, the second case—inflexible factor prices and a floating exchange rate. If a VAT is imposed and imports are taxed and exports exempted, their prices will rise in tandem with the price of nontradables, so that all relative prices will remain unaltered. If imports are exempted and exports are subject to the VAT, there will be a tendency to increase imports and decrease exports. This will increase the exchange rate until equilibrium is restored and the relative prices of tradables and nontradables return to their original levels. The allocation of resources does not change, regardless of the VAT treatment of exports and imports.

This result holds if either the exchange rate or factor prices (or both) are freely flexible. If both are fixed, the VAT will be neutral with respect to the allocation of resources if exports are exempted and imports are taxed.[3]

Thus the tax treatment of exports and imports—and the issue of whether the tax base is GDE or value added—is not a source of distortions in relative prices or in the allocation of resources in Argentina. The imperfections of the VAT in Argentina are not related to the external sector. They are caused by (a) the type of VAT adopted, (b) the use of exemptions to promote regional or sectoral objectives, and (c) the exclusion of certain sectors from the system.

The Type of VAT

The consumption-type VAT is used throughout Europe. Argentina, however, adopted the income type, with one qualification: true economic depreciation is not allowed. A legal rate of depreciation of 20 percent was established in 1974 (and changed to 33 percent in 1983). The literature maintains that the income VAT discriminates against capital accumulation and in favor of present consumption, unless the supply of savings has zero interest elasticity. This discrimination occurs because investors are induced to make their decisions based on a private rate of return which is lower than the social rate of return.

The consumption VAT, in contrast, allows for the instantaneous depreciation of capital equipment. In equilibrium the price of a capital good equals the present value of the expected flow of income from the good; therefore it is this flow which would be free of tax under a consumption VAT. In particular, such a VAT does not exempt the income from capital over and above the level of income whose present value equals the price of capital goods. In other words, pure profits, in the sense used by Frank Knight, are not exempt by definition.

Because consumption expenditures represent a higher proportion of income for poor families than for rich families, the consumption VAT is thought to be regressive. Sometimes a numerical example is used to illustrate this view: consider the effects of a consumption VAT of 20 percent on Mr. Rich, who has an income of $1,000, and Mr. Poor, who has an income of $100. After satisfying his most essential needs at a cost (net of taxes) of $80 and incurring $20 in VAT, Mr. Poor has no savings. In contrast, Mr. Rich spends $400, pays $100 in VAT, and saves $500. Because the tax takes up 20 percent of Mr. Poor's income but only 10 percent of Mr. Rich's, it is said to be regressive.

The problem with this argument is it ignores what happens in the future. Assume that these individuals live for one more period and earn their same respective incomes in the second period. (For simplicity, also assume a zero interest rate.) In the second period Mr. Rich exhausts both his savings and his second-period income when he consumes $1,200 and pays $300 in tax. This tax burden represents 30 percent of his second-period income, whereas Mr. Poor will again end up paying 20 percent of his income in taxes. Over their lifetimes both men spend 20 percent of their respective incomes on taxes; hence the consumption tax is not regressive but proportional when considered from the proper perspective of a lifetime.[4]

Regional and Sectoral Promotion

VAT exemptions are common in Argentina and are of two types. First there are what could be called false exemptions. These are granted on the grounds that the "exempted" value added will be taxed in a subsequent stage of production where collection will be easier and cheaper. Not only does this procedure not exempt anything, it generates additional tax liability because the "exempted" taxpayers cannot claim a fiscal credit for the VAT embodied in the prices of their inputs.

The second type may be called true exemptions (also called zero-rated status). These are granted to exports and certain other activities. The exemptions are "true" because both those who engage in such activities and their customers get a fiscal credit for the VAT they pay on their inputs. And because the exempted taxpayers include the VAT in their invoices (to enable their customers to claim a fiscal credit) but do not pay it to the treasury, the promoted activity, rather than the government, collects the tax.

Although exports are usually exempted on efficiency grounds, other activities are zero-rated without clear justification. These activities may be located in poor regions of the country or may be deemed especially desirable for noneconomic reasons. Unfortunately, a quantitative analysis of these exemptions is impossible, owing to the scarcity of information on the number of zero-rated exemptions granted each year and the fiscal costs involved.

Nevertheless, these privileges clearly create incentives to waste resources in unproductive investments. Moreover, they encourage activities that are unlikely to benefit the poor regions of the country they were intended to promote. For example, say that for the purposes of regional development an exemption is granted to firms which locate in Catamarca province. One of these firms buys a product from a firm in Buenos Aires in a transaction subject to the VAT. Once the goods arrive in Catamarca, the local firm (which may, and usually does, belong to the firm in Buenos Aires) sells the goods (probably in Buenos Aires or nearby) subject to

Table 10-3. *VAT Exemptions as a Percentage of VAT Revenue*

Year	*Exemptions granted to sector 3*	*Exemptions granted to other sectors*	*All exemptions*
1975	n.a.	n.a.	2.38
1976	n.a.	n.a.	2.51
1977	n.a.	n.a.	2.34
1978	2.44	0.38	2.82
1979	1.85	0.46	2.31

n.a. Not applicable.
Source: Aguirre (1981).

a zero VAT and claims a fiscal credit for the VAT it paid when it purchased the goods—which is precisely the amount of tax paid by the firm in Buenos Aires. If the firm in Catamarca exists on paper only and the two firms are really one and the same, the firm ends up paying no VAT, and the goods may never be shipped further than from one warehouse to another (both of them probably in Buenos Aires). In this case no benefits whatsoever accrue to the poor inhabitants of Catamarca.

The sketchy information available suggests that these exemptions reached modest values in 1975–79. According to Aguirre (1981) such exemptions amounted to around 2.5 percent of the VAT revenue, and more than 80.0 percent of these exemptions accrued to industrial manufactures (sector 3) in 1978 and 1979 (see table 10-3). These percentages severely underestimate the value of exemptions. The data in table 10-3 come from firms which produced both exempted and taxed goods; since firms that produce only exempted goods do not submit VAT statements, the value of their exemptions is unknown and could not be included in the table.

Excluded Sectors

The exclusion of certain sectors from the VAT system generates an implicit tax, over and above the VAT itself, on their purchases from other firms in the system. In practice, the VAT liability is calculated as the difference between the so-called fiscal debit, which is equal to the tax rate times the value of the good or service sold, and the fiscal credit, which is equal to the tax already included in the price of the inputs in the production of those goods and services. Inputs that do not generate a fiscal credit (that is, exempted inputs) are treated as value added for purposes of the VAT.

Argentina's VAT system illustrates the rule of the implicit tax. Until May 1983 the agricultural sector was excluded from the system; that is, its sales to sectors within the VAT system were exempt and its purchases of taxed inputs did not generate a fiscal credit. This meant that the use of agricultural products as inputs by other sectors would not generate a fiscal credit for those sectors; that is, inputs of agricultural origin would be treated, for VAT purposes, as value added of the sectors that use those inputs. Thus the exemption of the agricultural sector implied that the value of its sales to the industrial sector (and certainly the value added in those sales) was taxed exactly as industrial value added. The agricultural sector's sales to final consumers, however, were subject to the VAT.

Even though the agricultural value added turns out to be taxed (as all value added in the economy), the neutrality of the tax with respect to resource allocation is distorted by the lack of fiscal credit for the purchases of taxed inputs by the agricultural sector. A common way to compensate for this distortion is to grant the users of agricultural products an arbitrary rule-of-thumb deduction, a so-called presumptive fiscal credit on the value of their purchases of agricultural goods. The rate is usually equal to a fraction of the VAT rate. In Argentina the *users* of agricultural products were allowed to deduct from their VAT liability 4 percent of the total value of those purchases. Nevertheless, the presumptive fiscal credit is merely a subsidy on agricultural production sold to industry. It cannot neutralize the implicit tax on industrial inputs bought by agriculture, and therefore the effect on resource allocation persists.

These features of the value added tax in Argentina have been modeled (Schenone 1987, appendix). The results of that analysis indicate that the lack of fiscal credit for the purchases of taxed inputs by the agricultural sector has the following consequences:

1. It raises the relative prices of agricultural goods.
2. From the viewpoint of agricultural producers, however, it lowers the price of their output in relation to the price of their industrial inputs.
3. It reduces the demand for agricultural goods by final consumers and increases their demand for industrial goods.
4. As a consequence of (1), the intensity of agricultural goods in industrial production falls.
5. As a consequence of (2), the intensity of industrial goods in agricultural production falls.
6. Because this distortion generates substitution and scale effects of opposite signs, the net effect on the

absolute quantity of agricultural (industrial) goods used in the production of industrial (agricultural) goods is indeterminate.

Under the ideal VAT system, the share of the i^{th} sector in GDP, g_i, would equal the sector's share in VAT revenue, v_i. In practice this may not be the case. One reason is differential evasion across sectors; another is the existence of so-called false exemptions or excluded sectors. According to the previous discussion, a sector i with a v_i substantially lower than g_i is likely to be a sector which ends up paying the VAT (unless it sells to final consumers only) but does not get credit for the tax included in its inputs' prices. In contrast, a sector j with a g_j substantially lower than v_j is likely to be a sector whose tax base for VAT purposes includes purchases from excluded sectors, as well as its own value added. Of course this does not mean that sector j is more heavily taxed than other sectors; in addition to paying its own VAT, it collects tax on the value added by the excluded sectors from which it buys its inputs.

Data from Argentina on the nine sectors of the national accounts have been compiled for the period 1975–81 in table 10-4. Although the share of agriculture in GDE remained around 9 percent throughout the period, its share in VAT revenue never reached half of 1 percent. Except for sales to final consumers (a small fraction of total production) and exports (which are truly exempted—zero-rated—and account for about a third of the sector's production), the value added of agriculture was taxed at the next stage in the production process, and the inputs of the sector did not generate any fiscal credit. In contrast, although the manufacturing sector's share in GDE, g_3, remained around 30 percent throughout the period, its share in VAT revenue, v_3, started off at about 75 percent in 1975 and declined steadily to about 46 percent in 1981. What happened is the manufacturing sector's performance as collector of the tax on other sectors' value added was curtailed as these sectors (mining; electricity, gas, and potable

Table 10-4. *Sector Shares in VAT Revenue and GDE, 1975–81*
(percent)

Sector and source	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*
Sector 1							
g_1 [a]	8.9	9.7	8.3	8.7	7.8	7.3	7.5
v_1 [b]	0.1	0.0	0.1	0.0	0.2	0.2	0.4
Sector 2							
g_2 [a]	2.1	2.3	2.3	2.5	2.4	2.4	2.6
v_2 [b]	0.3	0.7	0.8	0.8	1.0	2.4	3.6
Sector 3							
g_3 [a]	34.0	30.8	30.9	27.6	29.7	32.5	28.6
v_3 [b]	74.6	69.6	65.4	66.8	66.4	59.6	46.4
Sector 4							
g_4 [a]	2.8	3.1	3.1	3.4	3.3	3.4	3.7
v_4 [b]	0.0	0.2	0.1	0.2	0.2	3.6	11.5
Sector 5							
g_5 [a]	5.7	6.8	7.3	7.6	7.2	7.5	7.8
v_5 [b]	5.1	7.6	9.6	9.6	8.9	7.4	5.5
Sector 6							
g_6 [a]	14.4	14.4	14.7	14.4	14.2	13.8	13.6
v_6 [b]	15.9	17.6	19.5	18.4	18.6	20.4	22.4
Sector 7							
g_7 [a]	10.6	11.1	11.1	11.4	11.1	10.5	11.1
v_7 [b]	0.5	0.9	1.0	0.9	0.6	2.2	5.4
Sector 8							
g_8 [a]	6.8	6.9	7.5	8.4	8.1	8.7	9.1
v_8 [b]	1.0	1.3	1.2	1.3	1.6	1.6	1.5
Sector 9							
g_9 [a]	14.8	15.7	15.0	15.9	14.4	14.3	16.0
v_9 [b]	2.3	1.9	2.0	1.9	2.2	2.6	3.2

Notes: Sector 1: Agriculture, hunting, fishing, and forestry. Sector 2: Mining. Sector 3: Manufactures. Sector 4: Electricity, gas, and potable water. Sector 5: Construction. Sector 6. Wholesale and retail trade. Sector 7: Communication, transport, and storage. Sector 8: Insurance, banking, and professional services. Sector 9: Other services.

a. Data from Banco Central de la Republic Argentina, "Estimaciones Trimestrales sobre Oferta y Demanda Globales," and Ministerio de Economia, Secretaria de Comercio "Boletin de Comercio Exterior Argentino," no. 16 (Cuadro III 1.3).

b. Unpublished data from Direccion General Impositiva.

water; and communications, transport, and storage) were gradually brought into the VAT system.

Another sector which collected the tax on other sectors' value added was wholesale and retail trade. As shown in table 10-4, for every year between 1975 and 1981 g_6 was less than v_6.

The fact that $v_3 + v_6 = 90.5$ percent in 1975 means that sectors 3 and 6 (manufactures and trade respectively) collected VAT for almost all sectors in that year, creating the already mentioned lack of fiscal credits to all other sectors with v_i less than g_i. The situation improved over time, particularly after the 1980 reform brought most sectors into the VAT system. The main distortion still evident in 1981 arose from the exclusion of sectors 1, 8, and 9 (agriculture, financial institutions, and other services, respectively). Sectors 2 and 4 (mining; and electricity, gas, and potable water) joined sectors 3 and 6 in 1980 as the sectors with v_i more than g_i; in other words, the responsibility of these four sectors for collecting VAT for other sectors diminished after the 1980 reform, as shown below.

	Percentage of VAT revenue	*Percentage of GDP*
1980	86.0	52.1
1981	83.9	48.5

A significant change—whose effects cannot yet be ascertained because of the lack of data—took place in May 1983: sector 1 (agriculture) was included in the VAT system by virtue of Law 22817. The procedure is peculiar, however: agricultural producers can claim the VAT fiscal credit only against their income tax and capital tax liabilities. Thus an agricultural producer who does not make any taxable income in a particular year cannot get the VAT fiscal credit corresponding to that year's purchases. There is no justification for such an exclusion; purchases subject to VAT should give rise to a fiscal credit regardless of the profitability of the operation.

The 1980 reform, which broadened the scope of the VAT system to include most sectors, was intended to substitute for twenty-three small taxes (the most important of which was a payroll tax) which were lifted at the time. Since the revenue from these taxes was approximately equal to the VAT revenue, the VAT revenue should have doubled. However, as shown in table 10-1, this did not happen, and most of the small taxes, including the payroll tax, were imposed again in 1983 and 1984.

Conclusion

The VAT in Argentina has not been a successful source of revenue. Except for 1980–82, VAT revenue did not rise above 3 percent of GDP and remained substantially below that level most of the time. This is only modestly better than the revenue performance of the sales tax, which raised revenues of 1.5 percent to 2.0 percent of GDP. Although the available evidence is sketchy, exemptions to promote sectoral and regional objectives are a likely cause of the poor revenue performance of the VAT in Argentina. Another leading culprit would be tax evasion, but little is known about the extent of this phenomenon in Argentina.

As for the VAT's effect on allocative efficiency, two points should be stressed. First, because the VAT in Argentina is of the income type, the choice between consumption and saving is likely to be distorted; and second, the existence of sectors outside the VAT system is likely to undermine the neutrality of the tax with respect to the allocation of resources.

A change toward a consumption-type VAT with broad coverage would promote efficiency from the viewpoint of both capital accumulation and the composition of current consumption. Other changes needed to improve the VAT in Argentina include (a) abstaining from using it as an instrument for sectoral or regional promotion, and (b) making the legislation more stable by preventing frequent and unpredictable changes in the base or rate of the tax.

Notes

1. These are approximately the same percentages observed in Italy. See the paper by Antonio Pedone in Aaron (1981).
2. With a fixed exchange rate, the nominal quantity of money will automatically adjust, as a result of changes in central bank reserves, to restore equilibrium in the money market.
3. For a complete discussion of this issue, see Schenone (1981).
4. For a complete discussion of this issue see Wisecarver (1980).

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11

The VAT in Brazil

Carlos Longo

Until the mid-1930s, there were virtually no significant taxes in Brazil. Federal and state governments collected the bulk of their revenues from a variety of limited taxes and tariffs on trade and business. Tax provisions of the 1934 constitution sought to broaden the scope of taxation by consolidating some of the scattered levies. As a result, a personal income tax began to be collected by the federal government, a turnover sales tax by the states, and an urban property tax by local governments. These taxes did not become relevant sources of revenue until later, however. In the meantime, the federal government collected much of its revenue from import tariffs and excises on liquor and tobacco, while the states depended heavily on export and import taxes. In 1965 a major tax reform was enacted by constitutional amendment.

In 1966, the last year before the new tax regime was implemented, income taxes and various single-stage wholesale consumption taxes (on cigarettes, liquor, and luxury items) accounted for about 75 percent of total revenue at the federal level—excluding social security. At the state level, the turnover sales tax was the most important source of income, having gradually overtaken the taxes on trade. The sales tax now accounted for 80 percent of total state revenue. The states had long had absolute control over their own tax base and rates, and their tax rates differed according to local conditions and needs. In 1959 the sales tax rates ranged from 3 percent to 5 percent; by the eve of the reform, they ranged from 4 percent to 7 percent.

In the past twenty years, national tax revenues (excluding social security) as a share of gross domestic product have fallen abruptly—dropping from about 17 percent to 12 percent. This reduction came about largely because expenditure on traditional public sector activities (such as education, health, defense, and law and order) gave way to the expansion of public services that are financed with specific contributions or are self-supporting—social security and government enterprises. At present, the federal government collects 56 percent of the nation's tax revenue, the states 38 percent, and municipalities 6 percent. If intergovernmental transfers are taken into account, however, the fed-

Table 11-1. *National Tax Revenue, by Level of Government, Selected Years 1965–85*
(percent)

Year	*Federal*	*State*	*Municipal*
Before intergovernmental transfers			
1965	51.0	43.0	6.0
1970	54.0	42.0	4.0
1975	58.0	37.0	5.0
1980	58.0	36.0	6.0
1983	57.0	37.0	6.0
1984	56.0	38.0	6.0
1985	56.0	38.0	6.0
After intergovernmental transfers			
1965	39.0	48.0	13.0
1970	46.0	39.0	15.0
1975	50.0	36.0	14.0
1980	49.0	35.0	16.0
1983	48.0	35.0	17.0
1984	46.0	36.0	18.0
1985	46.0	36.0	18.0

Note: Data for 1985 are estimates.
Source: Ministerio da Fazenda, Secretaria de Recéita Federal, Coordinação de Actividades Especiais.

eral government collects 46 percent, the states 36 percent, and municipalities 18 percent. Over the past twenty years, the federal government's and municipalities' share of total tax revenue has increased at the expense of the states; highly centralized tax legislation and the pressing needs of local governments—urged by accelerated urbanization—explain, to a great extent, this redistribution (see table 11-1).

The 1965 tax reform, which was incorporated with negligible changes into Law 5172 of the National Tax Code in 1966, grouped existing taxes into four categories according to their economic base—external trade, income and wealth, production, and special taxes—and assigned each tax to a specific level of government. This reform abolished numerous taxes on specific activities, such as license and stamp taxes, which were similar to the cascade turnover tax.

The state turnover tax was replaced by a state VAT, the federal wholesale tax by a federal VAT.[1] Local taxes on specific businesses and trades were transformed into general municipal service taxes. Exports as well as imports became exclusive bases of federal taxation, at which level taxes continued to be collected on fuels (gasoline, oil, natural gas), electricity, and minerals. Real estate taxes remained a local source of revenue, albeit insignificant.

With small changes in the previous tax-sharing regime, the 1965 reform distributed 20 percent of the revenues from federal income and value added taxes to states and municipalities. Soon after the reform, this share was reduced to 10 percent, but it gradually returned to 20 percent by 1975; since then, it has grown to 30 percent. Federal excises collected on energy and minerals continue to be shared with lower levels of government. Various sharing schemes apply, with shares determined by such factors as the source of revenue, the population, and the inverse of income per capita. The reform also established that 20 percent of the revenue from the state VAT belonged to the municipalities in which it was raised.

Traditionally, the constitution and federal laws precluded taxation at lower levels of government in Brazil. This pattern of centralization was accentuated by the reform of 1965. As a result of the reform, states lost the limited power they had to create new taxes. Furthermore, absurd rigidities were introduced in the law; rates and exemptions of the state VATs had to be virtually uniform across commodities and jurisdictions.

Value added taxation was introduced in Brazil when the European Economic Community (EEC) was still considering its adoption. Even today the Brazilian VAT has a pioneer flavor. When a new tax is adopted in a federal country, states face different issues from those faced by the member countries of a free trade area. Conditions also differ depending on whether the VAT replaces other sources of revenue or is considered simply a complement to existing taxes. When the new tax brings in supplementary revenue for a single level of government, for example, conflicts between jurisdictions caused by discrepant rates and exemptions are minimal. (For a detailed discussion of these issues, see chapter 9 of this volume.)

Even though the Brazilian state VAT is fairly comprehensive and was meant not as a fundamentally new tax but as an improvement over its predecessor, the turnover tax, it immediately gave rise to conceptual and practical difficulties. Disputes continue among state representatives and between them and the central government concerning the proper composition of the tax base (Longo 1982).

Basic Structure of the VAT

The federal VAT is a selective tax on manufactured goods. Various rates apply—from 4 percent on cement to 365 percent on cigarettes—and cigarettes, beverages, and automobiles account for 60 percent of the revenue from VAT. The credit method of tax collection is used. Imports are taxed (deferral is allowed until the first sale), exports are exempt, and cash rebates are usually granted. In the late 1960s, the VAT accounted for half of all federal tax revenue but now accounts for about 20 percent; meanwhile, new forms of indirect taxation, such as taxes on gross revenues and wage contributions, were created and earmarked for social security, public investment, and expenditures for the poor. Recently, revenue from income tax has far surpassed that from the federal VAT (see table 11-2).

The state VAT applies to most stages of production and distribution, including retail sales. It is applied according to the credit method of tax collection; cash rebates are not granted, except for exports. In practice, an approximation of the consumption-type VAT was enforced until recently. Sales of many types of capital equipment were exempt, but no credit was allowed for the VAT paid on purchases of permanent assets. Office machines, furnishings, transport equipment, and similar items were included in the tax base, since they were not explicitly exempt. Through 1987, however, this exemption will be phased out except on interstate sales from southern states, leaving a gross product type of VAT in its place. (For a detailed description of the VAT basis and collection methods, see chapter 1 of this volume.)

The state VAT falls short of encompassing a comprehensive base. The service sector is excluded, as are fuels, electricity, mining, and other activities taxed as excises at the federal level. There is little preferential treatment in the form of explicit rate differentiation. A few exemptions are granted by interstate covenants, which are subject to tight federal controls. Other ex-

Table 11-2. *Federal Tax Revenue, by Source, 1968–85*
(percent)

Year	Income tax	VAT	Tax on finance	Tariffs	Excises	Charges	Other
1968	21.85	51.03	n.a.	8.20	18.00	0.92	n.a.
1969	26.15	46.89	n.a.	7.49	17.83	1.64	n.a.
1970	26.55	46.11	n.a.	7.21	18.28	1.85	n.a.
1971	26.20	45.97	n.a.	7.28	17.67	2.88	n.a.
1972	29.03	43.29	n.a.	7.67	17.09	2.92	n.a.
1973	27.50	42.65	n.a.	8.20	15.97	5.67	n.a.
1974	28.83	41.62	n.a.	10.14	13.64	5.77	n.a.
1975	38.25	35.86	n.a.	9.52	11.57	4.80	n.a.
1976	36.72	31.93	n.a.	9.13	17.93	4.29	n.a.
1977	39.72	30.22	3.57	6.95	15.13	4.41	n.a.
1978	40.54	29.91	3.77	6.39	14.26	4.28	0.85
1979	42.62	28.92	4.25	6.41	12.75	4.20	0.85
1980	40.03	25.97	10.18	9.33	7.34	6.21	0.94
1981	42.01	26.09	12.15	6.60	6.04	5.56	0.95
1982	43.96	27.72	11.67	5.06	5.60	4.93	0.86
1983	53.36	25.02	7.09	6.38	5.06	3.32	0.77
1984	56.78	21.45	8.20	5.49	4.86	2.50	0.72
1985	58.97	20.91	5.48	6.58	4.11	1.83	1.99

n.a. Not applicable.
Note: Data may not sum to totals because of rounding.
Source: Ministerio da Fazenda, Secretaria de Recéita Federal, Coordinação da Actividades Especiais.

emptions have been granted by the constitution: books, newspapers, and printing paper, as well as exports of manufactured goods. A limited number of unprocessed goods and some agricultural produce are also exempt.

The VAT, like its prereform predecessor, has been essentially the only source of tax revenue administered at the state level. It does not follow, however, that all states either depend exclusively on this tax or borrow (borrowing is made difficult by stringent federal controls). Many states, mostly the poor ones of the north and northeast, count heavily on transfers of revenue from federal income, value added, and excise taxes to finance as much as half of their budget (see table 11-3).

The current state VAT rate is 17 percent on sales within a state, 12 percent on interstate sales (in the case of shipments from the southern and southeastern states to the northern, northeastern, and middle-western states a 9 percent rate applies). The effective rate is higher, because the tax is included in the tax base. Since the tax paid to the state of origin is set off against the tax liability in the state of destination, the importing state appropriates the difference between the internal and the interstate rate (see table 11-4).

The problems of distributing revenue from interstate taxes, although not peculiar to the VAT, are more evident under the VAT than under the turnover tax. Unless goods that cross borders can be double-taxed, levies against the VAT must be accompanied by appropriate border tax adjustments.[2] Applying the origin or the destination principle may unduly benefit states that are net exporters or net importers, if the tax coverage is not comprehensive or trade is not balanced. (For a documented review of this literature, see chapter 4 of this volume.)

The Neumark Committee recommended in vain that the EEC adopt the origin principle for intercommunity trade, under the unnecessary assumption that this principle would be required if border controls were abolished. The Neumark prescription may have been an important factor when decisions had to be made in Brazil on how to treat interstate sales.[3] Since no tax rebates were ever considered under the turnover sales tax, the origin principle was adopted for interstate trade, but unanticipated difficulties led Congress, shortly after the new tax took effect, to pass laws introducing slight rate differentiation among states (classified by regions) and types of transaction (internal or interstate).

The southern industrialized states of Brazil have had perennial trade surpluses with the rest of the country and trade deficits with other countries. Poorer states of the north and northeast are net importers from the south and net exporters abroad. To avoid revenue redistribution in favor of the southern producer states, Congress passed a law requiring that there be a differential of three percentage points between the tax rate on goods traded internally in the importing states and the tax rate on interstate exports at the state of origin. This gap, however, proved insufficient to redress revenue losses, so the rate differential was gradually increased to the present eight percentage points.

The tax reform of 1965 constitutionally excluded ex-

Table 11-3. *State Tax Revenue, 1985*

Region and state	Total (billions of cruzados)	From state taxes[a]		From revenue sharing	
		Billions of cruzados	Percent	Billions of cruzados	Percent
North	2,172	708	32.6	1,463	67.4
Acre	255	21	8.3	234	91.7
Amazonas	485	254	52.4	231	47.6
Pará	724	366	50.5	358	49.5
Amapá	176	n.a.	n.a.	176	100.0
Rondônia	364	66	18.4	297	81.6
Roraima	166	n.a.	n.a.	166	100.0
Northeast	9,442	5,593	59.2	3,848	40.8
Maranhão	711	253	35.6	457	64.4
Piauí	448	119	26.6	329	73.4
Ceará	1,201	719	59.9	482	40.1
Rio Grande do Norte	420	141	33.6	279	66.4
Paraíba	654	308	47.1	346	52.9
Pernambuco	1,670	1,151	68.9	518	31.1
Alagoas	632	406	64.3	225	35.7
Sergipe	373	123	33.0	250	67.0
Bahia	3,328	2,370	71.2	957	28.8
Middle-West	3,926	2,548	64.9	1,377	35.1
Mato Grosso	1,238	679	54.9	559	45.1
Mato Grosso do Sul	783	630	80.4	153	19.6
Goiás	930	772	82.9	158	17.1
Distrito Federal	973	467	48.0	506	52.0
Southeast	31,699	28,671	90.4	3,028	9.6
Minas Gerais	5,493	4,614	84.0	878	16.0
Espírito Santo	919	590	64.3	328	35.7
Rio de Janeiro	6,483	5,983	92.3	500	7.7
São Paulo	18,803	17,482	93.0	1,321	7.0
South	10,281	8,814	85.7	1,467	14.3
Paraná	4,146	3,666	88.4	480	11.6
Santa Catarina	1,516	1,101	72.6	415	27.4
Rio Grande do Sul	4,617	4,046	87.6	571	12.4
Total for all states	57,522	46,336	80.6	11,185	19.4

n.a. Not applicable.

Notes: Data are estimates. Data may not sum to totals because of rounding.

a. Includes ICM and ITBI.

Source: *Revista de Financas Publicas*, 45, no. 361 (January–March 1985): 85–87.

ports of industrial goods from the state VAT base. This was a direct outcome of federal trade policy; between 1967 and 1975, federal laws required states to double VAT tax rebates on exports at their own expense. Tax rebates were extended even to domestic activities indirectly related to exports, such as shipbuilding and domestic sales of trading corporations. Some rebates on exports of primary goods were granted through interstate tax agreements arranged by the federal government. As a result of those incentives, states lost a significant amount of revenue. Since 1975, however, this trend has been reversed. Increased revenue sharing, higher tax rates, and fewer rebates have all gradually improved the states' economic status.

Exports of primary goods were not constitutionally excluded from the VAT base because most nonindustrialized states, being net exporters, would be especially harmed by such a provision. Such exports, therefore, are taxed, but at a slightly reduced rate (13 percent). Nevertheless, the law has been loosely interpreted; rebates are not granted unless the cost of primary goods is greater than half of the export price.

Exclusions and Exemptions

The state VAT base does not include fuels, but, for the benefit of poor states, which need the revenue, simple foodstuffs, such as rice and beans, are fully taxed. The sale of energy and minerals, along with transport

Table 11-4. *State VAT Rates, 1967–86*
(percent)

Year	North, northeast, and middle-west			South and southeast		
	Internal sales	*Interstate sales*	*Export sales*	*Internal sales*	*Interstate sales*	*Export sales*
1967	15.0	15.0	15.0	15.0	15.0	15.0
	18.0	18.0	18.0			
1968	18.0	18.0	18.0	15.0	15.0	15.0
				16.0	15.0	15.0
				17.0	15.0	15.0
1969	18.0	18.0	17.0	15.0	15.0	15.0
1970	18.0	15.0	15.0	17.0	15.0	15.0
1971	17.5	14.5	14.5	16.5	14.5	14.5
1972	17.0	14.0	14.0	16.0	14.0	14.0
1973	16.5	13.5	13.5	15.5	13.5	13.5
1974	16.0	13.0	13.0	15.0	13.0	13.0
1975	15.5	12.0	13.0	14.5	12.0	13.0
1976	15.0	11.0	13.0	14.0	11.0	13.0
1977	15.0	11.0	13.0	14.0	11.0	13.0
1978	15.0	11.0	13.0	14.0	11.0	13.0
1979	15.0	11.0	13.0	14.0	11.0	13.0
1980	15.0	11.0	13.0	15.0	11.0 and 10.0[a]	13.0
1981	16.0	11.0	13.0	15.5	11.0 and 9.5[a]	13.0
1982	16.0	11.0	13.0	16.0	11.0 and 9.0[a]	13.0
1983	16.0	11.0	13.0	16.0	11.0 and 9.0[a]	13.0
1984	17.0	12.0	13.0	17.0	12.0 and 9.0[a]	13.0
1985	17.0	12.0	13.0	17.0	12.0 and 9.0[a]	13.0
1986	17.0	12.0	13.0	17.0	12.0 and 9.0[a]	13.0

a. The first rate applies on interstate sales within the south and southeast; the second on sales to states in the north, northeast, and middle-west.

Source: Ministerio da Fazenda, Secretaria de Recéita Federal, Coordinação de Actividades Especiais.

and communication transactions, is taxed by the federal government. Taxes collected from these sources are earmarked to finance expenditures on related infrastructure, hydroelectric, steel, and oil plants, and expansion of communication services. The inclusion of these transactions in the federal tax base dates back to the 1940s and 1950s.

Public investment in these sectors no longer derives solely from tax revenue. Most financing comes from the profits of public enterprises, along with loans from domestic and foreign banks. Taxes collected from transactions in the areas of energy, minerals, electricity, and communication do not represent more than 10 percent of the annual investment in public enterprises operating in these sectors. The tax revenue from these sources, which once accounted for about 20 percent of federal revenue, now account for less than 5 percent. It seems desirable, then, to abolish these taxes at the federal level and allow states to expand their base accordingly.

Exemptions are effective when granted in the last stage of the production chain and when taxpayers are allowed full credit for tax paid on purchases; foods, for example, are zero rated. Exemptions are ineffective when taxes collected at previous stages are not rebated at the exempt stage. In this case, a link in the credit system is broken, and the effective rate on the final product cannot be easily determined. Unless a presumptive credit—one granted as if taxes were paid—is allowed at the exempt stage, the exemption will not be carried forward. (Zero-rating and its administrative implications are discussed in chapter 1 of this volume.)

Few goods besides exports are zero rated. The sale of some agricultural goods—vegetables, fruits, and dairy products—is exempt if they are sold unprocessed. Most agricultural products, however, including such raw foods as rice, beans, and corn, are taxed, even when sold unprocessed. Tax collection may be deferred if these products are sold as inputs for industrial goods. Thus industries collect 68 percent of state revenue from VAT and agriculture only 6 percent, even though the shares of the two sectors in national income are 35 percent and 11 percent.

Agriculture is not exempt from the VAT, although it is largely spared having to collect VAT taxes. Most of the VAT revenues are collected later in the production chain, in the industrial and trade sectors. To avoid dou-

ble taxation, the sale of many agricultural inputs, such as fertilizers, rations, and seeds, is exempt. To enforce zero-rating on vegetables, fruits, dairy products, and a few other items, such retailers as restaurants and cafes are allowed presumptive credit on the purchase of these products.

A municipal tax on services, with various rates, applies to the gross revenue of sixty-six activities, including construction, advertising, maintenance, entertainment, and professional services. By federal law, services taxed by municipalities are excluded from the state VAT. Such hybrid activities as construction and advertising are required to separate, for tax purposes, the sale of merchandise from the value of services provided. Needless to say, this gray area causes frequent disputes between states and municipalities over fiscal matters.

Federalism and the VAT

Principal sources of difficulty in administering the Brazilian state VAT are its constrained base and the country's centralized tax structure. Although the VAT is the main source of revenue for the states, they cannot tax most of the value added in their territories and have little freedom to set rates and determine exemptions.

Models of fiscal federalism are not to be taken literally, but they often provide useful hints for formulating tax policy. In the textbook case, a country, especially one as large as Brazil, could benefit immensely if ability-to-pay taxes were collected by the central government and broadly based indirect taxes were collected by subnational jurisdictions. Benefit levies, which usually include property taxes, are extremely useful if properly applied at the local level.

The Brazilian tax structure is a far cry from the optimal framework. Federal income taxes are not personal, since the corporate and financial sectors, rather than individuals, bear most of the burden. Municipalities depend for most of their budget on transfers of funds from higher levels of government, and states have limited tax bases and autonomy. This chapter considers alternative tax policies only at the state level.

In the coordination of indirect taxes, the type of border tax adjustment may affect revenue and its allocation among jurisdictions unless stringent conditions are set. If the benefits of government expenditure accrue primarily to consumers, a sufficient condition for a neutral system of border tax adjustments is the adoption of the destination principle for domestic as well as external trade. In this case, since exports are zero rated and imports are taxed at the internal rate, each community's social services are financed with revenue collected on value added to goods and services that are consumed within the community. This is also true when exemptions and rates differ among jurisdictions and when trade is not bilaterally balanced.[4] In the Brazilian state VAT, fiscal autonomy and economic neutrality are difficult to maintain because taxes are destination-based. They are superior to origin-based taxes, however, in facilitating administration and compliance, because revenue collected on the whole value added to traded products is attributed to the importing jurisdiction—it does not give rise to issues of valuation of interstate trade flows. (See chapter 9 of this volume.)

The destination principle is enforced in every country that adopts a VAT. The Sixth Directive of the Commission of the European Communities (1977) made the definitions of exclusion and exemption more consistent among member states and standardized administration of the VAT. A uniform basis of assessment was agreed on, and a common list of allowable exemptions drawn up. These include financial transactions, postal services, educational and cultural activities, noncommercial radio and television broadcasts, and services in the banking, insurance, and health care sectors. Except in the United Kingdom, the VAT applies to the sale of new buildings but not to the sale of previously occupied residential property. Special treatment is usually allowed for the agricultural sector and small businesses (see Cnossen 1983).

The level and structure of VAT rates differ significantly among member countries of the EEC. The standard nominal rate ranges from 10 percent to 30 percent. Most member states impose reduced rates on goods and services regarded as essential, such as food, drugs, newspapers, and transportation. Some countries extend their reduced rate, which in some cases becomes zero rated, to such items as clothing, shoes, electricity, and fuels. There are countries that impose higher rates on luxury items (such as cars, electronic equipment, jewelry, fuels, perfumes, and cosmetics).

The EEC countries have a much broader tax base than do the Brazilian states and enjoy greater latitude in determining the level and structure of the VAT. All transactions involving goods and services are covered by European VATs, except activities that are usually exempt from indirect taxes (the financial sector and radio and TV broadcasting) or are excluded altogether (health and postal services, cultural activities, and so on). Since EEC countries did not abandon the destination principle for trade within the EEC, each state may have great freedom to set its own rate and administrative procedures. Nothing of this sort is possible in Brazil, where horizontal and vertical tax disputes among jurisdictions are aggravated by mixed border tax adjustments.

The foregoing discussion illustrates the case for broadening the state VAT base in Brazil and making its administration more flexible. Inevitably, such a move will have consequences for revenue. Still, the costs and

Table 11-5. *Change in State VAT Revenue, 1980*
(percent)

State	*Zero-rating of interstate trade (1)*	*Zero-rating of taxed exports (2)*	*Exemption of basic foods (3)*	*Integration with federal VAT (4)*	*Inclusion of fuels (5)*
Acre	18.1	-0.8	-82.3	136.3	57.06
Amazonas	-65.7	-1.1	-73.0	32.3	19.55
Pará	53.3	-13.5	-42.8	87.2	43.56
Maranhão	57.1	-1.0	-48.0	71.2	29.26
Piauí	46.7	-1.7	-37.8	52.0	28.81
Ceará	30.0	-8.6	-28.1	34.9	24.66
Rio Grande do Norte	39.7	-3.5	-24.8	73.9	25.22
Paraíba	20.1	-2.1	-30.9	34.3	23.75
Pernambuco	12.1	-6.0	-19.2	20.5	20.58
Alagoas	23.6	-14.5	-22.2	25.5	25.23
Sergipe	42.1	-30.6	-20.8	27.8	26.76
Bahia	-9.3	-9.4	-22.5	18.8	21.59
Mato Grosso	29.5	-3.7	-21.1	35.9	32.00
Mato Grosso do Sul	1.8	-1.8	-16.6	22.2	—
Goiás	10.5	-0.5	-30.5	44.2	33.05
Distrito Federal	61.8	—	-13.9	48.7	35.72
Minas Gerais	9.1	-0.4	-14.5	49.4	22.80
Espírito Santo	-5.8	-0.6	-16.0	19.1	17.91
Rio de Janeiro	4.0	-0.5	-15.7	30.4	21.09
São Paulo	-14.8	-1.1	-12.0	16.8	15.64
Paraná	6.7	-9.4	-14.9	26.0	26.24
Santa Catarina	6.7	-6.1	-10.5	17.4	17.96
Rio Grande do Sul	9.4	-9.4	-11.1	18.7	19.95

— Not estimated.
Source: Columns 1–4, Eris and Kadota (1983); column 5, Ueda and Torres (1984).

gains of transition may not be significant: the impact in each state will probably be negligible if all changes are pooled in a fiscal package. Some evidence of this revenue effect follows.

Interstate sales are taxed at reduced rates; thus adoption of the destination principle, other things being equal, would lead to lower revenue for the state of origin, and importers, likewise, would pay higher taxes. Using interstate trade statistics, Eris and Kadota (1983) estimated that most states would gain from this shift, while São Paulo, Bahia, Espírito Santo, and Amazonas would lose (see table 11-5, column 1).

Exports of primary goods do not benefit from zero-rating; exports of nonmanufactured goods are taxed at a slightly reduced rate (13 percent). Eris and Kadota also quantified the negative effect on each state's finances of the adoption of zero-rating of goods now taxed at the border. Except in the case of a few northern and northeastern states and net exporters in the extreme south, revenue losses were not statistically significant (see table 11-5, column 2).

Although most states would like to exempt essential goods, not all of them can afford to do so. Southern industrialized states would be prepared to give away some revenue for reasons of administration as well as equity.[5] Poorer states, however, which depend heavily on agriculture, would be less willing to apply special treatment to these products—food still constitutes a large share of their productive and consumptive base. Eris and Kadota estimate that many states would lose as much as 40 percent of their revenue from VAT if a basket of basic foods were zero rated (see table 11-5, column 3).[6]

A potential source of revenue for the states is a partial integration of the federal and state VATs. It has been proposed to leave the most productive sources of revenue—cigarettes, beverages, and automobiles—as part of the federal government's tax base and to transfer the remaining taxable goods to the domain of the states. The states could then raise their rates on these products by the magnitude of the current federal VAT, since that tax would no longer be collected. According to Eris and Kadota, such an integration might increase state revenue by an average of 40 percent (see table 11-5, column 4).

Additional gains in revenue for the states would result from the inclusion of oil, minerals, electricity, and the like in their base. This gain may be estimated by applying the state VAT rate to the value added in these sectors. Data on value added are not available, however.

Ueda and Torres (1984) presented a crude and partial estimate of the gains to be expected if fuels were included in the base (see table 11-5, column 5); most states would increase their VAT revenue by more than 20 percent. This gain overestimates the contribution of fuels to state revenues, however, to the extent that fuels are intermediary products; fuels are already taxed as costs that add to the price of taxed goods and services.

Conclusions

The 1965 tax reform was a step toward rationality, especially at the state level, where a multiple-stage turnover tax was replaced by a VAT as the major source of revenue. But in the process, states' bases and administrative capabilities were crippled by numerous exclusions and rigidities. In particular, their freedom to set rates and determine exemptions for various goods and across jurisdictions is now severely limited. At the federal level, a VAT on manufactured goods, with various rates, replaced single-stage wholesale taxes on consumption. At the municipal level, a specific tax on services replaced myriad small taxes and fees levied against local activities. The tax reform was meant to achieve greater centralization of tax legislation so as to avoid interjurisdictional tax disputes and smooth the way in formulating policies for stabilization and distribution.

In spite of tax reform, interjurisdictional tax disputes became a serious problem because interjurisdictional taxes were not coordinated. Producer states benefited and consumer states lost revenue with the adoption of the origin principle for domestic trade. Furthermore, states that were net exporters lost revenue, and net importers gained, since an approximation of the destination principle prevailed for international trade. This type of arrangement not only redistributes revenue arbitrarily among states but also is unfair, since the poorer states are usually net importers domestically and net exporters abroad. The situation is exacerbated by the application of lower rates to interstate exports at the state of origin, with the difference between the lower rate and the internal rate being collected by the importing state.

The state VAT base does not cover numerous products and services now taxed by federal and local governments. Fuels, minerals, electricity, and other goods and services are excluded from the VAT. Undesirable consequences of this tax assignment include loss of potential revenue for states and inefficient border tax adjustments. Attempts to redress these difficulties in the past couple of years were aborted because they were incompatible with the prevailing stabilization policies of the central government. Since the early 1980s, there has been general agreement that the tax structure devised in 1965 is due for reform, this time in the direction of decentralization. Recent claims by states and municipalities to a larger share of national tax revenue were provisionally met by increased revenue sharing but not by the granting of greater autonomy.

Shortly after its inauguration, in March 1985, the administration of Jose Sarney installed a special committee, chaired by the planning minister, to study the structure and propose reform of the Brazilian tax system. There is now consensus on the committee that the state VAT system should be decentralized and its base made more comprehensive. Some freedom for states to legislate their own base and rates seems to be the likely outcome. In general, decentralization implies nonuniform rates and exemptions across products and states. These goals should be attained by broadening the current state VAT base and moving border tax adjustments toward full use of the destination principle in all transactions, domestic as well as foreign.

Notes

1. The federal wholesale tax had, in effect, been a value added tax since 1958.
2. With a turnover tax, the impact of double taxation is blunted by the cumulative nature of the levy itself.
3. Carl Shoup, a member of the Neumark Committee, acted briefly as consultant to the Brazilian Tax Reform Commission.
4. For this result to hold, overall community trade must be balanced. See Longo (1978).
5. Since rates are high, there is an incentive to evade taxes, particularly when primary goods reach consumers unprocessed.
6. The sources of this data are budget surveys. The principal items on the list include rice, beans, bread, oil, and meat.

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12

The VAT in the Republic of Korea

Seung Soo Han

In December 1976, the National Assembly of the Republic of Korea passed a law on tax reform. The reform was mainly concerned with introducing the value added tax and a special excise tax, and the VAT Law, which went into effect on July 1, 1977, marked the arrival of a new indirect tax regime that had been several years in the planning.

The old indirect tax system had been rather complicated. There were eleven types of indirect taxes in 1976. The value added tax replaced eight of them–the business tax, the commodity tax, and the taxes on textile products, petroleum products, electricity and gas, travel, admissions, and entertainment and food. The others—the liquor, telephone, and stamp taxes—remain in effect today.

Arguments for and against the VAT

There were several arguments for and against adopting the VAT in Korea. Some of those in favor of the VAT are summarized below:[1]

- The VAT would simplify the system of indirect taxes. By replacing eight of eleven indirect taxes, the VAT would reduce not only the number of indirect taxes but also the number of rate brackets. The eight replaced taxes had, among them, fifty-three rate brackets. To complicate matters further, the business tax, which was imposed on all businesses, was a multistage turnover tax, whereas the taxes on commodities, textile products, and petroleum products were imposed only at the manufacturing and importing stages. The tax system needed to be simplified, and the idea was to introduce the comprehensive income tax as the principal player in the structure of direct taxes and the VAT as the principal player in the structure of indirect taxes. (The comprehensive income tax was adopted in 1974.)
- The VAT would promote tax neutrality in international trade. Under the old system of indirect taxes, it was difficult to calculate the amount of tax to be refunded on exports and the amount of compensatory tax to be collected on imports. As a result the tax hidden in the process of production and distribution was either overcompensated or undercompensated. The statistical evidence suggests that it was more a case of undercompensation than overcompensation. Under the destination principle of taxation, such undercompensation would erode the competitive edge of exports and give imports an advantage over domestic industry.
- The VAT would help to allocate resources more efficiently.
- The VAT would promote domestic investment. With a consumption-type VAT, this is self-evident because such investment is excluded from the tax base. Full credit is given for the VAT paid on purchases of capital goods. This implies that, as compared with the case in which there is no investment, the total VAT burden can be greatly reduced.
- The VAT would discourage tax evasion. The VAT system requires that tax invoices be issued in transactions, and taxpayers must hold on to the invoices in order to benefit from tax deductions. The

tax authority would thus be able to cross-check the invoices documenting transactions between taxpayers, which would make tax evasion more difficult.

- The VAT system would provide the government with a steady source of revenue. Because the income elasticity of demand for goods that are subject to the VAT is relatively low compared with that for items subject to income tax or a special excise tax, the tax revenue from this source would not fluctuate as much as that from the other two major taxes.

Arguments against adopting the VAT in Korea included the following:

- Current bookkeeping practices were not sophisticated enough for the VAT system to work. Businesses and traders would need more time to develop this capacity.
- Adoption of the VAT would cause prices to increase. This was perhaps the strongest argument against the VAT.
- The VAT was a regressive tax. Although a single-rate VAT would improve the allocation of resources, it would also, it was argued, work against the equitable distribution of income. The special excise tax that was introduced at the same time as the VAT was meant to offset the regressive nature of the VAT.[2]

Questions were also raised concerning administrative capacity. Because the VAT system would require a different type of tax expertise and thus new skills on the part of the country's tax officials, the quality of tax administration became a major issue.

The Process of Reform

One of the primary aims of the government's first five-year economic development plan (1962–66) was to mobilize domestic resources more effectively. As part of the plan, new taxes were introduced to broaden the tax base. Several institutional changes accompanied the new tax structure, most notably the establishment of the Office of National Tax Administration (ONTA) in 1965.

The initiative to study the VAT with the aim of eventually adopting it came from the Ministry of Finance in 1971 and was endorsed by the Office of the Senior Presidential Secretary for Economic Affairs. Outside tax experts were invited to analyze the feasibility of adopting the VAT in Korea: James C. Duignan, a member of the fiscal panel at the International Monetary Fund (IMF), and Carl S. Shoup, a professor of economics at Columbia University, were brought to Korea in 1972 and 1973 respectively.

In 1974 the Ministry of Finance sent a team of three tax officials and two economists to Europe to observe and report on the practices and experience of those countries that imposed a VAT. The team, which was headed by the director-general of taxation, visited the United Kingdom, the Federal Republic of Germany, Belgium, and the Commission of the European Communities and, on the way back, Taiwan and Japan. In its report, all but one of the team, an economist, came out in favor of adopting the VAT in Korea. The director-general of taxation was sent to the United Kingdom again in 1975 to carry out a more detailed study of the VAT system there.[3]

In 1975 and again in 1976 the government invited Alan T. Tait of the IMF to conduct a detailed analysis of the possible impact of the VAT on prices and income distribution in Korea. Duignan was also invited to Korea in 1976, this time for consultations on the drafting of the VAT Law and other administrative matters preparatory to the introduction of the VAT.

In the meantime, the senior presidential secretary for economic affairs was appointed minister of finance in 1974. A particularly active proponent of the VAT, he was instrumental in getting the VAT Law enacted. The Economic Planning Board, however, which was responsible for keeping prices stable, became increasingly skeptical about the timing of the VAT reform because it feared that the VAT would trigger price increases. As there was such a division of opinion even within the Cabinet as to the adoption of the VAT, it was entirely due to a decision by the president that the VAT was introduced in 1977.

Feasibility Study

Three studies sponsored by the Bureau of Taxation at the Ministry of Finance formed the groundwork for the adoption of the VAT in Korea: Duignan's 1972 report on the feasibility of adopting the VAT and Tait's 1975 and 1976 analyses of the possible impact of the VAT in Korea. The studies reflected the experience of other countries with the VAT.

In his report in 1972, Duignan argued for adopting the VAT in Korea. He observed that the basis for an administrative mechanism and bookkeeping system for the VAT already existed in Korea. Administration of the business tax, a multistage turnover tax, was already computerized, and such computerization would greatly facilitate the collection, control, and estimation of the value added tax. Although Duignan recognized some obstacles to Korea's adopting the VAT—for example, the country's certified public accountants lacked practical experience with such a tax, and the requisite bookkeep-

ing and accounting procedures would be difficult to enforce among small businesses—he strongly supported it (for a more detailed discussion, see Duignan 1972).

The report prepared by Tait in 1975 dealt with the number of taxes which the VAT would replace, the VAT rate, the scope of tax exemptions, and the problems that might arise during the transitional period. He proposed to redress the regressivity of the VAT by either maintaining the commodity tax or introducing a special excise tax. His report in 1976 maintained that a single-rate VAT imposed at the rate of 10 percent would be sufficient to recoup the revenue that would be lost when the indirect taxes that the VAT would replace were eliminated. He showed that any change in prices would be insignificant—within the range of plus or minus 1 percent (for a more detailed discussion, see Tait 1975 and 1976).

Preparations for Implementation of the VAT

Although the VAT was intended as a substitute tax and replaced eight existing taxes, the taxpayers regarded it as a complex tax and an additional burden. To allay their fears and dispel some of the uncertainty surrounding the adoption of VAT, the government had to educate the public, and potential taxpayers in particular, about the new tax. In addition to acquainting the taxpayers with the new system, the government had to train the tax officials about the new tax, administer prices, and reorganize the tax administration.

With the help of the Korean Chamber of Commerce and Industry and other economic associations, as well as newspapers, television, and radio, the government launched a public relations campaign for the VAT that included a series of articles, question and answer sessions, feature stories, and lectures on the need for the VAT. A movie was made about the VAT and shown in all the movie theaters in Korea. Seminars, conferences, and meetings were held on the VAT. About thirty different pamphlets about the VAT were printed, including "The VAT: What Kind of Tax Is It?" and "Explaining the VAT Law, Tax Invoice and How to Report It," and about 16 million copies were distributed.

Three trial runs on filing tax returns were conducted before the VAT was implemented. The first exercise was held in January 1977, and 49,814 taxpayers participated. The second and third exercises were held in April and July 1977, respectively, and 99.3 percent and 99.2 percent of potential taxpayers participated. These exercises helped not only the taxpayers, who came away with a better understanding of the new tax, but also the tax authority, which used the feedback it got from the tests to refine the administrative details of the VAT system.

The Ministry of Finance formed a task force on the VAT composed of both government officials and representatives from the private sector. The group not only deliberated on the problem of implementation but also helped to draft the presidential decree and other administrative regulations on the VAT.

Because the success of the new tax depended largely on the quality and expertise of the tax officials, it was necessary to train those who would be charged with collecting the VAT. First the instructors were trained, and they in turn trained the tax officials. In all, 449 training sessions were held, and 64,072 tax officials took part. Meanwhile, the Office of National Tax Administration was reorganized in March 1977. VAT and excise tax divisions were created at ONTA as well as at the regional and district tax offices—and the liquor tax, personal tax, and withholding tax divisions were abolished.

To minimize the impact of the new tax on prices, the government enacted the Price Stability Law, which placed a limit on wholesale prices for 251 items and controlled the retail prices of 45 items in Seoul. And when the VAT was introduced, price guidelines were applied to 851 items to protect the consumer.

Structure of the VAT

The VAT in Korea is charged on the supply of goods and services and the importation of goods. The term "goods" covers all tangible and intangible objects which have the value of property. Examples of tangible objects are commodities, products, raw materials, machinery, and buildings. Examples of intangible objects are motive power, heat, and other controllable forces of nature. The term "services" covers all services and other actions which have the value of property other than goods.[4]

The supply of goods includes the delivery and transfer of goods arising from contractual or legal actions, self-supply of goods, personal use and donation, inventories on hand when a business is closed down, and transactions through a consignee or an agent. The supply of services includes the rendering of services, the provision of goods, facilities, or rights arising from legal or contractual actions, and self-supply of services.

The importation of goods covers goods brought into Korea from abroad, including marine products gathered on the high seas by foreign vessels.[5]

Tax Base

As shown in table 12-1, the tax base has increased steadily since the VAT was adopted in 1977. It grew from 44,495 billion won at current prices in 1978 to 143,421 billion won in 1983. The tax base thus increased by a factor of 3.2 in five years. During the same period, the GNP at current prices increased by a factor of 2.4. The tax base expanded by about 35 percent per year

Table 12-1. *VAT Statistics, 1978–83*

Year and category of taxpayer	Tax base[a]		Taxpayers		Tax collected		Tax refunded		Tax revenue	
	Billions of won	Percent	Thousands	Percent	Billions of won	Percent	Billions of won	Percent	Billions of won	Percent
1978										
General taxpayer	41,129.3	92.4	203	23.1	1,255.1	95.8	475.3	99.9	779.8	93.4
Corporation	32,095.6	75.1	22	2.5	1,037.3	79.1	432.7	91.0	604.6	72.4
Individual	9,033.7	20.3	181	20.6	217.8	16.6	42.3	8.9	175.2	21.0
Special taxpayer	3,365.3	7.6	675	76.9	55.5	4.2	0.2	0.0	55.3	6.6
Total	44,494.6	100.0	878	100.0	1,310.6	100.0	475.5	100.0	835.1	100.0
1979										
General taxpayer	55,435.7	92.5	205	22.0	1,553.0	95.3	542.4	100.0	1,010.6	92.9
Corporation	43,952.9	73.4	25	2.7	1,320.9	81.0	493.4	91.0	827.5	76.1
Individual	11,483.0	19.1	180	19.3	232.1	14.2	49.0	9.0	183.1	16.8
Special taxpayer	4,478.9	7.5	728	78.0	77.1	4.7	—	—	77.1	7.1
Total	59,914.8	100.0	933	100.0	1,630.1	100.0	542.4	100.0	1,087.7	100.0
1980										
General taxpayer	75,551.5	93.7	221	22.5	2,033.0	95.9	651.9	100.0	1,381.1	93.9
Corporation	62,507.3	77.6	27	2.8	1,757.8	82.8	587.3	90.1	1,170.5	79.6
Individual	13,044.2	16.1	194	19.7	275.2	13.0	64.6	9.9	210.6	14.3
Special taxpayer	5,035.4	6.3	759	77.5	89.3	4.2	—	—	89.7	6.1
Total	80,586.9	100.0	980	100.0	2,122.7	100.0	651.9	100.0	1,470.8	100.0
1981										
General taxpayer	100,555.7	94.6	241	21.8	2,485.6	95.6	796.3	100.0	1,689.3	93.6
Corporation	83,723.5	78.8	31	2.8	2,131.7	82.0	717.5	90.1	1,414.2	78.4
Individual	16,832.2	15.8	210	19.0	353.9	13.6	78.8	9.9	275.1	15.2
Special taxpayer	5,711.1	5.4	863	78.2	115.4	4.3	—	—	115.4	6.4
Total	106,266.8	100.0	1,104	100.0	2,601.0	100.0	796.3	100.0	1,804.7	100.0
1982										
General taxpayer	117,498.3	95.1	262	23.2	2,822.2	96.0	844.9	100.0	1,977.3	94.4
Corporation	97.751.1	79.1	34	3.0	2,381.3	81.0	747.7	88.5	1,633.6	78.0
Individual	19,747.2	16.0	228	20.2	440.9	15.0	97.2	11.5	343.7	16.4
Special taxpayer	6,038.6	4.9	866	76.8	117.0	4.0	—	—	117.0	5.6
Total	123,536.9	100.0	1,128	100.0	2,939.2	100.0	844.9	100.0	2,094.3	100.0
1983										
General taxpayer	136,878.2	95.4	289	24.7	3,364.6	96.3	933.9	100.0	2,430.7	94.9
Corporation	112,281.9	78.3	37	3.1	2,808.6	80.4	813.0	87.1	1,995.6	78.0
Individual	24,956.3	17.1	252	21.6	556.0	15.9	120.9	12.9	435.1	16.9
Special taxpayer	6,542.9	4.6	879	75.3	128.5	3.7	—	—	128.5	5.1
Total	143,421.1	100.0	1,168	100.0	3,493.1	100.0	933.9	100.0	2,559.2	100.0

a. Gross sales at each turnover.
Source: Korea, Ministry of Finance (1984b).

from 1978 to 1980. The rate of growth decreased to 32 percent in 1981 and then to about 16 percent in 1982 and 1983.

The total amount of VAT paid in 1978 was 1,311 billion won, which accounted for only 2.9 percent of the total tax base. In the same year, transactions totaling 12,267 billion won were subject to zero-rating. After the refunding due to zero-rating, net revenue from the VAT amounted to 835 billion won, or 1.9 percent of the tax base. The VAT paid in 1983 was 3,493 billion won, which accounted for 2.4 percent of the tax base. The total net sum of VAT after the refunding was 2,559 billion won in 1983, which accounted for 1.8 percent of the tax base.

Most of the tax that was refunded accrued to the export sector. The share of refunds that went to capital investment decreased from 12 percent in 1978 to 11 percent in 1979 and 5 percent in 1980 and averaged 6 percent in 1981 and 7 percent in 1982. The rest of the refunds went to exporters.

Taxpayers

Any entity independently engaged in the supply of goods or services in the course of business, whether the business is motivated by profit or not, is liable to the VAT. The taxpayers include individuals, corporations

—including state and local authorities—and foundations which are not incorporated. VAT taxpayers are divided into two groups: general taxpayers and special taxpayers. The general taxpayers are subject to a 10 percent tax on their value added; the special taxpayers are subject to a special rate of 2 percent on their gross sales.

The changes in the number and percentage of taxpayers in each category in the years following the introduction of the VAT are shown in table 12-2. In 1977 there were 824,192 VAT taxpayers. General taxpayers accounted for only 19 percent of the total; the 667,243 special taxpayers made up the remaining 81 percent of total taxpayers. Within the category of general taxpayers, individuals accounted for 16.7 percent of total taxpayers and corporations for 2.3 percent.

The number of VAT taxpayers increased to 1,200,260 by the first half of 1984, an increase of 46 percent in seven years. There has been a gradual change in the composition of the taxpayers. The share of general taxpayers increased to 25.4 percent by 1984, and that of special taxpayers decreased to 74.6 percent. Individual general taxpayers accounted for 22.1 percent of total taxpayers in 1984 and corporation general taxpayers for 3.3 percent.

The data in tables 12-1 and 12-2 reveal several interesting facts. First, corporation taxpayers consistently accounted for more than 73 percent of the total tax base over the years, although they made up only 2–3 percent of total taxpayers. The share of corporations in the VAT base tended to increase during this period.

Second, individual taxpayers, 17–22 percent of total taxpayers over the years, accounted for 16–20 percent of the VAT base. In contrast to the case of the corporation taxpayers, however, the individual taxpayers' share in the VAT base has been inversely related to the proportion of individuals in total taxpayers.

Third, the proportion of special taxpayers and their share in the tax base have slowly decreased.

Fourth, the share of each group of taxpayers in total VAT revenue more or less corresponded to its share in the tax base. For example, corporation taxpayers accounted for 72.1 percent of the tax base and 72.4 percent of VAT revenue in 1978 and for 78.3 percent of the tax base and 78.0 percent of tax revenue in 1983. Individual taxpayers accounted for 20.3 percent of the tax base and 21.0 percent of tax revenue in 1978 and for 17.1 percent of the tax base and 16.9 percent of tax revenue in 1983. Special taxpayers accounted for 7.6 percent of the tax base and 6.6 percent of tax revenue in 1978 and for 4.6 percent of the tax base and 5.1 percent of tax revenue in 1983.

Rate Structure

Since the adoption of the VAT in 1977, the tax rate has been kept at 10 percent. Although the VAT Law specifies a basic VAT rate of 13 percent, it allows for a fluctuation of three percentage points, upward or downward, in the rate. The rationale for the flexible rate structure was to ensure that the tax system could be made responsive to changes in the national economy. But pressure from business circles and government factions opposed to the adoption of the VAT played a large role in determining the current rate: to neutralize the opposition, the VAT was adopted at the lowest rate allowed by law.

Choosing an appropriate rate for the VAT was a crucial problem for the government when it began studying and preparing for the VAT. Before the Ministry of Finance, with the assistance of the Research Department of the Bank of Korea and the Korea Development Institute, could estimate the VAT rate, several assumptions had to be made about the type of VAT that would be adopted. First it was assumed that the consumption-type VAT would be used as well as the tax credit method. It was also assumed that the VAT would replace the business tax, the commodity tax, and the taxes on textile products, petroleum products, electricity and gas, travel,

Table 12-2. *VAT Taxpayers by Category, 1977–84*

	General taxpayers									
	Individual		*Corporation*		*Total*		*Special taxpayers*		*Total taxpayers*	
Year	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*
1977	137,767	17	19,182	2	156,949	19	667,243	81	824,192	100
1978	152,562	18	20,622	2	173,184	20	680,093	80	853,277	100
1979	177,273	19	23,763	3	201,036	22	713,330	78	914,366	100
1980	184,757	19	26,369	3	211,126	22	742,517	78	953,643	100
1981	200,565	18	29,826	3	230,391	21	863,135	79	1,093,526	100
1982	217,035	19	32,432	3	249,467	22	867,044	78	1,116,511	100
1983	237,934	21	35,978	3	273,912	24	877,139	76	1,151,051	100
1984	265,578	22	39,274	3	304,852	25	895,408	75	1,200,260	100

Note: For each of the years shown except 1977, the data relate to the first half of the year; data for 1977 relate to the second half.
Source: Korea, Ministry of Finance (1984b).

Table 12-3. *Indirect Tax Rates before and after the VAT*
(percent)

Tax	Number of rates	Maximum rate	Minimum rate
Previous tax regime			
Business	5	3.5	0.5
Commodity	17	100.0	2.0
Textile product	7	40.0	10.0
Petroleum product	4	300.0	10.0
Admission	12	250.0	5.0
Travel	3	20.0	5.0
Electricity and gas	1	15.0	15.0
Entertainment and food	4	20.0	2.0
Current tax regime			
VAT			
General	1	16.0	10.0
Special	2	3.5	2.0
Special excise tax	10	100.0	5.0

Notes: The maximum rate of the special excise tax was 180 percent at the time of introduction but was lowered later. Although the VAT rate is currently 10 percent, the basic rate is 13 percent and can be raised to as high as 16 percent.

Source: Korea, Ministry of Finance (1980).

admissions, and entertainment and food. Another assumption was that exports would be zero-rated and that there would be several exemptions both in the domestic supply of goods and in the importation of goods. It was further assumed that small businesses with an annual turnover of less than 12 million won would be treated as special taxpayers. Finally, the tax base would include the value of a special excise tax in the case of domestic goods and the insurance and freight costs, customs duty, and special excise tax in the case of imported goods.

Using GNP data supplied by the Bank of Korea and tax data supplied by the Office of National Tax Administration, the Ministry of Finance estimated that the VAT rate would be 11.23 percent when based on national income statistics, 12.15 percent when based on national expenditures, and 12.03 percent when based on national output. On the basis of this exercise, the Ministry of Finance argued for a VAT rate in the vicinity of 13 percent.[6]

Although there are some advantages to adopting multiple rates for the VAT, in particular, to redress the problem of regressivity, almost all the proponents of the VAT in Korea favored using a single rate. An exception was made, of course, for small businesses. Those whose annual gross sales do not exceed 24 million won are subject to a tax rate of 2.0 percent on their gross sales. Those engaged in brokerage or intermediary services whose annual turnover does not exceed 6 million won are subject to a tax rate of 3.5 percent on their turnover.

The regressive nature of the VAT when imposed at a single rate was corrected to some degree by the adoption of a special excise tax. Thirty-three groups of items are subject to this special tax, and the tax rates currently range from 5 percent to 100 percent. When the special excise tax was adopted in 1977, there were thirteen rate brackets ranging from 10 percent to 180 percent. Admissions to racecourses, sauna baths, golf courses, casinos, ski resorts, cabarets, and night clubs are also taxed at a special rate as specified in the Special Excise Tax Law.

Table 12-3 compares the rate structure of the current VAT system, including the special excise tax, with the rates of the indirect taxes that were replaced by the VAT.

Exemptions and Zero-Rating

There are several cases of exemptions and zero-rating in Korea's VAT system. With exemptions, the VAT paid on purchases at prior stages is not refundable, whereas it is fully refundable with zero-rating.[7]

The goods and services that are exempted fall into several categories. First, certain basic necessities and services are exempted: (a) basic, unprocessed foodstuffs (including agricultural, livestock, marine, and forest products that are used for food) and agricultural, livestock, marine, and forest products prescribed in the presidential decree which are produced in Korea but are not used for food, (b) piped water, (c) briquets and anthracite coal, and (d) passenger transport services other than those by aircraft, express bus, chartered bus, or taxi.

Second, certain social welfare services are exempted: (a) books, newspapers, magazines, official gazettes, communications and broadcasting excluding advertisement, (b) artistic works, pure artistic events, cultural events, and nonprofessional sports, and (c) admissions to libraries, museums, art galleries, zoos, and botanic gardens.

Third, certain personal services that are similar to labor are exempted. They include those rendered in the course of business by (a) lawyers, certified public accountants, tax accountants, and customs accountants, (b) actors, singers, radio performers, composers, writers, designers, professional sportsmen, dancers, waitresses, insurance agents, translators, stenographers, and the like, (c) academic and technical researchers, (d) systems analysts and computer programmers, and (e) harbor pilots.

Fourth, certain factors of production are exempted, such as (a) land, (b) financial and insurance services, and (c) the leasing of a house or land as prescribed in the presidential decree. In addition, certain miscellaneous goods and services are exempted from the VAT, including (a) monopoly goods, (b) postage stamps (excluding those for collection), revenue stamps, certificate stamps, lottery tickets, and public telephone calls, (c)

goods and services rendered by religious, charitable, scientific, and similar organizations, and (d) goods and services supplied, without any consideration, to the central government, local authorities, or public service organizations. The duty-exempt goods prescribed in the Customs Law are also exempted from the VAT.

The supply of the following goods and services is zero-rated: goods for exportation, services rendered outside Korea, international transport by ship or aircraft, and other goods or services supplied to earn foreign exchange. Zero-rating is applicable only to residents or domestic corporations, although nonresidents or foreign corporations that provide international transport by ship or aircraft can also benefit from zero-rating if their country has a reciprocal arrangement with Korea.

Relief for Small Businesses

Unlike large businesses, which can absorb the costs of complying with the VAT's standard accounting and procedural requirements, small businesses are incapable of keeping their books and rendering tax returns in the format required. But by virtue of their number and their prevalence throughout all regions of the country, small businesses constitute an important portion of the total business (and taxpaying) community. Consequently, there was both a political and an economic need to alleviate the burden of a complicated VAT system on businesses with a small turnover, and a relief measure for small businesses was incorporated into the VAT regime in Korea.

Individual traders who supply goods or services for which the VAT-inclusive annual turnover is less than 24 million won are subject to a special VAT rate of 2 percent that is levied on their turnover rather than on the value added. In the case of transactions through a proxy, agent, intermediary, consignee, or contractor, traders with a turnover of 6 million won or less are subject to a 3.5 percent VAT on their turnover. Because these traders are treated separately from the general taxpayers, they are known as special taxpayers.[8] The tax base of special taxpayers, therefore, is the annual turnover. Special taxpayers can deduct from their VAT liability up to 5.0 percent of the taxes they paid on purchases, providing that they submit the tax invoices to the government.

As shown in table 12-2, special taxpayers numbered 667,243 and accounted for 81.0 percent of total taxpayers in 1977. As the national economy grew and the size of businesses expanded, the proportion of special taxpayers decreased. By the first half of 1984, the number of special taxpayers had increased to 895,408, but their proportion in relation to total taxpayers had fallen to 74.6 percent. Despite the large proportion of special taxpayers in the VAT system, their contribution to the tax base and to taxes paid was not very significant. For example, special taxpayers accounted for about 4.0 of taxes paid and 5.0 percent of the tax base in 1983.

Administration of the VAT

As mentioned earlier, one of the eight indirect taxes that were replaced by the VAT in 1977 was the business tax. Korea's experience with the business tax made it easier to introduce the VAT. Because the business tax was a tax on turnover, the traders were already practicing some form of bookkeeping. The government decided to use the business tax as a stepping-stone to the VAT and reformed it accordingly in 1974. The number of tax rates was reduced from six to five, but the rates were raised. The tax base, which had been limited to the manufacturing sector and certain segments of the wholesale sector, was expanded to include all manufacturing, mining, and wholesale businesses. Traders were required to issue a standard invoice (similar to the tax invoice under the VAT system), and penalties were applied to those who did not. A registration system using taxpayer identification numbers was introduced, which greatly facilitated the process of computerization.

Administrative Performance

One of the arguments for the VAT was that it would eliminate tax irregularities such as evasion or avoidance, and it appears that administrative performance did improve under the new tax system. Although the amount of tax evaded or avoided cannot be easily estimated, there are indications that the administrative mechanism worked better under the VAT system than under the previous system of indirect taxes.

One measure of administrative performance is to compare the tax base with invoices issued. Table 12-4 compares administrative performance under the business tax and the VAT on the basis of invoices issued. In the first half of 1977, the business tax base was 10,945 billion won, but the amount rendered by the standard invoices totaled 7,801 billion won. The issuance of standard invoices thus accounted for 71.3 percent of the business tax base.

In the second half of 1977, after the VAT was adopted, the issuance of tax invoices accounted for 81.1 percent of the VAT base. This later increased to about 85 percent, which has been maintained over the years.

Another indication of improved performance in tax administration is shown in table 12-5, which compares correction ratios for the business tax and the VAT. The term "correction" refers to the process in which the government reassesses the tax base and tax amount payable when a final tax return is found to be erroneous or incomplete.

Table 12-4. *Tax Base and Invoice Issuance for the Business Tax and the VAT*
(billions of won)

Item	Business tax, 1977[a]	VAT				
		1977[b]	1979	1981	1983	1984[c]
Tax base (A)						
General	n.a.	15,493	55,436	100,681	136,878	69,969
Special	n.a.	1,440	4,479	5,711	6,543	3,439
Total	10,945	16,033	59,915	106,392	143,421	73,408
Amount invoiced —general (B)	7,801	12,572	47,302	85,964	117,032	59,128
Ratio (B/A)	71.3	81.1	85.3	85.4	85.5	84.5

n.a. Not applicable.
a. Data refer to first half of 1977.
b. Data refer to second half of 1977.
c. Data refer to first half of 1984.
Source: Korea, Ministry of Finance (1984b).

The fact that the correction ratios for both the number of taxpayers and the tax base were much higher under the business tax than under the VAT implies that the administrative performance of the indirect tax system improved substantially with the introduction of the VAT. For example, under the business tax system in the second half of 1976, the government corrected the tax returns of 51.2 percent of the taxpayers, and 7.3 percent of the tax base had to be corrected. Under the VAT system, both ratios fell dramatically—to 13.2 percent and 1.4 percent respectively in the second half of 1977—and remained low.

Administrative Requirements and Penalties

Under the VAT system in Korea, persons starting a business must register with the district tax office within twenty days from the date of commencement of business. The district tax office will issue a trader's registration certificate within seven days of receiving an application. Such certificates are subject to government inspection in January and July of each year. Any registered trader who suspends or closes down the business or changes any of the registered particulars has to report such changes to the district tax office without delay.

When a trader registers with the district tax office a record containing the following information is put on a computer file: the taxpayer's registration number and name and address, name and address of the business, telephone number, business code, trade classification, date of registration, and the date of starting business. When the goods or services are supplied, the supplier is required to issue a tax invoice that includes the following information: the date of supply, the supplier's name and address and registration number, the purchaser's name and registration number, the value and type of goods or services supplied, and the amount of VAT.

The general taxpayers are required to issue tax invoices; these are usually used for the deduction of taxes paid on purchases. The special taxpayers must issue a simplified invoice, which is usually used as evidence of a transaction. Retailers, restaurants, and inns are required to operate cash registers and may be closed down if they do not. All traders are required to keep records.

Table 12-5. *Correction Statistics for the Business Tax and the VAT*

Item	1976, second half	1977		1978	
		First half	Second half	First half	Second half
Number of taxpayers reported (A)	651,912	713,768	824,192	853,277	878,429
Tax base reported (billions of won) (B)	11,657	12,982	16,932	19,710	24,876
Number of taxpayers corrected (C)	334,358	308,566	109,435	110,656	135,598
Tax base corrected (billions of won) (D)	857	845	241	50	120
Ratio (percent)					
C/A	51.2	43.2	13.2	12.9	15.4
D/B	7.3	6.5	1.4	0.2	0.4

Source: Korea, Ministry of Finance, *The Report and Survey of Value Added Tax* (1980).

In the second half of 1977, the total number of tax invoices processed by the computer center was 52.2 million. The number of tax invoices processed remained above 50.0 million until the second half of 1979. This was almost halved in the second half of 1980, when processed invoices numbered 23.0 million. The number of computer-processed invoices decreased drastically after the lower limit on transactions to be processed by computer was increased from 100,000 won to 300,000 won in June 1980. The total number of tax invoices processed by the computer in the second half of 1983 was 20.9 million.

There tends to be some discrepancy between the invoices documenting sales and those documenting purchases. Table 12-6 shows the number of transactions processed and the incidence of nonmatching and error in VAT invoices. "Nonmatching" refers to the case in which either of the pair (sale and purchase) of invoices documenting a transaction is missing and "error" to the case in which the details of a matched pair of invoices conflict.

Note that the nonmatching ratio for sales invoices is about half of that for purchase invoices. This may be explained by the fact that taxpayers will always try to minimize their VAT liability by maximizing their claims on purchases.

The number of transactions processed by the computer expanded from 24.7 million in the first half of 1977, when the business tax was in operation, to 52.2 million in the second half of 1977 when the VAT was introduced. The number of transactions processed by the computing center increased to 56.4 million in the second half of 1983.

To discourage various violations, the VAT Law contains a series of penalty clauses. For example, traders who fail to register within twenty days of starting business have to pay a penalty surcharge on their consideration of goods or services supplied—a 1 percent surcharge in the case of individual taxpayers and a 2 percent surcharge in the case of corporation taxpayers. Similar penalties are imposed on those who fail to have their certificates inspected in January and July; who fail to

Table 12-6. *Nonmatching and Error in VAT Invoices, 1977–83*
(thousands)

Item	*Nonmatching* (1)	*Error* (2)	*Total processed* (3)	*Ratio (percent)* (1)/(3)	(2)/(3)
1977 (second half)					
Sales	1,566	1,944	34,128	4.6	5.7
Purchases	2,195	1,164	18,117	12.1	6.4
Total	3,761	3,108	52,245	7.2	5.9
1978					
Sales	1,596	2,342	71,017	2.2	3.3
Purchases	2,741	1,144	41,122	6.7	2.8
Total	4,337	3,486	112,139	3.9	3.1
1979					
Sales	911	1,394	64,780	1.4	2.2
Purchases	2,006	491	37,286	5.3	1.3
Total	2,917	1,885	102,066	2.8	1.8
1980					
Sales	554	673	40,891	1.3	1.6
Purchases	1,929	268	25,654	7.5	1.0
Total	2,483	941	66,545	3.7	1.4
1981					
Sales	443	334	58,324	0.8	0.6
Purchases	1,205	194	34,702	3.5	0.6
Total	1,648	528	93,026	1.8	0.6
1982					
Sales	397	188	58,057	0.7	0.3
Purchases	973	155	40,879	2.4	0.4
Total	1,370	343	98,936	1.4	0.3
1983					
Sales	431	240	65,773	0.6	0.4
Purchases	1,065	214	42,343	2.5	0.5
Total	1,496	454	108,116	1.4	0.4

Source: Korea, Ministry of Finance (1984b).

issue, or are late in submitting, tax invoices; or who issue tax invoices with missing or erroneous information. The penalty for filing an erroneous tax return and not paying the correct amount of tax is 10 percent of the total tax due.

Evaluation

The VAT has contributed to the steady growth of indirect tax revenue in Korea and is now the single most important source of government tax revenue. The VAT share in total tax revenue increased from 20.5 percent in 1978 to 22.3 percent in 1983. The personal income tax, the second most important source of tax revenue, accounts for about 10 percent of total tax revenue.

The composition of the tax revenue in Korea is shown in table 12-7. Compared with the revenue effect of the pre-VAT indirect taxes, the relative contribution of the VAT does not seem to be particularly marked. For example, the eight indirect taxes replaced by the VAT together accounted for 29.9 percent of total tax revenue in 1973. Their share increased sharply to 32.8 percent in 1974. Their share decreased somewhat thereafter but still accounted for 28.7 percent of total tax revenue in 1976.

When the revenue performance of the pre-VAT indirect tax regime is compared with the post-VAT regime, the contribution of the special excise tax which was adopted along with the VAT should also be considered. As shown in table 12-7, the special excise tax accounted for 8.0 percent of total tax revenue in 1978 and 6.9 percent in 1983. The share of indirect taxes in total tax revenue has not changed much over the years, despite the combined contribution of the VAT and the special excise tax. Although the VAT is the most important tax for raising revenue in Korea, its relative contribution (inclusive of the special excise tax) to total tax revenue remains more or less the same as that of the pre-VAT indirect tax regime.

VAT revenue in 1983 totaled 2,559 billion won, of which 1,025 billion won was collected from the domestic supply of goods and services and 1,534 billion won from the importation of goods. Of the VAT revenue from the domestic supply, 24.3 percent accrued from the manufacturing sector and 21.4 percent from the construction sector. The manufacturing sector, however, accounted for 47.6 percent of the VAT base; the construction industry, 10.4 percent. It can be seen from these percentages that the manufacturing tax base was substantially zero-rated. The manufacturing and construction sectors accounted for 10.8 percent of total taxpayers and 51.8 percent of general taxpayers. The third largest contributor was the retail sector, which accounted for 10.0 percent of VAT revenue. Retailers accounted for 7.2 percent of the tax base and 37.1 percent of total taxpayers. The retail sector also had the largest share of special taxpayers; retailers accounted for 42.3 percent of special taxpayers and 45.8 percent of revenue from special taxation.

Price Changes

As mentioned earlier, one of the reasons advanced by those who opposed the adoption of the VAT was its potentially adverse impact on prices. At the time, the Korean economy was experiencing unusually strong inflationary pressures. Wholesale prices were increasing at an annual rate of 12.2 percent in 1976, and consumer prices were rising at the rate of 15.4 percent.

As shown in table 12-8, wholesale prices increased by 9.0 percent and consumer prices by 10.2 percent in 1977 when the VAT was adopted in July. Even then, the price increase was led by food and beverages owing to crop failures caused by adverse weather conditions. For

Table 12-7. *Composition of Tax Revenue, 1973–83*
(percent)

Type of tax	*1973*	*1976*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*
National tax	88.7	90.5	89.2	88.8	88.3	88.8	88.9	87.9
Internal tax	67.3	59.2	55.0	56.7	55.8	56.2	55.6	54.1
1. Direct tax	30.4	23.7	20.6	21.0	17.9	18.9	19.9	18.3
2. Indirect tax	36.4	33.9	34.4	35.6	37.0	36.3	35.1	34.2
Value added tax	—	—	20.5	20.3	22.3	22.1	22.2	22.3
Special excise tax	—	—	8.0	9.0	8.8	8.1	7.0	6.9
Customs duty	12.6	11.9	15.8	13.7	11.6	10.9	10.7	12.8
Defense tax	—	11.6	11.6	11.8	13.1	13.4	12.4	11.4
Monopoly profits	8.7	7.7	6.8	6.7	7.7	8.3	8.0	7.3
Education tax	—	—	—	—	—	—	2.1	2.3
Local tax	11.3	9.5	10.8	11.2	11.7	11.2	11.1	12.1
Total tax revenue	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Ministry of Finance, *Financial and Monetary Statistics*; Bank of Korea, *Economic Statistics Yearbook*.

Table 12-8. *Prince Changes before and after the VAT*
(percent)

Prices	*1976*	*1977*	*1978*	*1979*
Wholesale				
All items	12.2	9.0	11.6	1.8
Food and beverage	17.8	15.5	24.4	11.2
Nonfood	9.9	6.4	5.8	22.9
Consumer				
All items	15.4	10.2	14.4	18.3
Food and beverage	17.9	11.6	16.6	13.8
Nonfood	13.3	8.8	12.4	22.6

Source: Korea, Economic Planning Board, *Major Statistics of Korean Economy 1985.*

example, wholesale prices for food and beverage items increased by 15.5 percent in 1977, whereas for nonfood items they increased by only 6.4 percent. The consumer price change was similarly affected. This trend continued until 1978, and the price of food and beverage items which were exempt from the VAT led the general price change. It was not until 1979 that the prices of nonfood items rose faster than the prices of food and beverages. This suggests that the introduction of the VAT did not have a marked impact on prices in Korea.[9]

Several reasons can be offered to explain this. The VAT was designed to replace eight indirect taxes without changing the level of tax revenue. The price impact of differential indirect tax incidence can be said to have been fairly neutral.

More important, the government's active pricing policy must have had a dampening effect on prices. When the VAT was adopted, the prices of 251 goods were tightly controlled by the government, and ceilings were imposed on factory and wholesale prices. The government also published recommended prices for certain sensitive consumer goods.

Despite the general economic climate in Korea during the latter half of the 1970s, when wages were rapidly increasing due to high demand in the labor market, the impact of the VAT on prices was almost neutralized.

Equity Aspects

Another argument advanced by those who objected to the VAT was that it was a regressive tax. Although several scholars pointed out that Korea was one of the few developing countries which had experienced rapid economic growth without profound changes in income distribution, there were signs that income inequality was widening in the mid-1970s. It was untimely, so it was argued, to aggravate the situation by introducing a regressive tax. The results of some studies seem to support this argument.

The distribution of the indirect tax burden before and after the introduction of VAT is given in table 12-9. In 1978 the effective VAT burden on the lowest income decile of nonfarm households was 9.4 percent, and the tax burden decreased as the level of household income increased; the burden on the highest income decile of nonfarm households was 3.8 percent. The regressive nature of the VAT was also apparent in the case of farm households. The VAT burden on the lowest income decile of farm households was 8.4 percent, and the effective burden decreased as the income level increased; the burden was 2.9 percent for the highest income decile. Although the general burden of VAT was lower for farm households, the tax burden distribution showed a similar pattern for both farm and nonfarm households.

An interesting fact emerges when the effective indirect tax burden is compared between 1976 and 1978. In 1976, when the eight indirect taxes later replaced by the VAT were still in operation, the effective indirect tax burden of nonfarm households was shown to be lower in the case of low-income groups and higher in the case of high-income groups as compared with the burden distribution in 1978. The indirect tax burden of the middle-income groups, particularly those in the fifth to seventh income deciles, seemed to have been less affected by the change of the indirect tax system. In contrast, the indirect tax burden of the farm household was generally higher in all income brackets in 1978 than in 1976. Thus the studies seem to support the argument that the VAT is a regressive tax (Han 1982b, pp. 414–16).[10]

Investment and Exports

The consumption-type VAT is thought to promote investment because full credit is given for the tax paid on purchases of capital goods. As compared with the old system of indirect taxes, therefore, the investment cost would be reduced by the amount of tax refunded under the VAT system, and this would provide some incentive for investment.

Since the introduction of the VAT in Korea, the largest share of refund on capital investment accrued to the manufacturing sector until 1981. Its share in the second half of 1977, for example, was 73.3 percent. The second largest share accrued to the electricity and gas sector, which accounted for 9.2 percent of the total tax refunded during the same period. After 1981, the electricity and gas industry sharply increased its share; it received 47.7 percent of the tax refunded on capital investment in 1982, compared with 25.2 percent for the manufacturing sector. The tax refund as a percentage of capital investment fluctuated between 0.3 percent, as in 1980, and 0.8 percent, as in 1978. It was 0.5 percent in 1982.

One of the goals of adopting the VAT was the elimina-

Table 12-9. *Indirect Tax Burden before and after the VAT, by Income Decile*
(percentage of income)

Year and category of household	*1st decile*	*2nd decile*	*3rd decile*	*4th decile*	*5th decile*	*6th decile*	*7th decile*	*8th decile*	*9th decile*	*10th decile*
Before the VAT										
1976										
Nonfarm	15.7	13.1	12.4	11.9	11.5	11.2	10.8	10.4	9.7	9.1
Farm	11.0	8.7	7.6	7.3	6.9	6.5	6.2	5.8	5.2	4.6
After the VAT										
1978										
Nonfarm	20.4	15.8	13.8	13.1	12.1	11.4	10.6	9.9	9.0	7.1
VAT burden	(9.4)	(7.5)	(6.7)	(6.4)	(6.0)	(5.7)	(5.4)	(5.1)	(4.7)	(3.8)
Farm	18.1	16.4	10.9	10.8	8.9	8.7	7.7	7.2	6.4	5.7
VAT burden	(8.4)	(6.0)	(5.1)	(5.0)	(4.2)	(4.2)	(3.7)	(3.5)	(3.2)	(2.9)
1980										
Nonfarm	28.0	19.4	16.6	15.1	13.9	13.0	12.1	11.2	10.1	9.0
VAT burden	(13.9)	(9.5)	(8.1)	(7.3)	(6.8)	(6.4)	(6.0)	(5.6)	(5.2)	(4.3)
Farm	18.2	13.8	12.3	11.6	10.6	10.1	9.3	8.6	7.8	6.5
VAT burden	(9.2)	(7.1)	(6.4)	(5.9)	(5.5)	(5.2)	(4.9)	(4.5)	(4.1)	(3.5)

Source: Han (1982b), p. 414.

tion of hidden tax elements in the international flow of goods and thus the removal of tax distortions in the export sector. With exports zero-rated under the VAT system, the indirect tax refund increased sharply. For example, the indirect tax refund as a percentage of exports increased from 0.04 percent in 1973 and 0.06 percent in 1976 to 0.09 percent in 1978 and 0.10 percent in 1982. This seems to suggest that the hidden tax elements were removed from the exportables under the new VAT system.

As the relative amount of tax refund to exports increased, the tax rebate per dollar of export also increased rapidly. It went from 22.7 won in 1973 to 53.6 won in 1978 and 86.6 won in 1982. During the same period, the Korean won was devalued twice—from 397.5 won per dollar in 1973 to 484.0 won in December 1974 and 580.0 won in January 1980. Although it is difficult to quantify the impact of the VAT on exports, the above figures suggest that the reform of the indirect tax system removed some of the tax disadvantages placed on the export sector by the old indirect tax system.[11]

Changes, Problems, and Prospects

The VAT Law and the presidential decree governing the VAT have been amended several times since the tax was introduced in 1977. In 1979, for example, the upper limit on the turnover for special taxpayers was increased from 12 million won to 24 million won. The changes in the VAT Law have been minor, however, and the system of value added taxation introduced almost a decade ago remains essentially intact.

Consequently, the problems that existed at the outset remain to be resolved. The greatest of these seems to be the treatment of special taxpayers. Currently, taxpayers with an annual turnover of 24 million won or less are eligible for the special tax rate of 2 percent of their annual gross sales. The low tax burden from the special tax treatment tends to encourage tax evasion—particularly within the service industries such as food and beverage, construction, and transportation and storage. Many traders seek to gain or retain special taxpayer status by filing false tax returns, not issuing or accepting tax invoices, or reporting the closing down of a business that is simultaneously opened up elsewhere. There is constant pressure to expand the minimum requirement for special tax treatment. According to a survey conducted by the Ministry of Finance, most of the complaints about the treatment of special taxpayers came from those with an annual turnover ranging between 20 million and 40 million won (Korea, Tax College and Korea Economic Research Institute 1983, pp. 122–23).

The treatment of farmers poses another problem. Although the VAT should be applied to all goods and services, agricultural and fishery products are exempt from the VAT so as to reduce the tax burden on low-income groups. Consequently, farmers and fishermen have no VAT obligations. They do not have to register at the district tax office or keep records of their production and sales. At the same time, however, they are not entitled to a refund of the tax paid during the production and distribution of agricultural and fishery products. The debate continues over whether to introduce a special system of taxation for farmers, such as zero-rating.

Banking and insurance services present another problem. Although they are currently excluded from VAT liability, there has been an increasing demand for taxing them. The taxation of these sectors would certainly en-

hance equity and raise revenue. But there are theoretical as well as practical problems. For example, some financial services such as capital can be regarded as factors of production, and estimating the value added in a financial service transaction is not easy.

Finally, there is the problem of taxing the personal services of lawyers, certified public accountants, and other professional people. The exemptions specified in the VAT Law with regard to such services need to be reviewed to make the VAT as broadly based as possible.[12]

No one can deny that the value added tax contributed greatly to the simplification of the indirect tax system and has become one of the most important sources of revenue in Korea. At the same time, however, the VAT seems to have had a negative effect on the distribution of income in Korea. Both the positive and negative aspects of the VAT's allocation and distribution functions have thus been amply demonstrated during the last nine years. The stabilization function of the VAT, however, has yet to be tested. The determination of a maximum and minimum rate at the time of introducing the VAT implied that the tax would be used as a macroeconomic policy instrument. This was also the expressed view of the proponents of the VAT. An attempt to test the value of, and then use, the VAT as an effective tool of macroeconomic policy objectives, therefore, may be the task that is left to the government in the coming years.

Notes

1. The views of the proponents of VAT in Korea are summarized in Choi (1984, pp. 70–74), and Korea, Ministry of Finance (1977, pp. 23–24).

2. The views of those who opposed the adoption of VAT because of its likely adverse impact on prices and income distribution are discussed in Choi (1984, pp. 102–105).

3. Information obtained through a conversation with Dr. Chon-In Kim, one of the economists on the observation team.

4. The VAT tax base is defined in articles 1 and 13 of the VAT Law. See Korean Association of Certified Public Accountants (1985, pp. 261 and 271–73).

5. The supply of goods and services is defined in articles 6–8 of the VAT Law. See Korean Association of Certified Public Accountants (1985, pp. 264–65).

6. For a detailed discussion of the methodology and estimation, see Choi (1984, pp. 77–85).

7. For complete listings of the goods and services that are exempt or zero-rated, see Korea, Ministry of Finance (1983a, pp. 168–72).

8. Articles 25 and 26 of the VAT Law define the special taxation and its tax base.

9. An international comparison of price changes after the adoption of the VAT seems to suggest that Korea belongs to the group of countries where the introduction of VAT did not particularly destabilize prices (Korea, Ministry of Finance 1980, pp. 168–70).

10. Although the level of tax burden differs, the regressive nature of the VAT was also estimated in other studies. See Heller (1981) and Oh (1983).

11. Investment and export-related figures after 1980 are from Choi (1983, pp. 27 and 29). Others are from Korea, Ministry of Finance (1980, pp. 180 and 185).

12. IMF recommendations on some of these issues are summarized in Korea, Ministry of Finance (1983b).

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13

The VAT in Côte d'Ivoire

Betty C. Heian and Terry Monson

The Côte d'Ivoire, a small West African country, gained its independence from France in 1960. In 1983 it enjoyed a per capita gross domestic product (GDP) of $710, the sixth highest in Sub-Saharan black Africa (World Bank 1985, table 1). Between 1965 and 1983, real GDP grew at 5.8 percent a year, but a 4.6 percent annual population growth rate (as a result of high birth and migration rates) limited real per capita GDP growth to 1.0 percent for this period (World Bank 1985, table 2).

The country has used relatively open trade and factor market policies and has encouraged agricultural development. It remains primarily an agricultural nation; 73 percent of its population was rural in 1975 (République de Côte d'Ivoire 1979); agriculture employed 87 percent of its labor force in 1965 and 79 percent in 1981 (World Bank 1985, table 21). Primary sector production accounted for 46 percent of GDP in 1960 and 36 percent in both 1965 and 1983 (International Monetary Fund 1970, p. 227; World Bank 1985, table 3). Three-fourths of its exports (about 30 percent of GDP) are either unprocessed or processed primary products, such as coffee, cocoa, wood, and palm oil (BCEAO May 1985). Export taxes and earnings of the Price Stabilization Board, which markets most agricultural exports, provide a significant percentage of government revenue.

The Côte d'Ivoire has encouraged manufacturing activities. The average effective rate of protection on manufacturing activities was estimated to be 42 percent in 1975 (den Tuinder 1978, p. 243), not high among developing countries. Manufacturing's share of GDP rose from 8 percent in 1960 to 13 percent in 1982 (International Monetary Fund 1970, p. 227; World Bank 1985, table 3).

The VAT, the Côte d'Ivoire's most important indirect tax (see table 13-1), was introduced at independence but since then its role and incidence have changed considerably. Originally, it was primarily a sales tax on imports. In 1960, 70 percent of VAT revenues derived from imports, compared with about 40 percent in 1982. In 1982 the VAT generated 30 percent of tax revenues (versus 15 percent in 1960); trade taxes (excluding the import VAT) and excises generated 28 and 26.5 percent of tax revenues, respectively (versus 67 and 12 percent, respectively, in 1960).

The Côte d'Ivoire tax code treats several taxes together under the heading *taxes sur le chiffre d'affaires*. These include the *taxe sur la valeur ajoutée* (TVA), the *taxe sur les prestations de service* (TPS), the *taxe a la valeur ajoutée forfaitaire* (TFA), and some additional specific excise taxes. The TVA is a manufacturing tax with credits for taxes paid on inputs and on investment. The TPS is a turnover tax on services with no credits for previously paid taxes. We will use the term VAT to refer to value added taxes in general, TVA and TPS to refer to these specific Ivorian taxes, and TVA-TPS to refer to them jointly.

Following the Shoup taxonomy (chapter 1 of this volume) the Ivorian TVA can be characterized as a noncomprehensive, destination based, multiple rate, consumption value added tax using a tax credit method to determine tax liability.

The Tax Structure before Independence

Before independence, the Côte d'Ivoire was a territory of the French West African Federation (*Afrique*

Table 13-1. *Composition of Ivorian Tax Revenues, Selected Years, 1960–82*
(percent)

Type of tax	*1960*	*1965*	*1970*	*1975*	*1980*	*1982*
Trade taxes	76.7	66.2	60.7	53.9	46.7	39.7
TVA	10.8	14.6	15.7	14.4	14.3	11.7
Indirect domestic taxes	16.1	23.6	28.2	31.3	39.0	45.5
TVA-TPS	4.5	9.5	10.2	13.9	14.7	19.0
Direct domestic taxes	7.2	10.2	11.1	14.8	14.3	14.9
Total	100	100	100	100	100	100

Source: CIRES (1985).

Table 13-2. *Predecessors to the TVA-TPS, 1950–60*

System	*Rates (federal, local)*	*Comments*
Transactions tax, 1950–51	2.0–2.5%, 0.50–0.60%	Turnover tax
Sales tax, 1952–55	Exports: 4.0%, 1.0% (then 0)	Single stage
	Imports: 6.0%, 1.5%	Single stage
	Local goods: 5.0–6.0%, 1.5% (then 1.25%)	Single stage
	Services: 3.0%, 0.75%	Turnover tax
Sales tax, 1955–57	Exports: 4.0%, 1.0%	*Taxe forfaitaire*
	Imports: 7.2%, 1.8%[a]	*Taxe forfaitaire*
	Local goods: 5.0%, 1.25%	Single stage
	Services: 3.0%, 0.75%	Turnover tax
Production tax, 1957–59	Exports: 5.0%, 5.0%	*Taxe forfaitaire*
	Imports: 12.5%, 12.5%[b]	*Taxe forfaitaire*
	Local goods: 8.0%[c]	Limited deduction production tax
	Services: 3.75%[c]	Turnover tax

a. The effective tax rate was 10 percent.
b. The tax rate was 12.5 percent of the tax-inclusive value, or 14.29 percent of the tax-exclusive value. Additional surcharges increased the effective tax-exclusive rate to 15.57 percent.
c. The tax-exclusive rates are 8.70 percent and 3.90 percent, respectively.
Source: Koumoué Koffi (1981), pp. 93–122.

Occidentale Française, or AOF). Indirect taxes and a head tax (CFAF 750–1,000 per person) provided most AOF tax revenues. Direct taxation, of which the head tax was the most significant, generated about 20 percent of the Côte d'Ivoire's tax revenue in 1950 (Amin 1967, p. 243). Indirect taxation consisted of federal and territorial taxes collected jointly. In the ten years before independence, this combined tax structure progressed from a turnover tax to a single stage retail sales tax to a production tax with limited deductions (see table 13-2).

In 1950 the AOF replaced a 9.5 percent single stage sales tax with a 2.5 percent turnover tax on all transactions. In 1952 the rate, base, and nature of the tax structure were transformed. The local rates became 1.50 percent (domestic consumption), 1.00 percent (exports), and 0.75 percent (services and other activities not taxed at other rates). Domestic consumption and export taxes were single stage retail taxes (*taxe unique*). The 0.75 percent service tax retained its cascade character (Koumoué Koffi 1981, p. 96). The federal tax rate range of 3–6 percent yielded a combined federal and local rate range of 3.75 to 7.5 percent (Koumoué Koffi 1981, pp. 96–98).

In 1955 taxation by forfeit (*régime forfaitaire*) replaced the sales tax. Although a forfeit tax is usually negotiated between tax personnel and the taxpayer, this tax was levied in an ad valorem fashion. Its 10.0 percent rate was intended to provide about the same revenues as the former system.

Finally, a production tax with deductions allowed for inputs incorporated in the product or destroyed in the production process was introduced in 1957. At the same time, the effective forfeit rate on imports was increased to 15.57 percent (Koumoué Koffi 1981, pp. 99–100 and 121–22).

Problems with the Pre-Independence Tax Structure

Ivorian leaders at independence sought a tax system which would maintain or increase revenues, respond to economic growth, and be easily understood. Objections to the existing system were the regressivity of the head tax, stemming from lower income levels and

more effective administration in rural areas, and the cascading and associated non-neutrality of the production tax. The head tax had been a particular target of independence movement rhetoric (Penouil and Tixier 1961, p. 721) and was replaced with a payroll tax intended to affect urban workers. The agricultural sector, although largely excluded from the payroll tax and the TVA-TPS, contributes significantly to government revenues through the revenues of the Price Stabilization Board.

Authorities felt that a limited coverage TVA would meet the needs for reform of the manufacturing production tax better than selective excises since the latter would introduce non-neutrality and either entail regressivity if applied to mass consumption goods or inadequate revenue if applied to a narrower base. The TVA was expected to yield more revenue than selective excises, to eliminate some biases found in the production tax, to respond better to economic growth, and, if carefully designed to exclude necessities, to be more equitable than other taxes (Koumoué Koffi 1981, pp. 94–96). Finally, administrative constraints required that new taxes be simple to administer, easy to understand, and to have low compliance costs.

Transition to the TVA-TPS

The Ivorian TVA-TPS was, in most respects, a modification of the existing production tax. In fact, it was initially little more than a single stage tax on imports. The scope of the TVA and TPS was limited to concerns with annual sales over CFAF 30 million (US$120,000 at the 1960 exchange rate). Smaller firms whose activities were otherwise subject to the TVA or the TPS were instead subjected to a forfeit tax. Such firms represented 60–66 percent of total industrial employment in 1965 and 1970 (Schaudel and Mettelin, undated, table 2) and generated 61, 45, and 32 percent of manufacturing GDP in 1960, 1965 and 1969, respectively (den Tuinder 1978, p. 322). Agriculture, other primary production, and commercial activities were excluded from the TVA-TPS base because of perceived difficulties in tax administration in these sectors dominated by small producers. For example, an estimated 280,000 small coffee plantations produce the country's major export crop (Europa Publications 1984, p. 441). Furthermore, 90 percent of commercial activity occurs in traditional retail outlets (Tixier and de la Biche 1973, p. 15). In 1970, 49,000 of the 50,000 commercial outlets in the Côte d'Ivoire were small African-owned shops, market stalls, or street vendors (République de Côte d'Ivoire 1978, p. 209).

The economic and political circumstances of the Côte d'Ivoire at independence, especially the close economic and cultural ties to France, contributed to the choice of the TVA-TPS structure. During the colonial period, about 50 percent of Ivorian exports were destined to France, and 65 percent of its imports originated in France. France provided some 30–40 percent of the AOF's budget in the 1950s (Berg 1960, p. 395) and before independence about 20–25 percent of the Côte d'Ivoire's current budget and 43 percent of its public investment budget (Amin 1967, pp. 305–06). French expatriates dominated the AOF civil service, especially in economic affairs. These ties to France and French experience with VAT led naturally to consideration of a VAT for the Côte d'Ivoire.

In the late 1950s a French consulting firm proposed a VAT covering goods and services through the wholesale stage. The Finance Ministry felt its accounting demands on taxpayer and tax administrators were excessive, that its revenue effects were uncertain (the proposal contained no revenue projections), and that inadequate administrative resources would lead to loss of revenues and widespread evasion. The proposal was rejected and the Finance Ministry proposed the less extensive *taxe sur le chiffre d'affaires* structure, which, with modifications, is in place today.

Several factors made the TVA more attractive than the previous production tax. First, compliance costs were generally reduced. The tax credit system was less cumbersome than the former base-on-base procedure. Second, allowable deductions were widened to include TVA paid on most inputs and investment goods.[1] Third, the elimination of the head tax and the exclusion from the TVA of most products consumed by the rural population shifted the tax burden from the rural to the urban population. Fourth, tax rates were carefully chosen to have only a minor effect on the effective tax rates on domestic production and imports. In addition, exports were zero-rated to eliminate bias against exporting.

To keep rates on domestic output and imports equal, the import forfeit tax (effective rate of 15.57 percent) was broken into the TVA at 8 percent and a special import duty (*droit fiscal*) of 7.57 percent, which applied in addition to the regular duties. The latter remains a part of the Côte d'Ivoire's tariff structure today.

The TVA increased the effective tax rate on imports slightly since the tax exclusive rate (8 percent ÷ (100 percent - 8 percent) = 8.69 percent) was rounded upward to 9 percent and applied to c.i.f. values plus duties plus the newly created *droit fiscal*. In contrast, the former forfeit tax applied to c.i.f. values plus duties.[2] The impact upon domestic output prices is difficult to determine. The cost of imported inputs rose since only 8 percent (the import TVA) instead of 15.57 percent (the forfeit tax) was creditable. However, there were more creditable items under the TVA. The offsetting effects probably caused a smaller increase in the tax burden on domestic output than for imports.

The Tax Structure in Côte d'Ivoire

The TVA-TPS system is not and was not intended to be a comprehensive VAT. The TVA has been described as a manufacturing tax operating under the tax credit principle (Cnossen 1977, p. 162), and as a single-stage (manufacturing) tax using the value added technique (Shoup 1986, p. 4). The TPS, as noted earlier, is a turnover tax on services. The forfeit option, which initially substituted for the production and profits taxes of small unsophisticated enterprises, was intended to simplify administration and compliance. It evolved into a negotiated small business tax called *taxe á la valeur ajoutée forfaitaire* (TFA), which was eliminated in 1983.

When the TVA-TPS was instituted, the Côte d'Ivoire also introduced a complementary investment code designed to encourage industrialization. The most important concessions granted firms with priority under the investment code are exemptions from profits taxes and duties (including TVA) on imported inputs and most imported capital goods for ten years. The net effect is to shift TVA liability forward from imported capital equipment to domestic value added and to subsidize priority firms indirectly through a cashflow effect.

Although the principles underlying the Ivorian TVA-TPS have not changed, the tax code has been modified substantially during the past twenty-five years. Rates were increased from 8 to 20 percent; a three-rate structure was introduced; the scope of the tax was extended; and the list of exonerated products was modified. These changes were intended to improve the consistency of the tax, to simplify compliance requirements, and to increase tax revenues.

The Tax Base

Business activity in the Côte d'Ivoire is classified as subject to TVA, subject to TVA at the option of the enterprise, or outside the scope of TVA. Some activities outside the scope of TVA and others with the option of being taxed under the TVA are subject to the TPS.

Activities automatically subject to TVA in 1984 included: (a) production operations, (b) construction, (c) distributive operations not independent of production operations, (d) delivery of material extracted in the Côte d'Ivoire, and (e) importing. The list of those who may opt for the TVA included: (a) craftsmen who contract for businesses subject to the TVA, (b) tradespeople or intermediaries who deliver unaltered goods to businesses subject to the TVA or for export, (c) service providers, (d) leasing or credit-purchase businesses, and (e) flour, cotton oil, palm oil, natural rubber, rice, sugar, and meat processing activities (Editions Fiducaire 1985, pp. 41–42).

The TPS applies to: (a) rentals, (b) services of all nature, (c) restaurants and hotels, (d) real estate commissions, (e) insurance commissions (premiums are separately taxed), and (f) everything else not expressly subject to the TVA. Some businesses related to tourism are taxed under a separate regime (Editions Fiducaire 1985).

The TVA and the TPS are not imposed upon retail and wholesale trade. Agricultural activity and many agroindustrial activities are exempt from TVA and TPS. Other important exempt items are publications, unprocessed logs, some domestic pharmaceutical manufactures, commissions and fees relating to export (except transportation), small short-term agricultural loans, and some charges by foreign banks to Ivorian banks. Although specific items on the exempt list have changed over time, the general intent has remained unchanged: the exemption of agricultural and closely related activities, books and similar publications, direct export activity, and forestry and fishing but not extractive industries.

Rates

The TVA has three rates. A low rate applies to quasinecessities and a range of industrial inputs, capital goods, and agroindustrial products; a high rate applies to alcoholic beverages (except beer and wine), perfumes, precious stones, and firearms; a normal rate applies to all other activities. When introduced, the tax-inclusive normal TVA and TPS rates were 8 percent and 7 percent, respectively. These rates were equalized in 1969 and have increased gradually to 20 percent in 1982 (République de Côte d'Ivoire 1985). A low rate equal to one-half the normal rate and a high rate equal to twice the normal rate were introduced in 1962. In 1974 the high rate was reduced from 30 percent (double the normal rate) to 25 percent and then raised to 30 percent in 1982. Some specific excise taxes were increased to partially offset the reduction in the high rate relative to the normal rates after 1974 (CIRES 1985). A low TPS rate, introduced in 1973, applies to hotel and restaurant activities. A tax-exclusive rate, rounded to the nearest percentage point, is applied to imports for computational simplicity.[3]

Specific products subject to low rates have changed over time, and changes generally have moved articles from the exempt to the low-rate category. For example, the 1973 tax code lists palm oil, fertilizer, and flour as exempt (République de Côte d'Ivoire 1973, p. 139); in 1985 they were classified as being subject to the low rate if they opted for TVA (Editions Fiducaire 1985, p. 42). Examples of exempt and low rate articles are shown in table 13-3.

Table 13-3. *Examples of Exempt and Low-Rate Articles under the TVA*

Exempt	*Low-rate*
Live animals	Semi-finished metals
Fishnets	(ingots, etc.)
Movie films	Televisions
Fresh meat	Large trucks
Milk	Industrial furnaces
Bread	Textile industry equipment
Fresh fruit	Agricultural machinery
Cereals (wheat, etc.)	Concrete mixers
Salt	Excavating equipment
Tapioca	Printing equipment
	Irrigation equipment
	Flour
	Sugar
	Rice

Source: International Customs Tariff Bureau (1977); Editions Fiducaire (1985), p. 43

Options

In some situations, firms selling to businesses subject to the TVA may find it advantageous to opt to be subject to the TVA. An opting firm can include TVA on its invoices, which its clients can deduct from their own TVA liability. It can also deduct TVA on its inputs and eligible investments. This option is especially important if the opting firm is otherwise subject to TPS, since a purchasing firm usually can deduct TPS paid the supplying firm in only a limited number of specific cases.

Before 1983 small tradespeople, wholesale and retail businesses, and artisanal manufacturers could opt for the *taxe á la valeur ajoutée forfaitaire*, or TFA, instead of the TVA-TPS. To reduce assessment and recordkeeping, TFA liability was negotiated biannually between the taxpayer and an official of the tax department. Available data suggest that this tax was collected sporadically and had insignificant revenues.[4] It was eliminated in 1983 with the explanation that it worked to the disadvantage of the treasury. Many affected firms, not automatically subject to the TVA, are expected to opt for coverage under the regular TVA. We have no recent data on the revenue impact of this change or on the number of affected firms.

Administration

The *Direction Générale des Impôts* (DGI) collects the TVA and the TPS (in addition to other domestic taxes); the *Direction Générale des Douanes* (DGD) collects the import TVA. Both are branches of the Ministry of Economics and Finance. In 1982–83, the DGI had a staff of 450–500, and the DGD had a staff of 2,400–2,500 (République de Côte d'Ivoire 1982). Staffing of the DGI with qualified Ivorians has been a problem since independence. Expatriates occupied all DGI management positions until 1968 (Koumoué Koffi 1981, pp. 233–34). Ivorization of the entire Côte d'Ivoire civil service has been and still remains a high priority of the government (République de Côte d'Ivoire 1976, vol. 3). Staffing constraints were a factor in the design and coverage of the TVA-TPS. Over time, changes broadening its scope suggest improvements in tax administrative capability; for example, in 1972 the liberal professions (lawyers, accountants, and so forth) were subjected to the TPS (République de Côte d'Ivoire 1973, p. 135).

Tax Computation and Deductions

Firms file monthly tax declarations if the monthly tax liability exceeds FCFA 25,000 or a quarterly declaration if it is less. Tax liability is computed by applying the appropriate rate to sales and subtracting TVA and, in some cases, TPS, shown on purchase invoices. In the case of self-deliveries, the rate is applied to the normal wholesale price of similar items or, if that cannot be determined, to an internal transfer price.

Deductions are categorized as physical deductions (raw materials, intermediate goods, and exhaustible inputs) and financial deductions. In cases when only a portion of the firms's output is subject to TVA, the deduction of the TVA is prorated using the value of the taxable products. Financial deductions include qualifying services, overhead, and, most important, investment goods. For investment goods, the invoiced TVA is deductible only for buildings and equipment reserved for or directly related to industrial usage (for example, factory buildings and industrial equipment qualify for the exclusion but administrative offices, residences, canteens, and over the road vehicles do not qualify, Koumoué Koffi 1981, pp. 156–59). The invoiced TVA on services is deductible. The TPS is deductible for bank charges related to foreign exchange operations, transportation on items which are themselves deductible, repairs on items which are deductible, and fees of architects and engineering firms in connection with installation of investments in priority firms.

Deductions for the TVA are made in the accounting period in which the invoices are paid. When deductions exceed tax liability, a buffer rule (*regle de butoir*) requires the difference to be carried forward to offset the TVA in subsequent months. Excess tax credits are reimbursed only for exports (excluding raw materials and slightly processed goods such as timber and some minerals), activities taxed at the reduced rate (excluding flour, cotton oil, palm oil, natural rubber, rice, sugar, and processed meats), or upon termination of the firm's activities.

The Role of the TPS-TVA in the Ivorian Tax Structure

Several features characterize the Ivorian tax structure and revenue performance in the post-independence period (see table 13-4). First, the tax ratio hovered around 0.20 between 1960 and 1975 and increased slightly thereafter. Including the Price Stabilization Board revenues would raise the ratio to 0.22–0.29, depending upon yearly international commodity market conditions. A World Bank mission in 1981 commented "that by and large the Côte d'Ivoire's tax system has been performing quite well relative to other developing countries and that there is probably not a great deal of underutilized tax capacity which can be exploited to generate large increases in revenue."

Second, major changes occurred in the composition of tax revenues over the period 1965–82. Trade taxes (duties, import TVA, and export taxes) fell from two-thirds to two-fifths of tax revenue, while the domestic indirect tax share nearly doubled and the domestic direct tax share rose by one-half. The declining importance of trade taxes was due to changes in the composition of imports, erosion of the tax base for the import TVA because of exoneration under investment code provisions, and low growth of exports subject to taxation.

Third, among domestic taxes, TVA-TPS revenues grew most rapidly. Their share rose from 9.5 to 19.0 percent between 1965 and 1982 as a result of a 54 percent increase in rates (from 13 to 20 percent) and a twelvefold increase in the nominal value of its base. Consequently, the domestic TVA-TPS share of total TVA-TPS revenues rose from 40 to 60 percent.

Finally, a striking feature of the Ivorian tax system is its extensive earmarking of individual taxes to particular expenditure functions, rather than channeling them to general budgetary income. The justification for earmarking noted in an internal World Bank report was "that it limited current expenditures and directly provided for investment and debt service." However, in recent years, earmarking has proliferated "to the extent that comprehensive tax policy is virtually nonexistent."[5]

Table 13-5 gives the distribution of all tax revenues going to the general budget (BGF, *Budget Général de Fonctionnement*), the investment budget (BSIE, *Budget*

Table 13-4. *Characteristics of the Côte d'Ivoire's Tax System*

Characteristic	*1965*	*1970*	*1975*	*1980*	*1982*	*Percentage increase in revenues, 1965–82*
Tax effort	.199	.204	.204	.213	.225	n.a.
Domestic VAT to GDP	.019	.026	.021	.031	.043	n.a.
Import TVA to GDP	.029	.032	.029	.031	.026	n.a.
Percentage distribution of total tax revenue						
Import taxes	45.2	38.8	36.5	35.1	30.0	678
TVA	14.6	15.7	14.4	14.3	11.7	846
Duties	30.7	23.1	22.1	20.8	18.2	598
Export taxes	21.0	21.9	17.4	11.6	9.8	447
Total trade taxes	66.2	60.7	53.9	46.7	39.7	604
Indirect taxes	23.6	28.2	31.3	39.0	45.5	2,166
TVA + TPS	9.5	10.2	13.9	14.7	19.0	2,234
TVA	—	—	8.9	8.8	12.1	—
TPS	—	—	5.0	5.9	6.9	—
Other excises	14.0	18.0	17.5	24.3	26.5	2,117
Direct taxes	10.2	11.1	14.8	14.3	14.9	1,605
Total domestic taxes	33.8	39.3	46.1	53.3	60.3	1,997
Total	100.0	100.0	100.0	100.0	100.0	1,075
Percentage distribution of VAT tax revenues						
Import TVA	60.4	60.7	51.0	49.4	38.1	—
Domestic TVA + TPS	39.6	39.3	49.0	50.6	61.9	—
TVA	—	—	31.4	30.4	39.4	—
TPS	—	—	17.6	20.2	22.5	—
Total	100.0	100.0	100.0	100.0	100.0	—

— Not available.
n.a. Not applicable.
Sources: CIRES (1985) for tax information; *U.N. Statistical Yearbook* for GDP, base information.

Table 13-5. *Distribution of Tax Revenue to Various Budgets*
(percent)

Year	*General budget (BGF)*	*Investment budget (BSIE)*	*Debt amortization (CAA)*	*Other*	*Total*
1972	65.5	15.6	11.6	4.3	100.0
1974	72.2	11.6	10.0	6.6	100.0
1976	75.7	7.9	8.6	7.8	100.0
1978	69.5	8.2	13.6	8.7	100.0
1980	62.5	9.1	14.6	13.9	100.0
1982	69.2	3.2	19.5	8.2	100.0
Change in nominal tax revenues, 1972–82	372	10	799	922	436

Source: République de Côte d'Ivoire (1985); CIRES (1985).

Spécial d'Investissement et d'Equipement), the debt amortization budget (CAA, *Caisse Autonome d'Amortissemen*), and other specialized budgets over the period 1972–82. Changes in the shares of various budgets in the total revenues reflect changes in the earmarking of TVA-TPS (see table 13-6) and other taxes. Especially striking is the 800 percent increase in the nominal value of taxes for debt purposes between 1972 and 1982; their share of total tax revenue rose from 11.6 percent to 19.5 percent. During the same period, the investment budget share fell from 16 to 3 percent of total tax revenues; in nominal terms, investment budget tax revenues rose by only 10 percent between 1972 and 1982.

Table 13-6 shows the pattern by which TVA-TPS is earmarked for particular expenditure purposes. The recent rate increases (1977, 1978, and 1982) were designated for the CAA. Between 1974 and 1982, the TVA-TPS receipts earmarked for the CAA rose from 17 to 38 percent of all TVA-TPS receipts; furthermore earmarked TVA-TPS revenues increased from 53 to 60 percent of all taxes earmarked to the CAA. At the same time, earmarking of TVA-TPS to the BSIE decreased after 1974 and was eliminated in 1981.

External debt problems were the principal causes of these changes. The externally funded component of the Côte d'Ivoire's investment budget rose from an annual average of CFAF 24 billion in 1970–74 to CFAF 57 billion in 1975–79 and to CFAF 169 billion in 1980–84 (Ediafric, various years, and *Bulletin d'Afrique Noire*, various editions). As a result, external public debt rose from CFAF 90 billion in 1970 to CFAF 525 billion in 1976 and to CFAF 2,275 billion in 1982 (*Bulletin d'Afrique Noire*, February 21, 1985; United Nations 1983; World Bank 1985, table 16).

TVA-TPS Responsiveness: Buoyancy and Elasticity Estimates

The increased TVA-TPS share of total tax revenues may be due to increases in tax rates, coverage, the size of the tax base, and economic growth. Buoyancy and elasticity concepts are used to identify these sources of

Table 13-6. *Earmarking of the Côte d'Ivoire TVA-TPS to Various Budgets*
(percentage points of the normal rate)

	TVA allocation				*TPS allocation*				
Year	*BGF*	*BSIE*	*CAA*	*Total*	*BGF*	*BSIE*	*CAA*	*Other*	*Total*
1960–61	8	—	—	8	7	—	—	—	7
1962–63	8	2	—	10	7	2	—	—	9
1964–67	8	3	2	13	7	3	2	—	12
1968	9	3	3	15	9	3	2	—	14
1969–73	9	3	3	15	8	3	3	1	15
1974–75	12	1	3	16	9	3	3	1	16
1976	13	1	3	17	9	3	3	2	17
1977	13	1	4	18	10	3	4	1	18
1978	13	1	5	19	10	3	5	1	19
1979–80	12	1	6	19	10	3	5	1	19
1981	13	—	6	19	13	—	6	—	19
1982	13	—	7	20	13	—	7	—	20

— Not available.
Source: Republique de Côte d'Ivoire (1985).

change. The tax-to-income and the tax-to-base buoyancies are the percentage changes in tax revenues relative to percentage changes in GDP or tax base, respectively. The base-to-income elasticity is the percentage change in the base relative to the percentage change in GDP. The built-in elasticity is the percentage change in tax revenue adjusted for discretionary rate changes relative to percentage change in GDP.

In table 13-7, estimates are presented for tax-to-income and tax-to-base buoyancies for trade taxes (import duties, import TVA, and export taxes), for domestic indirect taxes (domestic TVA, TPS, and excises) and for domestic direct taxes.[6] Base-to-income elasticities for trade taxes and for domestic indirect taxes and built-in elasticities for import TVA and domestic TVA and TPS are also shown. The period covered is 1971–1982; the TVA and TPS were not reported separately before 1971.[7]

The estimates in table 13-7 can be interpreted as follows. First, the TVA and the TPS were most responsive of all taxes to increases in GDP. Domestic TVA-TPS revenues rose between 20 and 26 percent more rapidly than GDP. Second, the import TVA was less responsive to income and base increases than the domestic TVA, probably because of base erosion and exonerations under the investment code. Third, base-income buoyancies were greater than one for trade taxes and about equal to one for the TVA and the TPS. The larger trade buoyancies indicate that trade grew more rapidly than GDP over the period; the domestic TVA-TPS base-income buoyancies indicate that the TPS base grew slightly faster than the TVA base (compare 1.01 with 0.96). Fourth, built-in elasticities were slightly greater than one for the domestic TVA and the TPS but much less than one for the import TVA. A built-in elasticity of one means that revenues, adjusted for rate increases, rose at the same rate as GDP. The domestic TVA and TPS built-in elasticities indicate that the percentage of the base effectively taxed (that is, the coverage of the base) rose as GDP increased. The low built-in elasticity for the import TVA suggests that investment code exonerations and shifts in import composition more than offset the effect of rate increases. Comparison of the tax-income and tax-base buoyancies and the built-in elasticity for the TVA and TPS also suggests that increases in the rate and the coverage of the base were more important contributors to TVA-TPS revenue growth than increases in the base in the 1970s and early 1980s

Buoyancy measures show the effects of all changes on tax revenues relative to the base or to GDP. When there have been significant increases in legal rates, it is useful to examine the partial elasticities of tax revenues with respect to rate and base changes. Log-log, least squares regressions can be used estimate tax-to-rate and tax-to-base elasticities.[8] If the data for the independent variable measure the effective or true base, there is no possibility of change in the coverage (through evasion or changes in the number of firms opting for the TVA instead of the TFA), and the elasticities are unity. In practice, the data used (for the import TVA—imports c.i.f. plus duties; for the domestic TVA—manufacturing plus construction GDP net of TVA; for the TPS—services including commercial GDP net of TPS) are imperfect proxies for the theoretical bases. In the Côte d'Ivoire the theoretical bases have grown relative to the data used to measure them, coverages within the theoretical bases have changed, and there are multiple rates. The regression estimates reflect the effects of these changes and consequently may differ from unity.

The partial elasticity of import TVA revenues with respect to rates was not statistically significant while the partial elasticity with respect to the base was significant and close to one (see table 13-8). Import TVA revenues increased at roughly the same rate as the base despite

Table 13-7. *Côte d'Ivoire Tax Buoyancy Estimates, 1971–82*

Type of tax	*Tax income buoyancy*	*Tax-base buoyancy*	*Base-income elasticity*	*Built-in elasticity*
All taxes	1.01	—	—	—
Import taxes	0.95	0.90	1.05	—
Duties	0.99	0.92	1.05	—
TVA	0.91	0.89	0.98	0.74
Export taxes	0.60	0.56	1.04	—
Total trade taxes	0.84	0.80	1.05	—
Indirect taxes	1.18	—	—	—
TVA + TPS	1.22	1.22	0.99	1.06
TVA	1.20	1.24	0.96	1.04
TPS	1.26	1.22	1.01	1.06
Excises	1.15	—	—	—
Direct taxes	1.14	—	—	—
Total domestic taxes	1.17	—	—	—

— Not available.

Table 13-8. *Estimated Equations: Tax versus Rates and Bases*

Type of tax	$\delta T/\delta R(R/T)$	$\delta T/\delta B(B/T)$	R^2	D.W.
Import TVA	−0.08	0.88	98.0	1.76
t-statistic	−0.07	4.48		
Standard error	1.20	0.20		
TVA	3.95	0.56	98.5	1.10
t-statistic	2.85	2.32		
Standard error	1.38	0.24		
TPS	7.33	0.01	97.3	1.84
t-statistic	8.89	0.10		
Standard error	0.82	0.08		

the TVA rate increases. This suggests that shifts in the composition of imports may have offset rate changes. The coefficients for the domestic TVA suggest that some of the increased tax revenue was due to increases in the theoretical base and that much of the increase must be attributed to rate increases and expansion of coverage within the theoretical base. For the TPS, the high partial elasticity with respect to rates may be due largely to extension of coverage of services simultaneously with rate increases, while the statistical insignificance of the partial elasticity with respect to the base can be attributed to the inadequacy of the data as a measure of the true base.

Another way to examine this problem is to compare the legal rate to the "effective" rate (the ratio of tax revenues to the base). Table 13-9 gives this information for the domestic TVA during 1971–82. The legal rate is the normal tax-inclusive rate; the effective rate is the ratio of TVA to the sum of manufacturing and construction GDP.

Table 13-9 indicates a clear trend. With the exception of downturns between 1976 and 1980, the ratio of the effective rate to the legal rate increased. The downturns were due to an increased share of construction in the base. From 1971 to 1975, construction activity represented 30 percent of the base; from 1976 to 1980, its share averaged 38 percent; in 1981 and 1982, construction's share fell to 31 percent. Hence, these calculations suggest that construction activity is more likely to avoid the TVA than manufacturing activity. The TVA's coverage increased whenever manufacturing activity constituted 70 percent of the TVA base. The factors that combined to increase coverage include a rise in the share of modern manufacturing in the manufacturing sector, a decline in evasion, difficulties in obtaining reimbursement of TVA in export activities, and (possibly) reductions in the number of activities exonerated of TVA or subject to the lower rate.

In recent years TVA-TPS revenues have stagnated because of lack of growth of GDP.[9] To increase TVA revenues (or to offset declines), policymakers have the option of raising rates or increasing the coverage of the base and improving administration. Our results suggest that the latter may be more effective. Koumoué Koffi also cautions that, because of the already high rate, "further rate increases risk stagnation or decreases in revenues from fiscal evasion or contraband or, in sectors where evasion is impossible, a voluntary restriction of activity" (Koumoué Koffi 1981, p. 15, authors' translation).

Evaluation of the Ivorian TVA-TPS under Other Criteria

Equity and Incidence

Attempts to estimate the impact of Ivorian taxes on income distribution are subject to the same types of methodological problems found in other countries (see McLure 1986). And in the Côte d'Ivoire data for evaluating the progressivity of the TVA-TPS are sketchy. Nevertheless, the limited information outlined below supports the proposition that the Ivorian TVA-TPS is progressive over the range of income of most Ivorians.

A survey of family budgets in the capital, Abidjan, in 1956 was used to examine the incidence of the TVA-TPS with respect to family spending (Territoire de la Côte d'Ivoire 1956). This survey decomposed monthly spending patterns of 560 families into ten product categories for eight spending brackets. First, the share of spending in each product category subject to TVA-TPS was found. Then, for each spending bracket, the share

Table 13-9. *Comparison of the Legal and Effective Tax Rates, 1971–82*

Year	*(1) Legal rate*	*(2) Effective rate*	*(3) Ratio (1)/(2)*	*Year*	*(1) Legal rate*	*(2) Effective rate*	*(3) Ratio (1)/(2)*
1971	0.15	0.069	0.458	1977	0.18	0.092	0.509
1972	0.15	0.074	0.490	1978	0.19	0.103	0.542
1973	0.15	0.071	0.474	1979	0.19	0.091	0.480
1974	0.16	0.079	0.494	1980	0.19	0.084	0.442
1975	0.16	0.085	0.532	1981	0.19	0.095	0.502
1976	0.17	0.094	0.550	1982	0.20	0.129	0.643

Table 13-10. *Taxable Shares of 1956 Family Budgets by Average Monthly Family Spending of African Wage Earners, Abidjan*
(percent)

Monthly spending bracket	Percentage of family units in sample	Share of total budgets			
		Nontaxed food	Taxed food	Other taxed items	Total taxed items
Less than 5,000 F	2.9	53.8	8.4	14.9	23.3
5,000–9,999 F	24.6	49.4	7.7	24.3	32.0
10,000–14,999 F	28.8	44.0	6.9	31.0	37.9
15,000–19,999 F	16.6	38.5	6.0	37.2	43.2
20,000–24,999 F	10.2	34.9	5.4	41.3	46.7
25,000–29,999 F	8.0	33.8	5.3	46.9	52.2
30,000–34,999 F	5.0	27.5	4.3	48.0	52.3
35,000 F or more	3.9	27.7	4.3	56.2	60.5
Total	100.0	37.8	5.9	37.3	43.2

of spending subject to TVA-TPS was estimated as a weighted sum of spending subject to TVA-TPS in each product category using product category shares as weights.

Our estimates, given in table 13-10, indicate the share of spending subject to TVA-TPS is larger in higher spending brackets because the nonfood share of spending is larger. For families in the lowest spending brackets, nonfood expenditures made up 37.8 percent of total spending, of which 14.9 percent was taxable. For the highest spending brackets, nonfood expenditures were 68.0 percent of total monthly spending, of which 56.2 percent was taxable. As food expenditures fell in importance, the percentage of spending subject to TVA rose from 23.3 to 60.5 percent for the various family budgets.

Table 13-10 indicates that the TVA-TPS structure involves some degree of progressivity within the urban sector. This progressivity still exists, because income distribution has not altered significantly since independence. From 1960 to 1975, average real per capita income rose by 36 percent, with nonagricultural real per capita incomes falling by 11 percent and agricultural real per capita incomes rising by 52 percent (Bresson and Ponson 1978, p. 27). However, even with the increase in agricultural income, the 1975 average would place most families in the lower spending brackets. Threefourths of income earners received CFAF 220,000 or less in 1970 (in 1970 prices); 95 percent earned less than CFAF 260,000 (Bresson and Ponson 1978, p. 18). With adjustment for price increases between 1960 and 1970 (no price index is available before 1960), 95 percent of the population of Côte d'Ivoire would have spent less than CFAF 15,000 monthly, and 50 percent would have spent less than CFAF 10,000 monthly (in 1960 prices). Clearly, no more than 40 percent of the spending of a vast majority of the population was subject to TVA-TPS.

Tax Neutrality and Incentive Effects

By itself the Ivorian TVA-TPS is more neutral than its production tax predecessor. It eliminated some of the cascading effects (by reducing the bias toward vertical integration) and some of the biases against capital (by reducing double taxation) in the production tax. Nonetheless, the TVA-TPS may accentuate a bias in the investment code favoring capital-intensive production methods; among other provisions the investment code exempts "priority" firms of TVA for ten years on imported capital goods and inputs (excluding those that can be produced in the Côte d'Ivoire).[10]

The Ivorian TVA-TPS creates some non-neutrality in product and factor markets independent of its relationship with the investment code, according to a World Bank study done in 1985. These include the following.

- *Different rates.* The rate structure affects resource allocation through prices and consumer demand.
- *Small versus large firms.* Potential bias against large firms in wholesale and retail trade is avoided by exempting these activities altogether. Similarly, many specific agricultural products and activities are exempted for all firms. Within manufacturing the exclusion of small producers may give rise to a bias against small producers who cannot use the credit for TVA paid on inputs or invoice TVA to customers. The small firm can avoid this bias by opting for the TVA if it chooses. Small construction firms may have imported inputs subject to the TVA invoiced directly to the customer (see below).
- *Different rates on imports and domestic production.* There is only one case of different rates on specific imports and domestic production.[11] Nonetheless, differences have occurred between the import and domestic rates for the same activity,

when imports were described incorrectly as related products subject to lower tax and when differences existed between the tariff and the tax code nomenclature (Koumoué Koffi 1981, p. 190).

- *Rounding of the import rate.* The rounding of the tax-exclusive import rate to the nearest integer causes a small difference between the import and domestic rates for the same activity.[12]
- *Deductibility of the* TVA *on investments.* The deductability of the TVA on investments may cause a small bias favoring vertical or horizontal integration of existing firms, because they can immediately credit the TVA against the tax liability from their other operations.
- *Reimbursement of the* TVA. The TVA paid on inputs used in exports is credited against TVA liability and can lead to reimbursement. However, an internal World Bank report stated in 1974 that "in practice it has been difficult for exporters to obtain the refund." Koumoué Koffi also implies as much when he states "in principle, the beneficiaries should not find too many difficulties in obtaining satisfaction" (Koumoué Koffi 1981, p. 202, authors' translation). He presents data which indicate that in 1974 there were reimbursement demands of CFAF 304 million against budgeted revenues for reimbursement of CFAF 235 million. Difficulties with the reimbursement process can work against firms with insufficient domestic TVA liability.

  A related problem associated with the investment code arises with the exemption of TVA on imported inputs, but not on local inputs. When reimbursement is difficult, priority firms have an incentive to substitute imported for local inputs in export production. This bias is eliminated to the extent that firms supplying inputs for export production are allowed to omit the TVA.
- *Nonexclusion of the* TVA *on local capital goods.* Priority firms are exempt from the TVA on imported investment goods. This imparts a slight indirect subsidy to imported investment goods and may cause local construction firms to bill imported material directly to their priority firm clients to avoid tax liability (Koumoué Koffi 1981, p. 70). The tourism investment code allows exoneration of the TVA on both imported and local investment goods.

Administrative Issues

The domestic TVA-TPS is relatively inexpensive to administer, although the import TVA is not. We obtained crude estimates of administrative costs from the 1983 budget (République de Côte d'Ivoire 1982). The *Direction Générale des Impôts* (DGI), which collects domestic taxes, and the *Direction Générale des Douanes* (DGD), which collects trade taxes, are units within the Ministry of Economics and Finance. The latter's budget totaled CFAF 9,669 million (salaries of CFAF 7,129 million and materials of CFAF 2,540 million) in 1982; total tax collections in 1982 were CFAF 561,339 million. The average administrative cost burden for all taxes then is the ratio of these expenses to total taxes collected (1.72 percent). Using the same method, we estimated the administrative cost burden of domestic and trade taxes separately. The DGI employed 456 persons in 1982. Applying the average salary in the Ministry (CFAF 1,536,364) to these 456 persons yields a total personnel budget of about CFAF 700 million. To this, add other material costs directly budgeted to the DGI (CFAF 107 million) and common ministry expenses prorated on the basis of employment (CFAF 142 million) for a total of CFAF 949 million. Hence, DGI administrative costs (CFAF 949 million) were 0.28 percent of domestic taxes (CFAF 338,288 million). To the extent that this ratio applies to the domestic TVA-TPS, it indicates low administrative costs, probably because of its narrow base. Similar estimates for the import TVA yielded a much higher estimate of 2.2 percent for administrative costs.[13]

Summary and Conclusion

The Ivorian TVA-TPS system was introduced without much difficulty. It evolved from the tax structure that had existed before independence and offered improvements in neutrality, equity, and ease of administration. It did not involve significant rate increases over its production tax predecessor. From being primarily a tax on imports, it has become an important tax on domestic activity.

Although the Ivorian TVA-TPS retains some non-neutrality, it is a marked improvement over its predecessor. It involves some bias favoring capital (particularly imported capital goods) and more fully integrated production. These biases are minor compared with those found in other aspects of the Côte d'Ivoire tax policy (especially the investment code).

The Ivorian TVA-TPS system is not a comprehensive VAT. The TVA has a narrow scope, and the TPS is a turnover tax on services. We estimate the effective base for the TVA at no more than 14 percent in 1982, an increase from 10 percent in 1971. The TVA-TPS system has the potential to become a comprehensive VAT as the informal sector becomes more fully integrated with the

modern sector and as administrative capacity develops. In the interim, Ivorian TVA-TPS revenues should grow slightly faster than GDP as a result of a more rapid growth of the base and broader coverage within this base. To attempt to increase revenue by raising its already relatively high rate or by extending its coverage to nonmanufacturing sectors would invite increased evasion and require substantial increases in administrative capacity.

Notes

1. The investment provisions made compliance somewhat more complex since not all capital goods were eligible for this credit (for example, taxes on filing cabinets, but not desks, were allowable credits). An investment code adopted at the same time as the TVA exempted imported capital goods from TVA for "priority" firms, which reduced recordkeeping requirements and shifted tax liability forward to domestic value added.

2. As an example, consider an import with a c.i.f. value of CFAF 100 subject to a 50 percent duty. Under the former system, the duty was CFAF 50 and the forfeit tax was CFAF 23.36 (CFAF 150 x 0.1557). The import's cost, after clearing customs, was CFAF 173.36. Under the TVA, the duty remains CFAF 50; the special import duty is CFAF 11.295 (CFAF 100 x 1.50 x 0.0757); and the TVA is CFAF 14.52 (CFAF 100 x 1.50 x 1.0757 x 0.09). The import's cost, after clearing customs, is CFAF 175.81. For this example, the increase in taxation was CFAF 2.45, or roughly 10 percent of the former forfeit tax (CFAF 23.36).

3. For example, a tax-inclusive rate of 14 percent translates into a tax-exclusive rate of 16.27 percent, which is rounded down to 16.0 percent for imports; a tax-inclusive rate of 15 percent yields a tax-exclusive rate of 17.65 percent, which is rounded up to 18 percent.

4. For example, revenues from this tax from 1971 to 1974 ranged from CFAF 9 million to 12 million; in 1975, they rose to CFAF 175 million, then fell back to CFAF 6 million in 1976 and rose again to CFAF 257 million in 1977 (CIRES 1985).

5. A World Bank mission in 1981 noted the following problems connected with earmarking: (a) lack of coordination and timing of expenditures and liquidity management, (b) a tax structure becoming increasingly determined by expenditure programs, (c) difficulties in comprehensively reviewing taxes, and (d) a continuance of programs financed by earmarked taxes after their need has diminished or been eliminated.

6. The general form of the regression is:

$$\ln T = a_0 + a_1 \ln X + \text{error}$$

The percentage change in the dependent variable (T) relative to the independent variable (X) is $a_1 = (\delta T/\delta X)\ (X/T)$. For the buoyancy measures, the dependent variable is tax revenue for various taxes. The income measure is GDP. GDP is considered the appropriate base for aggregate tax revenues and for aggregate domestic taxes. For import duties, the base is imports c.i.f. For the import TVA, the base is imports c.i.f. plus duties. For export duties, the base is exports f.o.b. For the domestic TVA, the base is manufacturing plus construction GDP, net of TVA. For the TPS, the base is service GDP, including commercial activities, net of TPS.

7. Estimates using TVA-TPS data for the 1960–82 period were slightly larger, suggesting that revenues were more sensitive to rate and base changes before 1971.

8. The regressions have the following form:

$$\ln T = b_0 + b_1 \ln R + b_2 \ln B + \text{error}$$

where T is tax revenue, R the legal tax rate, and B the tax base. The tax to rate elasticity is $b_1 - (\delta T/\delta R) \times (R/T)$. The tax to base elasticity is $b_2 = (\delta T/\delta R) \times (R/T)$.

9. Import TVA and domestic TVA-TPS going to the BGF and BSIE were estimated to fall by 4 percent (from CFAF 120,970 to CFAF 116,125) between 1982 and 1985 (Glasman 1983; *Bulletin d'Afrique Noire*, January 31, 1985).

10. The following data indicate the bias toward capital from the investment code, trade policy, other domestic distortions (such as a high minimum wage), and the TVA-TPS. In 1972 capital-labor ratios for the exportable activities of priority firms and firms not subject to the investment code were CFAF 1,846 and CFAF 868 per hour; for importable manufacturing activity, they were CFAF 3,050 and CFAF 1,447 per hour (Monson 1981, p. 270). The Ivorian TVA-TPS contributed somewhat to this bias toward capital.

11. Vehicles in the Côte d'Ivoire are subject to the normal rate, but the TVA applies only to one-half of the value of domestic sales (République de Côte d'Ivoire 1973, p. 139).

12. For example, the current high rate (26 percent) translates into a tax-exclusive rate of 35.13 percent, which is rounded to the nearest integer (35 percent) when applied to imports. When the normal tax-inclusive rate was 15 percent, the tax-exclusive rate applied to imports was 18 percent rather than 17.65 percent (15 percent / 85 percent = 0.1765).

13. In 1982 DGD salaries were CFAF 3,623 million (for 2,358 persons); materials, including prorated common ministry expenses, were CFAF 1,203 million; total estimated DGD expenses were CFAF 4,826 million. Total 1982 trade taxes were CFAF 223,051 million, of which import TVA revenues were CFAF 65,970 million. Budgeted DGD expenses as a percentage of total trade taxes were 2.2 percent.

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14

Consumption Taxes in Sub-Saharan Africa: Building on Existing Instruments

Zmarak Shalizi and Lyn Squire

Many observers of tax systems in developing countries have noted that at early stages of development a high proportion of public revenue is derived from the taxation of formal sector production and international trade transactions. This form of taxation has been accepted as necessary and unavoidable where per capita income levels are low, since this is associated with the presence of a large subsistence or informal sector in the economy and a limited capacity to administer income and expenditure taxes.

Public finance literature has long recognized that taxing production processes and international trade transactions can reduce the efficiency of domestic resource use (Diamond and Mirrlees 1971; Newbery and Stern 1987). It is useful, therefore, to periodically assess whether administrative capabilities in developing countries have improved enough to warrant a gradual reduction in the reliance on international trade taxes in favor of domestic taxes and on production taxes in favor of consumption taxes.

The theme of this chapter can be summarized in three propositions. First, a tax on consumption expenditure should be a feature of a well-designed tax structure in the long run. Second, while recognizing the limitations imposed by the administrative capacity of tax departments in developing countries, tax reforms should, nevertheless, be consistent with the desired long-run structure of taxation. And third, to the extent possible, tax reforms should build on existing tax instruments.

The three propositions, however, are treated in different ways. The first proposition, the desirability of taxes on consumption, is accepted with little elaboration on the grounds that consumption expenditure is an important base for taxation and that it is preferable for commodity taxation to avoid interfering with the efficiency of domestic production or the opportunities provided by international trade.

The core of the chapter discusses the second and third propositions, that is, that incremental changes be consistent with the long-term desired tax structure and that the incremental changes build on existing tax instruments. These two propositions are potentially incompatible. There is nothing to guarantee that the existing tax structure will possess the rudiments of the tax structure that is desired in the long run. One purpose of this chapter, therefore, is to identify situations where these propositions are compatible and where they are not. In addition, there is no established theoretical justification for either proposition, although they accord well with common sense. The second purpose of the chapter, therefore, is to identify issues of practical importance that merit further theoretical analysis.

The empirical part of the chapter is concerned with Sub-Saharan Africa for two reasons. First, the World Bank has done much research on tax systems in Sub-Saharan Africa, which resulted in a policy paper on tax reform in the continent (Shalizi and Squire 1986). Second, tax systems in Sub-Saharan Africa are usually considered less mature than those in other parts of the world, because they depend heavily on trade and production taxes and have a less well-developed capacity to administer other taxes. This situation increases the likelihood of a conflict between the last two propositions.

Before proceeding to the main discussion, the features of commodity taxes that qualify a tax instrument

as a consumption tax are restated. The term "full-fledged" consumption tax is reserved for a tax that:

- avoids taxation of transactions between producers (that is, does not tax inputs used in production) and does not cascade through interindustry links in the production process;
- is based on the "country of destination rule," does not differentiate between different sources that supply the domestic market (imports or domestic production), and does not include in its base domestic production destined for external markets, that is, exports;
- goes through the retail stage of the production-distribution chain; and
- is broadly based and includes, in addition to manufacturing activities, nonmanufacturing activities such as construction, utilities, and some services.

The list of characteristics of a full-fledged consumption tax does not include uniform tax rates across products. The latter can be justified on the basis of administrative convenience. In general, however, some degree of differentiation will be necessary and appropriate on grounds of either equity or, where adequate information is available, equity and efficiency.

Taxes that exhibit the first two characteristics, or can readily be converted to have these characteristics, are referred to as "embryonic" consumption taxes here. The third characteristic—that the tax go through the retail stage—is a necessary but insufficient condition for a sales-type tax to avoid taxing transactions between producers, whereas a VAT-type tax through the manufacturer or importer can exhibit the first two characteristics without going through the retail stage. This is the reason that the tax most likely to be referred to in this chapter as an embryonic consumption tax is a commodity tax with VAT-like characteristics.

This chapter has four sections. The first describes the extent to which taxes that have the basic features of an embryonic tax on consumption expenditure are found in Sub-Saharan Africa. A detailed discussion of one such tax in Malawi is followed by more summary evidence on similar taxes in other African countries. The second section focuses on the process of reform. How can a country move from the existing tax structure to one with tax instruments that more closely resemble genuine consumption taxes? In addressing this question, the pressures to generate revenue and reform trade regimes are reviewed. Bank recommendations on trade policy usually give more weight to the third proposition than to the second one. That is, the use of existing taxes are recommended that are not part of the long-run, preferred structure of commodity taxation and that will, therefore, have to be removed at some point in the future. There is no theoretical justification for any particular sequence of tax reform, however. With this point in mind, the third section outlines several issues that warrant further study. These include the consequences of not being able to tax at the retail stage, the difficulty of providing production subsidies in lieu of tariffs to support domestic production, and the appropriate treatment of the large, untaxed, informal sector that is characteristic of most African economies. A final section presents the conclusions.

Consumption Taxes in Sub-Saharan Africa

It is preferable to build a tax reform around an expanded role for an existing tax instrument rather than to introduce a new tax instrument (proposition three), and the instrument chosen should be consistent with the desired long-term structure of taxation (proposition two). Since consumption taxes are desirable in the long-term system of taxes, it is necessary therefore to identify countries in Sub-Saharan Africa that already possess embryonic consumption taxes. In this analysis, rather than relying on the formal name of a tax instrument, the emphasis is on identifying existing tax instruments with the desired economic characteristics, that is, commodity taxes that do not interfere with production efficiency and trade opportunities, such as a consumption-type VAT or a retail stage general stages tax on final consumer goods. For example, one such tax—the Malawian surtax—has many of these features of a VAT even though it is not, in administration or name, a full-fledged VAT.

The Malawian Surtax

In 1970, Malawi introduced a tax known as the surtax.[1] The base for this tax is dutiable imports and domestic manufacturing. The tax is levied on the c.i.f. price plus duty for imports and the ex-factory price plus excise for domestic manufactures. Exports are not subject to the surtax. When it was introduced, the surtax rate was 6 percent on imports and 5 percent on domestically produced goods. The current rates are 30 percent for imports and 25 percent for domestic manufactures. In fiscal 1983–84, the surtax accounted for 47 percent of all commodity taxes and 29 percent of total tax revenue. All registered producers (essentially all those paying the surtax on their output) are exempt from paying the surtax on their inputs, whether imported or purchased locally. This scheme, generally described as a ring system, ensures that all manufactures within the ring are taxed on their value added rather than on gross output. This avoids both the distortions in the choice of inputs used in production and the cascading of taxes through the taxation of intermediates.

The Malawian surtax therefore has features of a

consumption-type VAT through the importer and manufacturer stages, where the country-of-destination rule applies and exports are zero-rated. At least within the ring, all inputs are tax free, and the tax does not distinguish between imports and domestic manufactures.[2] This type of consumption tax differs from a full-fledged consumption tax for two reasons. First, the tax does not go through the retail stage. Thus, the tax rate paid by consumers on the retail price of any commodity will not be determined solely by the surtax rate but will also depend on the distribution margin. If these margins differ among goods, then, as a percentage of the retail price, the taxes will vary among goods, even if a single rate surtax is implemented. Second, inputs used by those not paying the surtax on their output are subject to tax. That is, nonregistered producers, primarily those in the informal manufacturing sector and most of nonmanufacturing sectors, are subject to input taxation. This disrupts production efficiency unless there are no possibilities for substitution. These departures from a pure consumption tax notwithstanding, the Malawian surtax does contain the basic elements of an embryonic consumption-type VAT. The next issue is whether any embryonic consumption taxes can be found in other African countries.

Existence of Embryonic Consumption Taxes in Sub-Saharan Africa

As noted in the introduction, the two main groups of consumption taxes differ in the administrative apparatus they presuppose. VAT-like taxes avoid taxing the production process even though they may not go through the retail or wholesale stage, whereas, for a sales tax to avoid taxing production, it must be implemented at the retail stage on final goods only. Table 14-1 identifies the countries possessing embryonic VAT-like consumption taxes, and Table 14-2 identifies those possessing embryonic sales-like consumption taxes.

VAT-like taxes. The tax instruments in Table 14-1 were selected because they at least avoid the cascading

Table 14-1. *VAT-Like Taxes in Sub-Saharan Africa*

Tax base: imports and domestic production			*Tax base: domestic production*		
Country	*Name of tax*	*Rate (percent)*	*Country*	*Name of tax*	*Rate (percent)*
Côte d'Ivoire	Tax sur la valeur ajoutée	9.5–28	Benin	Impot sur le chiffre d'affaire interieur	18–21
Malawi	Surtax	0–30	Burkina Faso	Tax sur le chiffre d'affaire	18–21
Mali	Sales tax	10–40	Ethiopia	Transaction tax	5–7
Mauritania	Turnover tax	4–16	Gabon	Tax de consummation interieur	Variable
Niger	Tax	13.5–30	Seychelles	Turnover tax	5–10
Senegal[a]	Taxe sur la valeur ajoutée	7–50	Zaire	Contribution sur le chiffre d'affaire l'interieur	18–30
Swaziland	General sales tax and sales duties	5–20			
Togo	Tax generale sur les affaires et tax locale	2–14			

a. Traditional VAT through the production stage with a system of crediting.
Source: IMF, *Recent Economic Developments*, various issues, appendix II.

Table 14-2. *Sales-Like Taxes in Sub-Saharan Africa*

Tax base: imports and domestic production			*Tax base: domestic production*		
Country	*Name of tax*	*Rate (percent)*	*Country*	*Name of tax*	*Rate (percent)*
Ghana	Sales tax	5, 11.5	Cameroon	Tax interieur de la production et tax unique	7
Mauritius	Sales tax	5			
Somalia	Sales tax	5			
Uganda	Sales tax	10–80	Kenya	Sales tax	17
Zimbabwe	General sales tax	16	Madagascar	Tax unitaire sur les transactions	15
			Nigeria	Sales tax	5, 11.5
			Zambia	Sales tax	15.50

Source: IMF, *Recent Economic Developments*, various issues, appendix II.

Table 14-3. *Revenue from Embryonic Consumption-Type Taxes as a Percentage of Total Tax Revenue, 1966–82*

Country	*1966*	*1970*	*1974*	*1978*	*1982*
Benin	6.10	5.10	8.00	7.24	8.70
Burkina Faso	12.10	12.70	14.29	13.98	20.77
Côte d'Ivoire	22.27	27.07	27.50	28.77	30.70
Ethiopia	4.11	6.77	8.63	8.17	10.49
Ghana	9.49	10.97	6.36	6.84	11.55
Kenya	6.31	6.70	23.66	25.32	29.77
Madagascar	14.30	30.49	32.92	18.12	25.68
Malawi	12.96	16.66	26.02	26.66	29.95
Mauritius	8.85	9.72	5.57	6.15	7.60
Senegal	0.00	21.03	23.41	28.86	31.30[a]
Tanzania	5.01	23.84	30.88	34.51	54.84
Zaire	1.29	1.97	3.58	10.13	18.97
Zambia	1.46	0.97	6.79	12.25	10.32
Average	8.69	13.38	16.74	17.46	22.36

Note: Excludes import duties and excise taxes but includes broadly based turnover and related commodity taxes in addition to VAT-like and sales taxes.

a. 1980

Source: IMF, *Government Financial Statistics,* various issues.

features of production taxes, and, in some cases in addition to the noncascading feature, they avoid differentiating between sources of supply to the domestic market. Thus, fifteen countries have some kind of tax that allows for exemptions or credits as a minimum on domestic interfactory sales and in some cases on imported inputs. The precise form of the taxes, however, varies significantly among countries. Some are levied on a wide range of imports and domestically produced goods. Others apply only to selected commodities. Some go through the wholesaling stage. Others are effective only through the import or manufacturing stage. The general sales tax in Swaziland, for example, applies to imports and domestically produced goods, but exports, raw materials, semiprocessed goods, and intermediates are exempt. The *tax de consummation interieure* in Gabon, however, applies only to production by enterprises under the investment code, and only certain raw materials and interfactory sales are exempt. This diversity not withstanding, Table 14-1 demonstrates the existence, at least in the tax structure, of embryonic VAT-like taxes in a significant number of Sub-Saharan African countries.

Sales taxes. Table 14-2 provides similar information for the sales tax. As with Table 14-1, the actual form of the tax varies among countries. The general sales tax in Zimbabwe, for example, applies to final goods sold at the retail stage and, at least in principle, covers imported and domestically produced goods at the same rate, whereas the sales tax in Ghana, which also covers imported and domestically produced goods, taxes locally produced goods at a lower rate than competing imports and does not go through the retail stage.

Quantitative Importance of "Embryonic" Consumption Taxes

The mere presence of a tax in the tax structure, however, does not indicate its importance in practice. Unfortunately, easily accessible and internationally comparable tax data are not sufficiently disaggregated for this analysis. Thus, Table 14-3 presents the trend in the share of total tax revenue generated by all broadly based, domestic commodity taxes (that is, excluding excises and import duties) for countries with data for 1966–82. Thus, in addition to embryonic consumption taxes, such as the VAT-like and sales taxes described earlier, the ratios in Table 14-3 include some commodity taxes that fall on interindustry transactions, such as turnover taxes. Since these latter broadly based production taxes can be converted to embryonic consumption taxes by introducing a noncascade feature, the readily available data base has not been disaggregated further.

Despite this weakness in the data in Table 14-3 (that is, the inclusion of broadly based production taxes), it can be argued in light of the more detailed evidence for a few countries, such as Côte d'Ivoire, Kenya, Malawi, and Zaire, that the role of the embryonic consumption taxes has in fact grown substantially in recent years. The unweighted average share of revenue generated by these broadly based domestic taxes increased from 8.7 percent in 1966 to 22.4 percent in 1982. In some countries, embryonic consumption-type taxes generated more than a quarter of total tax revenue. Since the ratio of tax revenue to gross domestic product (GDP) has increased significantly throughout Sub-Saharan Africa in this period, revenue from embryonic consumption taxes will also have increased relative to GDP.

Together the information in Tables 14-1 to 14-3 suggest that many countries in Sub-Saharan Africa do indeed have, at least in rudimentary form, some functioning version of a consumption tax and that their role in generating revenue has been growing, which suggests adequate administrative capability to implement embryonic consumption taxes. Thus, the following section discusses how a country should build on these already-existing instruments.

The Process of Reform

As already noted, there is no well-established, theoretical justification for presuming that tax reforms made today need necessarily be consistent with long-run objectives for the tax system. Two practical arguments can be suggested, however, to support this position. The first is that, other things being equal, investors are more willing to invest when the fiscal environment is relatively stable than when many taxes are being changed constantly. It pays, therefore, to minimize the number of tax changes in order to reduce business uncertainty. The second argument reflects the fixed set-up costs of changes in administrative practice as well as the learning time needed to apply new measures. It is desirable, therefore, to minimize the frequency of tax reforms that introduce new instruments or administrative procedures.

In the past, departures from the path consistent with long-run objectives have been justified for administrative reasons or in response to other short-term pressures. The administrative constraint is presented as a lack of familiarity with the implementation of suitable instruments. This rationale has been used to justify the heavy reliance on production and trade taxes in Sub-Saharan Africa. The previous section addressed the administrative constraint and showed that a substantial number of countries in Sub-Saharan Africa can administer embryonic consumption-type taxes that do not interfere with production efficiency and that the role of these taxes in raising revenue has been increasing steadily. Short-run pressures, however, may cause the tax structures to depart from a desired long-run path.

There are two kinds of pressures. The first includes pressures arising from the expenditure side of budget. These, in turn, are of two types: those arising from shocks to the economy, such as changes in the price of oil or in global interest rates, and those arising from poor planning of revenue needs associated with growing capital and recurrent expenditures. Both types of expenditure pressures have resulted in urgent demands for additional revenue, which have been accommodated by hasty, ad hoc responses that either have not recognized the possible consequences for dynamic and static efficiency or have placed a lower weight on these consequences. The second kind of pressure arises from trade liberalization reforms that restructure trade tariffs based on a specific interpretation of efficiency; the intellectual antecedents of these reforms are found in the literature on effective protection. The following examples of trade policy recommendations that reduce effective protection but move the tax system away from its long-run, preferred position illustrate this point.

Revenue Pressures: The Case of Malawi

Table 14-4 illustrates the rapid increase in government current expenditure that occurred in Malawi between 1974 and 1984. Between these years, current expenditures increased from 16.0 to 24.6 percent of GDP, with much of the increase occurring from 1978 to 1980. The expansion reflected increased debt service payments coupled with the need to satisfy the demands of a growing population and to provide adequate remuneration for the civil service. "Tax effort," here defined as the ratio of tax to GDP, followed suit. In Malawi, it increased from 11.7 percent of GDP in 1974 to 17.1 percent by 1984, again with most of the increase occurring from 1978 to 1980.

This experience was not unique to Malawi. Expenditure and revenue expanded similarly in many other African countries. The average ratio of government current expenditure to GDP for thirty-six Sub-Saharan African countries increased from 13.9 percent in 1966 to 20.2 percent in 1981 (Shalizi and others 1985, pp. 8–9). For the same group of Sub-Saharan African countries, the ratio of tax to GDP increased from 11.8 percent in 1966 to 17.8 percent in 1981, with a buoyancy of 1.25 (Shalizi and others 1985, p. 16). As a result, the current ratio of tax to GDP in Africa is similar to that in other parts of the developing world. By the late 1970s, tax effort in Africa was averaging 18.0 percent, compared with 15.0 percent in Asia, 17.8 percent in the Middle East, and 17.9 percent in the western hemisphere (Tanzi 1983, p. 29). In principle, there is no reason why a rapid increase in tax effort should involve a departure from an appropriate system of taxation. In many countries, however, the urgent revenue require-

Table 14-4. *Government Expenditure and Taxation in Malawi, 1974–84*
(percentage of GDP)

Item	*1974*	*1978*	*1980*	*1982*	*1984*
Current expenditure	16.0	17.5	22.2	23.6	24.6
Tax revenue	11.7	15.2	17.8	17.6	17.1

Source: *Public Financial Statistics* (1983) and *Malawi Economic Report* (1985).

Table 14-5. *Changes in Implicit Tax Rates in Malawi, 1976 and 1982*
(percent)

	Imports[a]		*Domestic production*	
Kind of good	*1976*	*1982*	*1976*	*1982*
Consumer goods	27.5	40.6	8.2	10.6
Intermediate goods	1.9	8.3	0.9	2.3
Capital goods	1.9	14.3	0.0	0.0
Total	11.7	32.1	6.0	6.4

a. Private imports only. Public imports are tax free.

Source: *Annual Economic Survey* (1973–79 and 1981); *Annual Statistics of External Trade, Monthly Statistical Bulletin*, various issues.

ments precluded the careful assessment of alternatives that might otherwise have been used. Although the particular method of revenue generation varied among countries, the particular case of Malawi illustrates one mode of fiscal adjustment that clearly increased the distortionary cost of taxation and moved the tax system away from a preferred long-run tax structure.

Much of Malawi's revenue-generating effort in the period under review involved increased taxation of imports. The implicit effective rate of taxation on imports —revenue from imports divided by the c.i.f. value of imports—increased from 11.7 percent in 1976 to 32.1 percent in 1982. Table 14-5 provides more detail on the movements of implicit aggregate tax rates. Between 1976 and 1982, nominal protection increased for consumer goods and intermediates, and the taxation of inputs—both for intermediate and capital goods—increased. In other words, Malawi generated additional revenue but, in doing so, increased protection for import-substitutes, reduced the competitiveness of export-oriented production in the absence of a well-functioning duty drawback scheme, and introduced distortions in the choice among inputs used in production.[3] Despite continuous reductions, the budget was still high in 1985, and Malawi introduced explicit export taxes on its principal export products, tea and tobacco, in the expectation that the burden would fall on distributors engaged in international trade rather than on growers, who would have less incentive to produce for export.

Given the constraints on the level of public expenditure in Malawi and the rate at which it could have been generated in a more efficient manner, the relevant question is whether the same revenue could have been generated in a more efficient manner. Calculations in Chamley and others (1985) suggest that the government's revenue requirements—MK227 million—using 1983 data (the latest year with detailed production, trade, and fiscal statistics) could have been met by increasing the surtax rate from 25 to 33 percent rather than relying on increases in less-desirable import tariffs, levies, and the eventual introduction of an explicit export tax. This strategy would have yielded the required amount of revenue, avoided the taxation of inputs used in production, avoided an increase in nominal and effective protection rates, and avoided the disincentives resulting from the taxation of exports. Within the large-scale manufacturing sector and the export sector, therefore, production would have been more efficient, since it would have responded to a different pattern of price signals. Moreover, the use of the surtax would not have required any new administrative mechanism. Thus, the required revenue could have been generated in the short run within the existing administrative framework without compounding existing distortions. At the same time, the resulting high surtax rate focused attention on the narrowness of the existing commodity tax base and the need to improve administrative capacity over the medium term to expand the base subject to the surtax.

Measures along these lines are now being considered seriously by the Malawian government. In the April 1986 budget, the government announced the removal of the export tax and a five percentage point increase in the surtax. They also are reviewing the technical assistance required to restructure tariffs and expand the surtax base with a view to reducing the revenue role of the former and increasing that of the latter. The point remains, however, that, under the pressure of urgent demands for extra revenue, countries adopt tax measures that are inconsistent with long-run objectives and that subsequently have to be changed. Such an approach to generating revenue reduces production efficiency and increases business uncertainty, both of which are avoidable.

Tariff Reforms: World Bank Recommendations

A second source of pressure that causes countries to diverge from a steady approach to a more desired tax structure arises from recommendations by the World Bank on tariff reform, which are frequently made as part of policies to liberalize international trade. Much of this advice derives from trade theory in general and the concept of effective protection in particular. Although the normative content of an analysis of effective protection rates is limited, in practice the rates are often so high and uneven that some effort to reduce the average rate and its variance is probably desirable.[4] The important question, however, concerns the manner in which this should be done.

Recommendations on trade policy often contain three steps. First, quantitative restrictions should be replaced by tariffs. Second, nominal protection, mainly for consumer goods, should be reduced by lowering

nominal tariffs. And third, to reduce effective protection below that implied by the second step, tariffs on intermediates should be increased until eventually a single tariff rate applies without exception to all imports.[5]

The first two recommendations are consistent with a move toward an increased reliance on consumption taxes. The third recommendation, however, is more problematic, although it is frequently made, as, for example, in the structural adjustment loans for Senegal (1980), Côte d'Ivoire (1981 and 1983), Burundi (1986), and Zaire (1986). Such trade policy recommendations are not limited to Africa and have also been proposed in other developing countries.

Although certain circumstances may occasionally justify this particular set of policy recommendations, its use as a general policy prescription raises several issues. First, taxes on inputs are not a feature of a long-run, preferred tax structure, both because they distort production choices where there are substitution possibilities between inputs and because they cascade as a result of interindustry transactions. At some point, therefore, they will have to be eliminated. Their imposition and subsequent withdrawal may harm business confidence and strain local tax administration. Whatever their merits in the short-run, these longer-run consequences should be borne in mind.

Second, even in the short run, they are not always the preferred method of reducing protection. For consumer goods, reduced nominal protection coupled with increased tariffs on imported inputs will obviously reduce effective protection. It will also provide protection to the domestic production of intermediates, even if there is no basis for such protection (for example, on infant industry grounds). There is no argument in theory or general empirical principle to suggest that this "compensatory" protection is superior to accepting the level and variance of effective protection for consumer goods arising from the reduced level of nominal protection (step two of the trade policy recommendations alluded to above).

The earlier discussion of consumption taxes, however, offers an alternative approach to reducing protection for consumer goods, which avoids increasing nominal tariffs on imported inputs.

Many countries already have broadly based taxes that are levied ex factory on the domestic production of consumer goods. Nominal protection, and therefore effective protection, can be reduced without a loss of revenue by increasing the taxes on the domestic production of consumer goods in relation to the nominal tariffs on competing imports. Where an embryonic consumption tax is available, this recommendation requires a temporary supplemental tax on domestically produced goods until the nominal tariff on consumer goods can be reduced further. Where embryonic consumption taxes are not yet available and taxes on domestic production are separate from tariffs on competing imports, implementation is straightforward. The commodity tax on domestic production can be increased up to the point where it equals the tariff on competing imports.

This use of taxes on the domestic production of consumer goods to reduce nominal and effective protection beyond that possible through directly lowering nominal tariffs on consumer goods has not always been recognized in the context of trade reform, mainly because the focus of such exercises is usually confined to quotas, duties, and exchange rates. A broader, public finance perspective that integrates duties and domestic taxes provides a better framework for the analysis of policies to reduce protection, even in the short run.

Even if the limitations of the "compensatory" protection arguments are conceded, tariffs on inputs should be increased for *revenue* reasons. In fact, Bank advice on trade reforms has sometimes failed to consider the implications of tariff reform for the budget. Since taxes on international trade form an important part of total revenue (around 43 percent in 1981 in Sub-Saharan Africa), the effect of a major tariff reform could have significant—positive or negative—effects on the budget. If a reform leads to a major loss of revenue, ad hoc revenue-generating measures might be introduced, which would not only negate the beneficial effects of reform, but also jeopardize future efforts to restructure taxation (as happened with the first structural adjustment loan to Kenya, in which the initial reduction in import tariffs was reversed in order to generate revenue to reduce the budget deficit). The revenue argument to increase tariffs on inputs used in production can be justified only if the revenue-generating capabilities of less-distortionary taxes, such as consumption-type taxes, has been exhausted. In light of the previous discussion on the growing share of revenue generated by consumption taxes, constraints in adequately offsetting tariff reductions through higher consumption-type taxes must be demonstrated, not assumed.

Implication for the Process of Tax Reform

The basic point of this discussion is that consumption taxes should play a more important role in tax reform. As the above examples suggest, changes in the tax system often occur in crises. Countries will take new tax measures to generate urgently needed revenue. Often this will be accompanied or followed by changes in the system of tariffs when it becomes overwhelmingly clear that the efficiency of domestic production has been seriously impaired. In both circumstances, an expansion in the role of consumption taxes should be given serious consideration, primarily to avoid ad hoc or short-run measures that will ultimately have to be reversed.

Where embryonic consumption taxes are already in place, their role as a source of revenue should be increased at the expense of tariffs. In the short run, this can be achieved by an increase in the consumption tax rate with a compensating reduction in tariff rates. In the long run, an expanded base will allow further reductions in rates and generate an increasing amount of revenue from the taxation of domestic activities.

The development of the *tax sur la valeur ajoutée* in the Côte d'Ivoire illustrates this process. In 1960, the tax accounted for 15 percent of total revenue, with 70 percent of its contribution coming from the taxation of imports. By 1982, the corresponding figures were 30 and 40 percent, respectively. Thus, the tax has increased in importance, and an increasing share of its total revenue is coming from the taxation of domestic activities. Similar, although slightly less dramatic, changes occurred with the Malawian surtax. Tax reforms in countries with embryonic consumption taxes should concentrate on administrative improvements that expand the base of these taxes by gradually incorporating more nonmanufacturing sectors into the tax net and moving the collection points further along the production-distribution chain from the import-ex factory level toward the retail level.

Although many countries in Sub-Saharan Africa have embryonic VAT-like consumption taxes, whose expansion is administratively feasible, many others do not. In some cases existing tax instruments can readily be transformed into embryonic consumption taxes. Consider Ghana's sales tax. Unlike a genuine consumption tax, this tax discriminates between imported and domestic goods. Nevertheless, the administrative structure is already in place for conversion to a consumption tax through the import-manufacturing stage; that is, establishing a common rate for the two bases subject to tax (imports and domestic production) will transform this tax into a more fully developed consumption-type tax.

There are other cases, such as Zambia, where the sales tax is based only on domestic production and competing imports are subject to tariffs. In this case, extending the sales tax to include imports and eliminating tariffs by an equivalent amount will result in an embryonic consumption tax. Since importers are already being taxed and since the domestic production of consumer goods is also subject to tax, the development of this embryonic consumption tax requires coordinating and restructuring existing tax instruments rather than introducing an entirely new one. It should, therefore, be administratively feasible. Thus, restructuring trade tariffs and domestic taxes to produce a broadly based consumption tax that is, or becomes, a major source of revenue should be the primary objective of tax reform in countries that do not already have an embryonic consumption tax.

In still other countries—for example, Cameroon, Ethiopia, and Tanzania—the only broadly based domestic tax may be a turnover tax. This type of tax implies the taxation of inputs, which cascades through the production process and encourages vertical integration. In this case, movement to a consumption tax requires elimination of taxes on inputs and integration with the taxation of imports. Once again, however, the presence of a turnover tax provides the administrative structure for a relatively simple transition to a consumption tax.

Taxation of inputs can be eliminated in several ways. Malawi's surtax, for example, is based on the exemption principle. Registered producers—those paying surtax on their output—are exempt from paying tax on their inputs. This scheme, generally described as a ring system, is probably the simplest to administer where the tax base is relatively small. In Malawi, for example, 85 percent of total revenue from the surtax is generated from imports and eleven large firms. As the tax base extends beyond the manufacturing sector, however, the crediting system associated with the value added tax may be more appropriate. This is the approach adopted in Côte d'Ivoire, for example. An intermediate approach —part exemption, part crediting—has been introduced in Kenya. In this scheme, goods that are clearly intended for production, such as major capital goods, are exempt, while other goods, such as sewing machines or textiles, that could be for final consumption or intermediate use are subject to the crediting system. This hybrid approach may be a convenient intermediate step in the move toward a genuine value added tax with full crediting.

Given existing administrative capacity to handle valuation and enforcement problems, it is unlikely that these embryonic consumption taxes can be extended to agriculture, small-scale enterprises, and services (including trade and transportation) in the short run. As a result, the embryonic consumption taxes achieve production efficiency within the large-scale, import-substituting, and exporting sectors but not necessarily between these sectors and the rest of the economy. Thus, the system confers a competitive advantage on sectors whose output is not subject to tax ex factory but which compete with large-scale, tax-paying manufacturers or with imports.

As noted above, however, embryonic consumption taxes are usually designed such that those who escape taxation of their output are obliged to pay taxes on their inputs. This reduces, but probably does not offset, the competitive advantage in the domestic market that the tax system would otherwise confer on sectors whose output escapes taxation. In addition, the taxation of inputs distorts production decisions, thereby impairing the efficiency of production in these latter sectors. Moreover, it reduces their competitiveness in export

markets. As the tax system develops, however, it will be possible to extend the consumption tax along the production-distribution chain to the retail level and to include more and more enterprises and sectors. As this happens, the proportion of inputs subject to taxation will decline. In this way, the existing rudimentary consumption taxes are transformed into genuine consumption taxes, and the taxation of inputs is phased out naturally without any change in the structure of tax instruments.

Although reform during crisis may be the norm, there are exceptions. Countries, such as Cameroon, with adequate flows of revenue from nonrenewable resources are well advised to plan for the future. Thus, the Cameroonians have recognized that the current source of revenue—oil—will be gone in about ten years and that new sources of revenue will be required. Introducing a sound tax system at this time would ease the transition from oil to other sources of taxation. In this process, consumption taxes should play an important role. The Cameroonians are currently experimenting with a standard VAT in the construction sector. If the experiment proves successful, it will presumably be extended to other sectors. Cameroon is probably one of the few countries in Sub-Saharan Africa that has the time to experiment with new forms of tax administration. It depends less, therefore, on the current rudimentary consumption taxes, which can serve as the administrative base for a more extensive reliance on such taxes. For other countries, where the need for reform may be more pressing, the existence of embryonic consumption taxes is a critical factor in the design of an appropriate reform strategy.

Issues for Further Study

Throughout this chapter, consumption taxes in Sub-Saharan Africa have been described as rudimentary or embryonic. The merits of a consumption tax have often been presented in the abstract, however, as though it was a full-fledged consumption tax. This section considers some problems associated with increasing reliance on the partial or incomplete consumption taxes that will undoubtedly have to be used in Sub-Saharan Africa for many years to come.

Only under certain circumstances is production efficiency a legitimate objective when there is a revenue constraint (Newbery and Stern 1987). In particular, an optimal system of commodity taxes has to be able to tax every consumer price at rates depending on the structure of preferences underlying the observed pattern of demand. This will lead to a multirate system of commodity taxes (rather than a single rate tax), with the rates differentiated by elasticities of demand. Since it is unlikely that sufficient information on demand will be readily available in most developing countries and since taxation at the retail state is the exception rather than the rule in Sub-Saharan Africa, the implementation of an optimal differential rate tax system, a prerequisite for production efficiency, must be ruled out.[6] This, notwithstanding most analysts, including those in the effective protection tradition, pursue production efficiency (but with a move toward uniform rates) as a legitimate objective in its own right. We will return to this point below.

Three issues are examined in this section. The first concerns the effect on revenue and production efficiency of not being able to tax the output of a large portion of the economy, primarily informal manufacturing and most nonmanufacturing sectors. The second focuses on equity; should consumption be taxed at a single rate or at several different rates in order not to impair the progressivity of the overall tax system. The third discusses how to provide protection to a particular sector or industry.

The Informal Sector

Most countries of Sub-Saharan Africa have large, informal sectors, comprising small firms, cottage industries, and other businesses operating in a range of activities from agriculture to services. By and large, these enterprises are rarely subject to output taxes. In principle, therefore, they are at a competitive advantage in relation to formal sector enterprises in the same lines of production, which, being large, are subject to output taxes (generally ex factory). The tax system thus distorts incentives in favor of the informal sector.

A partial solution to this problem can be to tax the inputs purchased by the informal sector. In Malawi, for example, the proposals being considered involve a single rate tax on all inputs (whether imported or domestically produced). Registered companies, those paying surtax on their output, are exempt from paying surtax on their inputs. Producers in the informal sector are not members of the ring, since they do not pay tax on their output. Hence, they do not receive exemption from paying surtax on their inputs. This effectively captures informal procedures in the tax net and partly offsets any competitive advantage they might otherwise receive through the tax system. Clearly, a surtax-crediting system through the chain of transactions between producers could achieve the same result. A sales tax at the retail level, however, can solve this particular difficulty if all retailers are taxed on final goods only—a more difficult option in most African countries.

The solution provided by the ring system or the crediting system warrants further analysis for two reasons. First, there is obviously no reason to suppose that taxing inputs of the informal sector will exactly offset the distortion caused by the failure to tax the output of

this sector. Second, taxing inputs will in itself distort the choice of production technology in the informal sector. The solution to both of these problems is to expand the tax base gradually until it covers the entire economy. Thus, although the taxation of inputs used in the formal sector is probably a reasonable, pragmatic approach, its exact implications for welfare deserve a more thorough assessment.

Equity

A uniform consumption tax implies that consumption expenditure is subject to a proportional tax. This may offset the progressivity imparted to the tax system through the taxation of personal income. A relatively simple solution to this problem involves the use of a multirate consumer tax. Given the constraints on the administrative capacity of African tax departments, this solution cannot be pushed too far. Nevertheless, the application of differential rates to a limited set of commodities can achieve a reasonable degree of equity. Commodities that are an important part of the consumption of the poor should be zero-rated (that is, exempted) or taxed at low rates. Conversely, commodities that are important in the consumption basket of the rich should be subject to rates higher than the base rate.[7]

When these principles were applied to the Malawian surtax, four tax rates were selected. The bulk of the commodities were subject to the standard surtax rate. Some commodities—such as bicycles—were virtually zero-rated, since they were important items in the consumption of the poor. At the other extreme, commodities such as motor vehicles and appliances were taxed at approximately twice the standard rate, since they were consumed primarily by the rich. Based on the 1983 expenditure survey, this rate structure implied that the tax content of expenditures by the richest of the four income groups was 18 percent, compared with only 9 percent for the poorest. Thus, despite the application of a standard surtax rate to a large number of commodities, a limited number of bands can impart a degree of progressivity to the overall tax system.

Again, this approach seems reasonable and pragmatic. It is worth recalling, however, that the proposals presented in this chapter are not consistent with optimal taxation theory, which is concerned with both the efficiency and the equity of the tax system. Its basic conclusion is that these objectives can best be achieved by pursuing production efficiency and setting differential taxes on consumer goods. These results emerge from the joint pursuit of efficiency and equity.

The approach adopted in this chapter is quite different, however, although it yields similar results. Thus, efficiency is pursued on the production side only. When attention is focused on the consumption side, the only concern is with equity. Both approaches result in production efficiency, but the differential consumption taxes emerging from the two approaches will differ. Unlike optimal tax theory, the approach followed here makes no attempt to minimize the distortionary costs affecting consumers. As noted above, there are good, practical reasons for not pursuing the optimal taxation approach, such as the resource cost of generating the information to set differential rates and to administer and enforce it. Nevertheless, it would be of interest to analyze the extent of the welfare loss implied by these proposals compared with that of optimal tax theory.

A related point concerns the failure of most embryonic VATs and sales taxes to reach the retail stage. This raises two problems. First, as with informal activities, part of the output of the production-distribution chain will not be subject to tax. Second, in calculating the effect of taxation on consumption, it is necessary to know the tax content of consumer prices. If these taxes were levied at the retail stage, the statutory rates would provide the required information (provided inputs were also not subject to taxation). Since they are not usually levied at this stage, the excluded distribution margins must be allowed for to determine the true tax content in the consumer price.

Protection

Most countries provide protection to certain sections of the economy. Genuine infant industries are difficult to identify, however, and the externalities alleged to accompany manufacturing are not easily measured. Nevertheless, protection is pursued in most countries and will undoubtedly continue. The issue, therefore, is how to minimize the cost of protection. The best prescription is a production subsidy, since this leaves the consumer price unchanged. Where production subsidies are not feasible, as in most nonregistered sectors of African economies, the alternative is a duty on competing imports.

The distortionary costs of protection have been extensively studied. It still may be useful to analyze these costs in an economy with a functioning consumption tax, however, especially if protection is applied to intermediate goods. Providing protection for consumer goods poses problems only if the commodity in question is a necessity that ought to be zero-rated. Protection can be provided to other consumer goods by reducing the tax on domestic production in relation to that on imports. This does not change the consumer price so that the degree of equity built into the tax system is unchanged. Instead, it simply results in a transfer from the government to the protected producer and thus mimics a production subsidy.

Difficulties arise with intermediate and capital goods,

however, because, like necessities, they are effectively zero-rated under consumption taxes. Any attempt to protect these commodities, therefore, will affect the domestic sales price and will impair the efficiency of those producers using these goods as inputs. The international competitiveness of exporters, for example, would be reduced to the extent that they use inputs produced behind protective tariffs. Establishing a functioning duty drawback scheme has proven quite difficult in Sub-Saharan Africa in the absence of a paper trail, as in the ring or VAT with crediting arrangements. Therefore, it would be useful to examine the most appropriate policy package in case protection is required for inputs.

Conclusion

This chapter has argued that embryonic consumer taxes already exist in many Sub-Saharan African countries and that, in designing tax reform, every effort should be made to build on these existing bases. The taxes are incomplete and partial, however, and will remain so for some time. Their extension and development depends on improvements in tax administration and on the general expansion of the formal sectors of the economy.

This observation highlights an important link between the structure of the tax system and its administration. If consumption taxes are part of the present system but are still underdeveloped and if consumption taxes are seen as a desirable component of the tax system in the long run, then selected improvements in administration can be easily identified. That is, ways need to be found to improve the exclusion of interindustry transactions from the tax base, to widen the tax base by including more and more enterprises from the informal sector, and to lengthen it by moving further down the production-distribution chain. Restructuring and expanding the tax base in this fashion reduces the importance of some of the difficulties noted above in "Issues for Further Study" and allows the rate of taxation to be reduced. Appropriate administrative reform, therefore, should accompany reforms in the structure of taxation involving greater reliance on consumption-type taxes.

Notes

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1. This description is based on Chamley and others (1985).

2. The surtax on imports is 20 percent higher than on domestic products—the so-called uplift factor—to offset certain transactions costs, not to provide protection.

3. In spite of the more rapid increase in the implicit tax rate on imported inputs in relation to those on imported consumer goods, it cannot be concluded that effective protection of domestic value added decreased across the board, because the level of aggregation obscures the fact that some industries had negative effective protection and others obtained inputs that were not taxed.

4. See, for example, Bhagwati and Srinivasan (1983, p. 131) and Bliss (1987).

5. We are here abstracting from other elements of stabilization and adjustment policies, such as changes in exchange rates, interest rate policies, price controls, and so forth, not because they are less important, but because this chapter focuses on the incentive and revenue implications of different types of explicit commodity taxes, including tariffs.

6. The consequences of not being able to tax all commodities are only just being analyzed; see, for example, Heady and Mitra (1982).

7. Exemptions tend to impart a greater degree of progressivity to the system of commodity taxes than do luxury rates, given the avoidance and evasion of very high rates.

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Part IV

Administrative Issues and Implementation of a VAT

15

Administering the VAT

Milka Casanegra de Jantscher

During the past two decades the most important innovation in the tax systems of developing countries has been the introduction of value added taxes that extend through the retail level. Before 1970 only two developing countries, Brazil and Uruguay, had such a tax; now twenty-two do.

The rates and coverage of the VATs in these countries vary considerably (see table 15-1). Some countries use a single rate, others apply several. The standard rate ranges from 5 to 20 percent. At first most developing countries applied the tax mainly to the sale of goods. Today practically all countries tax some services, and a few developing countries (Portugal and Uruguay, for example) apply the VAT to a broad range of services. Exemptions also vary widely. Most developing countries exempt basic consumer goods such as unprocessed foodstuffs and medicines. Some exempt goods other than necessities. A few developing countries, such as Chile, have broadened the scope of their VAT by greatly curtailing exemptions. The majority of developing countries use zero-rating exclusively for exports (table 15-1).

VAT yields vary considerably among developing countries. As a fraction of GDP, VAT collections range from less than 0.5 percent to more than 8.0 percent. The ratio of VAT collections to total tax receipts ranges from less than 7 percent to more than 35 percent. Data disclosing the portion of VAT revenue that is collected at the import stage are not available for all countries that apply a VAT, but where such information exists this share ranges between 30 and 65 percent. Some of the variation in the performance of the VAT in developing countries can be explained by differences in tax coverage and rates, and some of it can be explained by differences in economic structure, such as the openness of the economy, the size of the monetary sector, and the degree of concentration of production and distribution.

Differences in the effectiveness of tax administration also contribute to the wide variation in the VAT's revenue performance. This chapter summarizes the main features of VAT administration in developing countries and highlights those aspects that most strongly affect the success with which the tax is implemented.

It is important to bear in mind, however, that the diversity of developing countries is reflected in how the VAT is administered. Per capita incomes in the group range from the lowest-income to middle-income levels. Insofar as income levels reflect the existence of modern business practices and a relatively sophisticated level of tax administration, the problems of administering a VAT in middle-income countries do not differ markedly from those in industrial countries. In the lowest-income countries, however, the problems are quite different.

Some developing countries levy a VAT that extends no further than the import and manufacturing stages. The discussion in this chapter, however, is limited to the experience of developing countries in which the tax extends through the retail stage.

VAT Features and Their Administrative Implications

Experience in developing countries shows that a tax structure that minimizes problems of implementation is needed for successful administration of the VAT. Some features of the VAT that affect ease of administra-

Table 15-1. *VAT Rates and Revenue Shares in Developing Economies*

Economy	1983 GNP per capita (US dollars)	Year VAT was introduced[a]	VAT rates 1985–86 (percent)		VAT revenue as a percentage of:[c]	
			Standard	Other[b]	GDP	Total tax revenue
Chile	1,870	1975	20	0.5, 33, 35, 50, 90	8.12	37.43
Peru	1,040	1982	6		4.37	31.22
Brazil[d]	1,890	1967	17		6.49	28.74
Colombia	1,410	1984	10	0, 4, 6, 20, 35	2.08	27.13
Madagascar	290	1984	15		3.19	26.35
Korea, Rep. of	2,010	1977	10	0, 2, 3.5	4.03	25.07
Guatemala	1,120	1983	7		1.56	24.76
Uruguay	2,490	1968	20	12	4.55	23.49
Turkey	1,230	1985	10	0	3.10	21.90
Mexico	2,240	1980	15	0, 6, 20	3.18	19.71
Costa Rica	1,020	1975	10		3.69	17.42
Argentina	2,030	1975	18	5, 23	1.88	14.89
Equador	1,430	1970	6		1.33	12.35
Honduras	560	1976	5	6	1.48	12.23
Haiti	320	1982	10		1.07	11.48
Nicaragua	900	1975	10	25	2.84	10.42
Dominican Rep.[e]	1,380	1984	6		0.92	9.89
Panama	2,070	1977	5		1.86	9.08
Bolivia	510	1973	5		0.28	6.83
Niger	240	1986	25	15, 35	—	—
Portugal	2,190	1986	16	0, 8, 30	—	—
Taiwan	2,682	1986	5		—	—

— Not available.

Notes: Value added taxes extend through the retail stage in all the economies listed. The economies are listed in rank order by the share of total tax revenue contributed by the VAT.

a. Year when country introduced a VAT that extends through the retail stage. (Some countries had previously had a VAT that terminated at an earlier stage.)

b. In all the economies listed, exports are zero-rated. A "0" indicates that some goods or services sold for domestic consumption are also zero-rated.

c. 1983 data with the exception of Colombia (1984), Dominican Republic (1984), Guatamala (1985), and Turkey (1985). Data for these countries are provisional. VAT rates in 1983 may differ from those given for 1985–86, as for example in Peru, where the rate was 18 percent in 1983.

d. Rate shown is that of a VAT levied by states on intrastate transactions (ICM). In addition, the federal government levies a multirate VAT at the import and manufacturing stages (IPI). The combined yield of the ICM and IPI taxes is compared with GDP and with the total tax receipts of both federal and state governments.

e. The law that introduced the VAT extends it through the retail stage. Implementation of the tax among retailers was suspended by decree until November 1986.

Sources: Tax data from International Money Fund (1985) and IMF staff information. GNP data for all economies except Taiwan from World Bank (1985); for Taiwan, from the *Statesman's Yearbook*.

tion are the number of rates, the scope of exemptions and zero-rating, and the treatment of small enterprises.

Number of Rates

Many industrial countries have tried to make the VAT more progressive by taxing necessities at reduced rates and luxury goods at higher rates. These well-intentioned attempts at redistribution have increased the costs of administration. Commenting on the experience in the Netherlands, Cnossen (1982) wrote: "The reduced rate on so-called necessities has led to numerous arbitrary distinctions, litigation, and pressure to apply that rate to other items. . . . Also, the reduced rate substantially increases compliance costs for small firms. In short, it involves a lot of administrative nonsense and pointless distortions of consumer choice." Similarly, the Irish Commission on Taxation noted the impossibility of making a clear distinction between necessities and luxuries. It stressed the economic distortions that are created by a complex VAT structure and the heavy costs of compliance, especially for small shopkeepers (Sandford 1984). Thus European experience teaches the advantages of a single-rate VAT or at least a very simple rate structure.

Policymakers in developing countries are aware of the European experience. Nevertheless, in an effort to mitigate regressivity some countries have adopted VATs

with more than one rate. In some instances a VAT originally enacted with a single rate was later transformed into a multirate VAT. Mexico, for example, introduced a VAT in 1980 with a single rate of 10 percent. In 1983 the standard rate was increased to 15 percent, and two special rates (6 and 20 percent) were introduced.

Developing countries with multirate VATs tend to obtain a smaller fraction of their VAT receipts from their higher rates than estimates of the tax base would suggest. This is particularly true when the high rates apply to luxury goods, because the temptation to evade is strong. A compromise between the preference of administrators for a single rate and their desire to make the tax less regressive is to supplement a VAT with selective consumption taxes that are applied at the import and manufacturing levels only. This way selected goods are taxed at higher than standard rates, but enforcement is facilitated by confining the multiple rates to a small number of taxpayers. No credit is given against the VAT for the consumption taxes paid at the import and manufacturing levels. Chile, Costa Rica, and Peru have used this method.

Level of Rates

The level of the standard VAT rate is a recurring topic of discussion in developing countries. Some traders and tax administrators claim that standard rates of 18–20 percent are unenforceable in developing countries. They argue that high VAT rates provide such strong incentives for evasion that tax enforcement becomes all but impossible given the scant administrative resources available in developing countries. Some critics say that high rates tend to distort the allocation of resources because they help inefficient enterprises: By charging VAT on their sales and not paying the tax to the government failing businesses could continue to operate. Some opponents of high rates even advocate repealing the VAT and returning to a cascade turnover tax which could provide abundant revenues with much lower rates.

These arguments have been pressed in several developing countries (including some with rates below 18–20 percent), but to my knowledge only Peru has embraced them. In 1984, Peru reduced the standard VAT rate from 18 percent to 11 percent and early in 1986 reduced it again to 6 percent. The reductions were said to be motivated by a desire to improve compliance and remove one of the causes of the rapid growth of the underground economy (Bird and Gillis 1971). It is too soon to tell whether these objectives have been attained.

Opponents of the idea that high VAT rates are unenforceable in developing countries usually make the following arguments. First, both Brazil and Chile have had considerable success in implementing a VAT with a standard rate of around 18–20 percent. Second, in developing countries a substantial proportion of VAT revenue is collected at the import stage and a large percentage of the rest is collected from relatively few enterprises. In these circumstances there is little scope for improving compliance and revenue performance in the short-term through reductions in the standard VAT rate. Such reductions would almost certainly result in an immediate loss of revenue.

Without effective administration, neither high nor low VAT rates can be enforced in developing countries. Scarce administrative resources must be aimed at carefully chosen objectives to ensure an appropriate level of compliance, especially when the standard rate is raised to meet short-term revenue needs. Unless the administration is able to act quickly and effectively, such increases may not yield the desired revenue, because even large enterprises may fail to pay the tax if they are experiencing financial difficulties owing to a general downturn in the economy.

Exemptions and Zero-Rating

Exemptions of particular commodities complicate the administration of a VAT. Additional recordkeeping is required to segregate taxable from exempt sales, and in practice the distinction between what is exempt and what is taxed is often tenuous or arbitrary. Normal exemptions, which preclude refunds of the prior-stage tax borne on inputs of goods and services, are less difficult to administer than full exemptions (or zero-rating), which carry the right to a refund of prior-stage tax paid on purchases of goods and services.

The fact that exemptions complicate VAT administration has not deterred developing countries from exempting particular commodities. Distributional objectives have sometimes prevailed over administrative concerns. But administrative considerations have dominated in the area of zero-rating. Because this type of exemption increases the number of VAT refunds, most developing countries wisely have restricted it to exports. Tax administrations in such countries are poorly equipped to handle refunds of any kind, and adding to the number of refunds would divert administrative resources from enforcement of the VAT.

To facilitate administration, exemptions should be kept to a minimum. Where exemptions have been almost entirely eliminated (as in Chile), the VAT has been much easier to administer and therefore quite successful. In most developing countries, however, administrators must contend with exemptions of essential commodities. Although a case can be made for exempting certain basic commodities on distributional grounds, it is difficult to justify the exemption of particular regions or industrial activities from the VAT. In light of the administrative complexities created by such exemptions, developing countries should refrain from introducing them.

Treatment of Small Enterprises

The need to provide special treatment for small businesses under a VAT is much more pressing in developing than in industrial countries. Small traders are usually more numerous in developing countries, the literacy rate is lower, and business methods are less sophisticated. If small taxpayers in developing countries suddenly had to comply with the normal requirements of a VAT, they would not be able to cope. In addition, the tax administration would be overwhelmed by taxpayers who contribute little to total VAT revenues.

Several methods of dealing with small enterprises have been implemented in developing countries. One is to exempt all taxpayers whose yearly turnover is below a specified limit (Costa Rica uses this approach). Another is to subject taxpayers whose sales are below a specified limit to a turnover tax in lieu of the VAT (the Republic of Korea follows this strategy). Some countries (such as Mexico) apply a lump sum tax to taxpayers whose yearly sales are below a specified limit. This lump sum tax is sometimes graduated according to turnover. In some countries (Chile and Korea, for example) taxpayers may deduct taxes paid on their inputs from the lump sum or the special turnover tax. Yet another method of dealing with small taxpayers is to require their suppliers to add a notional tax to the price they charge, in lieu of the VAT that the small enterprises would otherwise be required to pay (Argentina uses this approach). Other countries apply methods that are hybrids of these—for example, exempting very small taxpayers and applying a simplified system to slightly larger ones.

The experience of developing countries shows that none of the methods used to deal with small taxpayers is wholly satisfactory. All are arbitrary, because they can only approximate the merchant's true liability if the value added mechanism were accurately applied, and all present technical or practical problems. Efforts to refine these methods usually introduce complications that defeat the objective of facilitating administration and increase the costs borne by small taxpayers. One of the main difficulties for the tax administration is to verify the gross sales of an enterprise that claims special treatment, since this is the usual criterion by which special treatment is conceded to small traders.

The chief objective of a special system for small taxpayers should be to increase gradually the number of taxpayers subject to the standard system. This increase should come about as the administration acquires experience with the VAT and taxpayers become accustomed to complying with basic recording and bookkeeping requirements. One way to include more taxpayers in the standard system is to freeze the level of the turnover limit below which taxpayers receive special treatment, as has been done in Costa Rica. Another is to make the special treatment more onerous than the regular VAT system, as in Chile. Of course caution must be exercised in adopting procedures that increase the number of regular VAT taxpayers, since the absorptive capacity of the tax administration is limited.

Most developing countries have abandoned the search for a truly equitable solution for small taxpayers and have turned their attention to finding ways to pull back into the regular system those taxpayers who are not "small" but masquerade as small. In some countries the special method for small taxpayers has been virtually abandoned because it imposes a heavier tax than the regular system (Chile), is too complicated to administer (Peru), or is not being complied with (Argentina).[1] For ease of administration, the best method of dealing with small taxpayers may be to exempt the truly small ones and require all others to comply with the regular VAT system. Less sophisticated taxpayers should be allowed to keep simplified records and perhaps to pay the tax bimonthly or quarterly, but should otherwise remain subject to the normal system.

Introducing a VAT

The experience of developing countries that have implemented a VAT ought to be instructive for those now considering this tax. It is difficult, however, to offer general guidance. The problems of introducing a VAT depend in large measure on whether the country has had previous experience with general sales taxes, the nature of the taxes that the VAT will replace, the effectiveness of the tax administration, the lead-in time, and the structural features of the VAT (rates, exemptions, and treatment of small taxpayers).

Publicity and Taxpayer Information

When a VAT replaces a sales tax that extends through the retail stage, preparations for implementing it are much less complicated than they would be had no sales tax existed previously or had the retail sector been excluded from the sales tax. There is also less taxpayer resistance to a VAT when a sales tax has been in place, because the taxpayers are already accustomed to complying with filing requirements. Even in these favorable circumstances, however, taxpayers must be made to understand that the VAT rate will be applied only to the value added. Otherwise the rate increases that usually accompany a changeover from a turnover to a value added tax will prompt taxpayer resistance and encourage noncompliance. Ignorance about the VAT may lead the public to accept without question price increases falsely attributed to the VAT. These comments suggest that a publicity campaign aimed at both taxpayers and consumers is necessary for the successful introduction

of a VAT. Where such efforts have been made, as they were in Argentina, Korea, and Mexico, for example, the VAT has been introduced without great difficulty.

Lead-in Time

Enough lead-in time should be allowed to permit careful preparation of regulations, return forms, and systems for registering taxpayers and processing VAT returns and payments. Once again, previous experience with a general sales tax that extends through the retail level makes a difference; Chile was able to reduce the lead time to a few months because of prior experience with a turnover tax.

Organizational Issues

Key decisions that must be made before introducing a VAT concern the choice of organization to administer the tax and the organizational changes required. Nearly all developing countries that apply a VAT through the retail stage have assigned its administration to the same organization that administers income taxation, which usually also administered the taxes that the VAT replaced.[2]

Some developing countries have considered establishing a separate organization to administer the VAT. One reason given for doing so was the "modern" nature of the tax, which, it was argued, would make administration by the existing (and somewhat antiquated) methods difficult. In Portugal, for example, the authorities considered assigning the VAT to a new agency that would perform all the administrative functions connected with the tax, including collection, processing of returns, and enforcement. They wanted to avoid the problems they had encountered with other taxes, whose main administrative operations—assessment, collection, and data processing—were divided among three different agencies. In the end, they decided to assign the administration of the VAT to the department in charge of income taxes, primarily to closely integrate the administration of the two types of taxes. Such integration facilitates the efficient use of all official documents and information relating to a given taxpayer and his or her business connections. It also allows for better planning and coordination of enforcement efforts for both types of taxes and makes use of current expertise in auditing taxes.

The organizational changes that are required by the introduction of a VAT will differ from country to country. If the tax department is organized along functional lines and a general sales tax was previously in force, no major changes are necessary. If the department is not organized by function, a special VAT unit must usually be established. Still, it would be preferable to integrate VAT administration within a tax department organized according to function. Responsibility for VAT collection should be assigned to the same units that collect other taxes, for VAT auditing to the units that audit other taxes, and so on, to coordinate administration of the VAT effectively with that of other taxes.

Staffing and Training Requirements

Other matters that must be considered before a VAT is implemented are staffing and training requirements. There is little information on the number of additional staff that have been required to implement a VAT in developing countries. In countries in which a sales tax extending through the retail stage preceded the VAT, tax administrations have generally assigned the same staff to administer the VAT.

In most developing countries the VAT is by no means a "mass" tax. Exemption levels that eliminate many small traders from the scope of the tax and highly selective taxation of services keep the number of VAT taxpayers low. Table 15-2 shows that the ratio of VAT taxpayers to population tends to be smaller in developing than in industrial countries. Because coverage of the tax is so limited, most administrations in developing countries have not needed large numbers of additional staff to implement a VAT.

All of them, however, have had to train their staff to administer the tax. Given the resource constraints faced by tax administrations in developing countries, most of them have conducted adequate training programs. Where training has been inadequate, taxpayer resistance to the tax has tended to increase.

Miscellaneous Problems

The introduction of a VAT through the retail stage has been accomplished without great disruption in most developing countries. Problems have sometimes arisen unexpectedly, as, for example, in the collection of VAT on imports. Because the primary responsibility for administering the tax has been given to the department in charge of internal taxes, customs officials have not always been fully informed about their responsibilities. Where small enterprises have been subject to new invoicing or bookkeeping requirements, they have protested vigorously, and the general level of resistance to the tax has increased. Finally, in countries where important features of the new tax, such as the rate, were not settled until the last moment, resistance against the VAT was accentuated.

Main Issues of VAT Administration

Identifying taxpayers, processing returns, controlling collections, making refunds, auditing taxpayers,

Table 15-2. *Number of VAT Taxpayers as a Percentage of Population in Selected Industrial and Developing Countries*

Country	Number of VAT taxpayers (thousands)				Taxpayers as a percentage of population
	Regular system	Simplified system	Forfait system	Total	
Industrial					
Belgium	381	111	64	556	5.63
France	686	963	786	2,435	4.45
Ireland	95	n.a.	n.a.	95	2.69
Italy	4,087	225	289	4,601	8.17
Netherlands	468	n.a.	n.a.	468	3.26
United Kingdom	1,355	n.a.	n.a.	1,355	2.42
Developing					
Argentina	514	n.a.	n.a.	514	1.79
Chile	395	4	n.a.	399	3.42
Colombia	46	53	n.a.	99	0.36
Ecuador	22	—	n.a.	22	0.27
Haiti	0.5	n.a.	n.a.	0.5	0.01
Korea, Rep. of	289	879	n.a.	1,168	2.92
Panama	7	n.a.	n.a.	7	0.36
Peru	13	—	n.a.	13	0.07
Uruguay	28	22	n.a.	50	1.68

n.a. Not applicable.
— Not available.
Note: Data for Chile, Ecuador, Panama, and Peru are for the year 1983. Data for Argentina, Belgium, and Uruguay are for 1984. Data for other countries are for 1985.
Source: Tax data from revenue departments of each country. Population data from World Bank (1985).

and levying penalties are the main tasks that must be performed by the organization in charge of the VAT. In addition to filing returns and paying the tax, taxpayers must comply with invoicing and bookkeeping requirements. How administrations perform their duties in developing countries and how taxpayer requirements differ from those in industrial countries will be described below.

Taxpayer Identification

Developing countries have followed a variety of approaches in establishing a system of registration for the VAT. In countries which had previously had a sales tax that extended through the retail stage, taxpayers usually were not required to register again and could continue to use their old identification numbers. In countries in which the previous sales tax did not extend to the retail stage, all taxpayers have been required to register for the VAT.

In an effort to establish a master file of taxpayers, several developing countries have adopted a system of registration in which each taxpayer is given a single identification number to be used in administering all taxes. In some countries such efforts have been successful and taxpayers use the number for both the VAT and other taxes. In other countries different numbers are used for different taxes. For more effective tax administration, the use of a single identification number for all taxes is advisable.

In some developing countries the VAT register is practically useless. The number of VAT registrations greatly exceeds the number of taxpayers who actually file returns. Misguided registration campaigns have encouraged thousands of persons to register who are not liable for the VAT. In other instances taxpayers have registered in order to avoid the tax that applies to unregistered taxpayers in lieu of the VAT. Taxpayers tend to register freely because they know that the administration's resources for checking their compliance with filing requirements are limited. Most developing countries have built up a file of "active" taxpayers, which are those who have filed a VAT return at least once. Because the tax administration uses this file for detecting nonfilers, it should be kept as current as possible.

Invoicing and Bookkeeping Requirements

Bookkeeping requirements for regular VAT taxpayers are basically the same in developing and industrial countries. The two groups have significantly different invoicing requirements, however. All industrial countries require invoices to be issued in transactions between VAT taxpayers, but most do not require VAT taxpayers to issue documentation to final consumers, except in the case of sales of services. In contrast, most developing countries require some form of invoicing for all transactions on which VAT is charged, including

sales to final consumers. For such sales, taxpayers are usually allowed to use a simplified invoice or to issue a cash register receipt.

Requiring vendors to give invoices to final consumers adds to the costs of compliance, particularly among smaller enterprises. Even though this requirement is unpopular, most tax authorities in developing countries believe that it is essential for enforcement of the VAT. Considerable administrative resources are currently devoted to checking the issuance of invoices to final consumers, and substantial penalties apply to traders who do not comply with this requirement. In Chile and Peru, for example, VAT legislation empowers authorities to temporarily close businesses belonging to offending traders.

To encourage consumers to request invoices, a few Latin American governments hold lotteries that use invoices as the tickets. The Turkish government makes payments to consumers on the basis of the volume of purchases they can document with invoices.

Those who believe that traders should be required to issue invoices to final consumers maintain that this requirement makes it more difficult for retailers to understate their sales and gives them an incentive to demand invoices from their suppliers. The result is greater compliance among both retailers and suppliers.

Opposition to the invoice requirement is based primarily on the increment it adds to the costs of compliance. Opponents also argue that VAT audits should be aimed primarily at manufacturers and other suppliers. Using information obtained from the input side, it should be possible to audit retailers effectively. Consumer attitudes also play a part in this debate. A recent survey in a Latin American country shows that the public tends to regard the invoice as a bargaining tool. If a retailer reduces the price, the buyer may not demand an invoice or may accept one showing a price lower than that actually paid.

Some developing countries require all retailers to use cash registers. But these machines are not immune to tampering. In family-operated enterprises, for example, cash register records do not provide a reliable check of gross sales.

Filing and Payment Requirements

There are considerable differences among developing countries in the filing and payment requirements for the VAT. The countries also use different methods for enforcing these requirements.

Filing and payment periods. In some developing countries—Argentina, Mexico, and Peru, for example—regular VAT taxpayers are required to file yearly returns in addition to making provisional monthly payments. Most countries, however, require monthly filing and payment of VAT and do not require taxpayers to furnish a yearly return. Experience shows that the yearly return does not add to the effectiveness of VAT administration because most administrations lack the resources to match the provisional monthly payments with it.

Collection lags. When the VAT was initially introduced in the developing countries, collection lags of forty-five to sixty days were not unusual. In times of high inflation such delays were costly to the government. As a result most developing countries have shortened VAT collection lags appreciably. Regular taxpayers are now usually required to pay VAT each month on sales made the previous month. Occasionally, when very high rates of inflation prevailed, large VAT taxpayers have been required to make semimonthly payments. Bimonthly payment periods or collection lags longer than twenty to twenty-five days are now rare.

Control of filing and payment. Several developing countries that impose a VAT use computers in administering the tax. In such countries the taxpayer register is usually maintained in the computer, and VAT returns are processed by machine. Few developing countries, however, use computers effectively to detect taxpayers who stop filing returns. Even in countries with considerable computer capacity and systems expertise, control of nonfilers is currently being done manually. This means that taxpayers who stop filing are detected only after long delays, which jeopardizes the collection of the delinquent taxes. To solve this problem, some countries have established effective manual systems for monitoring large VAT taxpayers' compliance with filing and payment requirements. Rankings of VAT taxpayers by the size of their payments are available in only a few developing countries. But most of them show that a few large taxpayers account for a considerable percentage of VAT collections on domestic transactions (for example, 5 percent of the taxpayers may account for more than 80 percent of such collections). In these circumstances it makes sense to have a special system for large taxpayers, and such systems have in practice produced excellent revenue results.

Statistical information. Meaningful statistical information on the VAT is remarkably scarce in most developing countries, even in those that use computers to process the tax returns. Authorities need to be told how useful tabulations of taxable sales and credits by activity and by volume of sales are for enforcing the tax and for economic analysis.

Audit of VAT

The initial literature on the VAT tended to minimize administrative difficulties by emphasizing the "built-in"

checking mechanism of the tax. Some administrators, however, expressed doubts about the effectiveness of this feature (Lent, Casanegra, and Guerard 1973). Such doubts have been confirmed by experience in both industrial and developing countries.

Few serious attempts to quantify VAT evasion have been made in developing countries, and most of the studies are unpublished. Periodically, officials refer to VAT evasion levels of 30, 40, or even 50 percent, but these assertions are sometimes based on sketchy evidence. Nevertheless, the general consensus is that considerable evasion of VAT occurs in developing countries (Pedone 1982).[3] Some methods used to evade the tax are underreporting of sales, abuse of the credit mechanism (which may involve the use of falsified invoices), and fraudulent refund claims.

Selection of cases for audit. Most developing countries that impose a VAT initially intended to develop procedures for comparing data on purchases and sales by various taxpayers. It was hoped that such cross-checking would provide an effective tool for selecting VAT taxpayers for audit and thus improve audit results. Tax administrations with data processing facilities planned to use them for massive cross-checking operations. Smaller administrations expected to accomplish the task manually and more selectively.

In practice, most developing countries have not implemented massive cross-checking schemes; Korea is an important exception. Practical difficulties and resource constraints have prevented them from doing so. Enthusiasm has been tempered by the realization that cross-checking of invoices will not detect sales where no invoice is issued or where underinvoicing takes place. Selective checks of invoices, particularly to ascertain whether credits against the VAT liability are supported by bona fide invoices rather than falsified documents, have proved useful for detecting taxpayers who merit further investigation. Where information is available about ratios of gross sales to credits by sector, authorities can focus upon taxpayers whose ratios deviate significantly from the norm. Data on imports, provided by the customs department, can be used in selecting taxpayers for audit. Checking the lists of suppliers to government enterprises is also effective: in several developing countries underpayments of VAT have been discovered among firms that sell to the government. Some vendors seem to think that government enterprises will not be audited and that therefore no attempt will be made to check suppliers to government.

Some developing countries have not yet developed audit selection methods appropriate for the VAT. Better selection of audit cases would lead to more effective use of scarce administrative resources and greatly improved enforcement.

Nature of VAT audit. VAT audit programs should be designed to distribute available audit resources among large numbers of taxpayers. This objective cannot be achieved if tax auditors use traditional methods and make an exhaustive check in each case. The developing countries with the best results in VAT enforcement use audit methods that call for checking a few selected items among as large a number of taxpayers as possible. For this approach to work, however, an effective audit selection system must already be in place and the auditors must have more information than just that which is included in each return (information about imports, for example).

Other enforcement methods. In addition to examining taxpayers' records, several countries enforce the VAT by checking inventories of goods on hand and inspecting merchandise in shops, warehouses, storerooms, and other business premises. Truckers who transport goods are required to carry consecutively numbered manifests corresponding to invoices. These manifests describe the items being carried and give the names and addresses and registered numbers of the buyers and sellers. Such methods have proved effective in those developing countries that apply them.

Refunds

The administration of VAT refunds is a persistent problem in developing countries. The legal and administrative framework of most developing countries makes officials reluctant to give tax refunds. Practically all developing countries give refunds to exporters, but some require other VAT taxpayers to carry forward their excess credits indefinitely (in some countries these credits are indexed for inflation). In other countries all VAT taxpayers are legally entitled to a refund if they have an excess credit. In practice, however, taxpayers other than exporters prefer to carry the credit forward rather than comply with the often tortuous procedures required to obtain a refund.

To the extent that excess credits stem from sizable purchases of capital goods, the difficulty in obtaining refunds erodes the value of the capital goods exemption that is the hallmark of the consumption-type VAT used in most developing countries.[4] Unless current legal and administrative traditions change significantly, however, this problem will persist.

As regards refunds to exporters, developing countries have some of the same problems as industrial countries. Evidence of abuse and fraud is widespread. Authorities must choose between unattractive alternatives. On the one hand, conducting too intensive a check before issuing a refund will impair the competitive position of the exporter. On the other hand, if

export refunds are not checked, serious abuses may escape detection. The best solution is probably to combine rapid checks for all export refunds with random in-depth audits.

Penalties

The penalties provided by law for violations of VAT regulations differ from country to country. In some developing countries taxpayers who evade the VAT may be sent to prison. Certain offenses may be punished with a temporary shutdown of the taxpayer's business premises. Practically all countries levy fines for failure to register and to file on time.

In practice, most developing countries find it difficult to impose stringent penalties for tax evasion. The problem is not technical but rather a matter of general attitudes toward tax compliance and enforcement. As a result the stricter penalties in VAT laws are usually not applied and consequently have little deterrent effect.

Costs of VAT Administration

Little information is available on the costs of administering a VAT in developing countries. Fragmentary data, supplemented by the impressions of administrators, suggest that the cost usually ranges between 1 and 2 percent of the VAT revenue collected. This is not much different from the costs of collection in industrial countries.

Low collection costs may not imply efficiency, but indicate instead that important functions are being neglected. Low collection costs for a VAT may mean that the administration is concentrating exclusively on the largest taxpayers and neglecting the others.

Conclusions

Administrative considerations have greatly influenced the structure of the VAT in developing countries. Because a single-rate VAT is easier to administer than a multirate VAT, several developing countries have opted for the former. The complexity of administering full exemptions (zero-rating) has led most developing countries to restrict them to exports. Small taxpayers have been dealt with by exempting those with gross sales below a certain threshold or by taxing them under a simplified system. Because of the difficulty involved in taxing services, most developing countries impose the VAT on selected services only. Once a VAT is in place, administrative constraints tend to distort some of its features. An insufficiency of resources leads administrations to concentrate their enforcement efforts on large taxpayers, which can encourage noncompliance among other taxpayers. Restrictive refund practices tend to distort the character of consumption VATs.

These remarks are not intended to be critical of tax administrations in developing countries that impose a VAT, nor do they imply that the VAT is not appropriate for such countries. My sole purpose is to point out that the broad-based and neutral tax discussed in public finance treatises is very different from the VAT that prevails in most developing countries and that administrative constraints are the main cause of this difference. Experience with the VAT shows, once more, that in developing countries tax administration *is* tax policy.

Notes

1. The Argentine system requires suppliers to apply a surcharge to unregistered traders in lieu of their VAT payments. To avoid this surcharge most small traders have registered, but few of them actually file VAT returns.
2. Exceptions include Brazil, where the VAT that extends through the retail stage (ICM) is a state tax, and Mexico, where administration of the VAT is shared by the federal and state governments.
3. Pedone (1982) cites evasion levels of 40–60 percent in Italy, depending on the measure used.
4. Features of an income-type VAT have been introduced into the taxes of Argentina and Peru. The tax paid on capital purchases is deductible in installments over a fixed number of years: three in Argentina and four in Peru.

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16

The VAT in Colombia

Guillermo Perry and Alba Lucia Orozco de Triana

In 1963, in response to a fiscal crisis, the Colombian Congress granted special authority to establish a sales tax. Until that time, there had been only excise taxes on tobacco, alcoholic beverages, and cotton (*Taxation in Colombia* 1964, pp. 164–68). However, because of a lack of administrative preparation, the sales tax was not implemented until January 1965 (Bird 1966).

Initially, the sales tax was to be applied only at the manufacturing stage. It was to cover only finished goods, and sales between industrial firms would be exempt if the purchaser could certify that the product in question would undergo subsequent transformation. Yet, so as to avoid double taxation, firms were allowed to reduce the sale price of goods in accordance with the cost of those raw materials on which a tax had been paid for any reason whatsoever. These provisions were extremely difficult to administer.

Subsequently, in 1966 all sales between manufacturing firms were taxed (Decree 1595 of June), except those to buyers producing tax-exempt goods or products for export; and manufacturers were allowed to credit taxes paid on the purchase of inputs "incorporated" into the product. In 1968 credit was extended to include all taxes paid on inputs "totally consumed" in the production process (Decree 2049 of July) and in 1974 to include taxes paid on any purchase made by the firm, except the acquisition of capital goods (Decree 1988 of October). Consequently, the tax gradually became a kind of "gross product" value added tax at the manufacturing level—more precisely, a consumption plus gross investment type of VAT, limited to manufactured goods (plus some services).

The tax on capital goods and subsequent ruling against crediting taxes paid on such goods were defended for simplicity of administration and collection (Bird 1966). There were also economic arguments in favor based on the fact that capital goods were subsidized by the exchange rate policy and by low interest rates (Bird 1966; Gillis 1971).

As for imports, the tax first applied to imported finished manufactured goods only at the point of sale—with provisions like those previously mentioned to avoid double taxation. Since this tax did not apply to direct imports, which were becoming common, in 1971 all manufactured goods began to be taxed at the moment of import (Decree 435 of March).[1]

Exports, foodstuffs, drugs, and textbooks were exempt from the beginning. The sale of inputs used to produce such goods was also exempt by virtue of certification from the purchaser. The difficulties encountered in controlling this procedure occasioned its elimination in 1974, and a system of zero-rating and refunds was created in its place. However, this reform considerably extended the list of zero-rated goods, particularly with respect to transportation equipment, agricultural machinery, equipment, and inputs, thereby making the refund process a headache for tax authorities.

To compensate for the regressivity of the tax, differential rates were established from the beginning, in addition to an exemption on foodstuffs. The rates were 3 percent (basic), 5 percent, 8 percent, and 10 percent. Later in 1968 the 5 percent rate was eliminated, and the 10 percent increased to 15 percent. In 1971 rates were raised to 4 percent (basic), 10 percent, 15 percent, and 25 percent. Table 16-1 shows the percentage of total collections from each rate in 1965–68.

The most complete studies on the incidence of taxa-

Table 16-1. *Percentage of Total Revenue Collected from Various Sales Tax Rates, 1965–68*

Rate	*1965*	*1966*	*1967*	*1968*[a]
15[b]	n.a.	11.6	15.9	13.3
10	13.7	16.4	15.3[c]	16.6[c]
8	3.2	8.1	5.9	5.9
5[d]	20.0	7.5	n.a.	n.a.
3	61.8	56.5	63.3	66.2
Total	100.0	100.0	100.0	100.0

n.a. Not applicable.
Note: Figures do not add to exactly 100 because of rounding.
a. January through May only.
b. Created in June 1966.
c. Cigarettes only.
d. Abolished in June 1966.
Source: Musgrave and Gillis 1971, p. 596.

tion in Colombia concluded at the time that, although exemptions granted a slight degree of progressivity in the first four deciles of income distribution, the tax was extremely regressive from then on, despite differential rates (Levin 1968; McLure 1971). In 1974 the basic rate was increased to 15 percent, and a 6 percent preferential rate was set for "wage goods" (clothing, footwear, and major inputs used for building popular housing) and capital goods, plus a 35 percent rate on luxury consumer goods.[2] Moreover, this reform eliminated certain protectionist elements in the tax, which imposed higher levies on selected imports than those applying to domestically produced counterparts.

Repair services and "manufacturing on order" were included in the tax base from the beginning. In 1974, for reasons of incidence, parking lots, insurance, international air fares, photographic developing and photocopies, telegrams and telephone services, and social club fees were also included (table 16-2).

Thus, the 1974 reform, which completely reorganized the tax, was characterized by:

- Use of the value added technique.
- Taxation principally of manufactured goods (excluding unprocessed primary goods, such as agricultural, mining, fishing, and forestry products) and the progressive inclusion of some services.
- No taxation of value added in the distribution stages, except in the following cases: (a) if the importer were to resell his products; (b) if the producer-manufacturer were involved in wholesale or retail activities; (c) if an economic relationship were to exist between the distributor and the producer-manufacturer; (d) if the distributor were to sell goods "manufactured on order."
- No credit for taxes paid on capital goods.
- A differential rate structure to temper the regressivity of such an indirect tax, although in some cases the classification of goods according to different rates was difficult to justify or clearly inappropriate (for example, the exemption established in 1974 applying to imported capital goods destined for "basic industries."[3])
- A refund system, beginning in 1974, for taxes paid by manufacturers of zero-rated goods, by exporters of manufactured goods, and by those companies obtaining balances in their favor because their inputs were taxed at higher rates than their products. This system was too broad, mainly because of the excessively long list of zero-rated items.
- Taxation of services that have a direct bearing on manufacturing (for example, repair services); those that were administratively convenient to control; and those for which taxation would have a redistributive impact.

The next most important tax reform was enacted in

Table 16-2. *Services Taxed and Rate of Taxation, 1974 and 1983*
(percent)

Service	*1974*	*1983*
Fees and services pertaining to social and sports clubs	35	10
Parking lots	15	10
International telegrams, telex, and telephone services	15	10
Insurance premiums, excluding life insurance	15	10
Developing and photographic copies	15	10
International air fares	6	10
Repair and maintenance	6	10
National telegrams, telex, and telephone services	6	10
Rental of goods and chattels, including financial leasing	n.a.	10
Computation and data processing, including software	n.a.	10
Hotels (three star or more)	n.a.	10
Manufacture on order[a]	n.a.	n.a.

n.a. Not applicable.
a. According to rate of goods.

1983 (Decree 3541 of December). The principal changes were the following:

- Expansion of tax coverage to include distribution activities even at the retail level; establishment of a "simplified system" for small retailers with sales and net wealth below set amounts that were adjusted periodically for inflation. In the 1983 reform these small retailers were subject to a fixed rate, calculated on the basis of their previous year's sales, which was cancelled entirely by the deduction for taxes charged to the retailer, as well as a 10 percent deduction for nontaxable items, provided that such acquisitions are substantiated by proper invoices.
- Relative unification of rates, particularly with respect to combining items previously taxed at 6 percent and 15 percent into the 10 percent bracket. At the same time, certain construction materials previously in the 6 percent bracket were zero-rated (cement, concrete, brick, asbestos, and terra cotta tile). Yet, rates of 20 percent and 35 percent, applied exclusively at the manufacturing level, were maintained for some luxury goods.
- Inclusion of certain new services in the tax base (maintenance, hotels, rental of goods and fixtures, financial leasing, and computing services) and restructuring of the tax on social clubs.
- Procedural reforms intended to unify the administration of this tax with that of the income tax; to facilitate private and official tax statements; to eliminate bimonthly returns (except for exporters and producers of zero-rated goods) in favor of one annual return, although bimonthly payments were maintained; and to give the tax administration new presumptive and investigative authority to facilitate tax control and auditing.

In 1984 most exemptions for agricultural machinery, transportation equipment, and certain other goods, including soft drinks, were eliminated (Law 50 of December). However, in this last case, the new basic 10 percent rate was applied solely at the manufacturing level.

Administration and Structure

Before the 1974 Tax Reform

Before 1974 the fundamental problem lay in the mechanism created to exempt goods subject to preferential treatment. Under this system, inputs for exempt goods were freed from tax through a simple process whereby the purchaser informed the seller that the goods in question were to be used in the manufacture of exempt items. Penalty for the misuse of such goods merely involved payment of the tax originally omitted. As expected, this system led to broad evasion and made it extremely difficult for tax authorities to control the situation.

Until 1971, there was no tax on direct imports but only on their sale. This arrangement facilitated evasion: for example, import licenses could be made out in the name of the ultimate consumer of the product.

Administration and control were difficult when it came to separating taxes for which credit could be taken (for example, on inputs "incorporated" into the product, at the beginning, or "totally consumed in the process of production," afterward) from those for which credit could not be taken.

Between 1974 and 1983

Differential rates, zero-rated goods, and refunds. The difference in rates led to a major administrative problem as most inputs were classified at 15 percent and certain finished goods at 6 percent. This difference, coupled with a lengthy list of zero-rated articles (approximately 252 different items in the customs classification), resulted in the tax administration's owing refunds to a large number of taxpayers. These had to be made within a thirty-day period through a complicated administrative procedure. The delay in processing refunds (a year on the average) led companies to calculate the difference as a cost, undoubtedly affecting the price of basic consumption goods subject to the 6 percent rate. The same thing happened with zero-rated goods, so that it became impossible to avoid the incidence of taxation on inputs in the cost of these products.

Processed and unprocessed goods. For tangible goods, the difference between processed and unprocessed items led to a situation where taxes on inputs were refunded for processed goods but became part of the cost of unprocessed goods. This resulted in discrimination between different food items within a single line. For example, unaged cheese was subject to taxation, while a refund could be obtained for taxes paid on inputs for aged cheese. The legislation abounded with examples of this type, to the point that packaging became the dividing line for most foodstuffs. Hermetically packaged foods received preferential treatment, whereas other food items did not.

Even more serious was the fact that unprocessed export goods (flowers, bananas, cotton, and so forth) were not eligible for a refund corresponding to taxes paid on production inputs or packaging. This resulted in the practice of registering the export of "packaging" separately from the product, thereby creating problems of administration and control.

Vertical integration. A tax at the manufacturing level and on imports presented two major problems

of control. The first was the difficulty of taxing the sale of manufacturers on order, so as to limit evasion on artisan production. The complicated legal system in Colombia made it virtually impossible to verify instances in which a distributor disposed of goods resulting from so-called manufacture on order.

The second problem was the tendency to create fictitious distributors in order to reduce the tax base. In Colombia, this trend began in 1965 when so-called economic relationships were included in the tax. This concept dealt with cases involving economic and administrative control exercised by companies through the possession of at least 50 percent of the distributor's capital, or financial or administrative control exercised through the taxpayer, through the taxpayer's relatives, or through other economic ties. Taxpayers constantly violated the concept of economic relationships by breaking up ownership percentages so as to avoid inclusion in the tax base. This tended to create distributorships, thereby distorting the vertical integration process and causing a major administrative and control problem for the tax administration.

Imports. Perhaps the greatest remaining problems with imported goods can be attributed to the exemption on capital goods destined for basic industries and, administratively, to the system of semester licensing for imports. The administration and control of this provision proved to be extremely complicated.

After the 1983 Reform

The 1983 tax reform increased the number of registered responsible parties from 25,000 to 146,000; 58.5 percent (85,458) of which were listed under the simplified system. Obviously, such an increase in the number of responsible parties meant greater problems in administering the tax. Including small retailers greatly enlarged the tasks of enrolling and registering responsibles, placing them properly in the simplified or normal systems, and monitoring the reporting of sales. In fact, underreporting of sales has proved to be so severe as to cast serious doubts about the presumed superiority of a VAT that extends to the retail level in a country such as Colombia, on grounds of not only administrative costs but also neutrality of incidence *in practice*—a subject to which we now turn our attention.

The VAT Structure before and after the 1983–84 Tax Reforms

This analysis compares the advantages and disadvantages of the current structure with that prevailing until 1983. It also refers to alternate schemes that could have been adopted in 1983, such as extending the tax to the wholesale level or employing a mixed wholesaler–large retailer scheme. Determining the appropriate level to which a value added tax should be extended requires considering both theoretical and practical issues relating to the economic neutrality, rate structure, and redistributive and other effects of the tax. Practical issues refer basically to the structure of the trade sector in the country and the nation's capacity for tax administration and control.

Neutrality and Control

Theoretical issues. In theoretical discussions, particular importance is given to the search for neutrality between domestic and imported products and between diverse manufacturers in a given branch.

As for neutrality between domestic and imported products, a value added tax that is limited to industrial goods and imports normally favors imports. The bias arises because a given number of manufacturers in each sector are involved in marketing activities, at least of a wholesale nature, and incur expenses for advertising and so forth, which are not included in the price of imports. A sample from June 1984 indicated that Colombian industry sells about 20 percent of its production directly to retailers and 13 percent directly to the public (table 16-3). For some sectors, these direct sales amount to a substantial share of their total sales (67 percent for clothing, 64 percent for printing, publishing, and related industries, 49 percent for leather and leather products and footwear, 43 percent for some chemical products, and 41 percent for nonelectrical machinery).

As for neutrality among domestic manufacturers within sectors, a value added tax at the manufacturing level discriminates against producers vertically integrated toward the distribution stage—that is, against those who sell directly to retailers or the public. As shown in table 16-3, there is considerable difference among sectors regarding the percentage of industrial sales made through wholesalers and that made directly to retailers and the public. Such a VAT also proves to be discriminatory if the manufacturer pays for transportation. Naturally, in these situations the manufacturer can create a separate company for transportation and distribution. But those distributors with economic ties to the manufacturer are often taxed as well—further aggravating the discrimination among manufacturers—because tax authorities find it difficult to establish provisions regarding the transfer price between the distributor and the manufacturer.

Extension to the wholesale level would have solved both these problems to a great degree, since manufacturers rarely sell an important part of their production to the ultimate consumer (13 percent of sales, as noted previously). However, many large retailers (chain stores, supermarkets, department stores, and family

Table 16-3. *Distribution of Sales from Manufacturing Firms, by Type of Purchaser*
(percent)

Sector[a]	Total no. of firms	To retailers	To public	To retailers and public combined	To government	To wholesalers
312	25	24.16	15.72	39.88	1.20	58.92
313	3	0	29.33	29.33	0	70.67
321	18	15.06	0.11	15.17	1.17	83.67
322	12	52.92	14.58	67.50	0	32.50
324	5	45.00	4.00	49.00	0	51.00
332	13	10.85	20.15	31.00	5.92	63.08
341	6	5.00	0	5.00	0	95.00
342	9	19.44	34.44	53.89	7.22	38.89
351	5	15.20	6.00	21.20	2.80	76.00
352	18	37.81	5.50	43.31	4.47	52.22
353	3	5.67	5.00	10.67	0	89.33
355	5	21.00	0	21.00	0	79.00
362	1	10.00	0	10.00	0	90.00
369	8	21.25	28.75	50.00	12.88	37.13
372	3	10.00	0	10.00	1.67	88.33
381	22	12.41	14.73	27.14	2.50	70.36
382	10	11.20	30.00	41.20	9.00	49.80
383	15	13.87	7.13	21.00	9.07	69.93
384	7	0	34.57	34.57	0	65.43
390	3	58.00	3.33	61.33	3.33	35.33
356	11	15.55	6.00	21.55	3.18	75.27

a. Designations refer to CIUU subsector codes.
Source: Special Survey, FEDESARROLLO, 1984.

subsidy stores[4]) are vertically integrated. In other words, they conduct wholesale transactions. Consequently, a tax extending to the wholesale level favors this type of large retailer and discriminates against small and medium-size businesses, which normally must employ the service of wholesale distributors and therefore purchase at higher prices. According to figures made available to the authors by FENNALCO, large retailers are responsible for 43 percent of all sales to the public. This is equivalent to 26 percent of all commercial sales, including those of wholesalers which represent nearly 40 percent of the total (FENNALCO 1983). Alternatively, it would be necessary to tax these retailers in instances regarding their involvement in wholesale activities, a situation creating considerable difficulty in administration and control.

The mixed wholesaler–large retailer scheme would discriminate against the large retailer as opposed to the small retail business. It is commonly argued that since net margins for some items are very narrow in the retail trade, certain large retailers could find it difficult to bear up under this type of discrimination. However, this argument does not take into account the existence of considerable economies of scale in the retail business.

In theory, a tax extended to the retail level without exemptions for small businesses would be the only scheme free from this sort of discrimination. Yet, in practice, it does present problems of neutrality because of difficulties with control. The real incidence of the VAT retail tax in Colombia is similar to that of the wholesaler–large retailer scheme, and it is much more costly to administer, both for the government and for the taxpayers, as will be seen shortly.

Practical issues. A value added tax at the manufacturing level and on imports poses two problems of administration and control. The first deals with artisan production. *In practice*, the tax favors this type of manufacturing (through evasion) unless certain provisions are taken to avoid discrimination of this sort. Some countries consider the bias toward artisan production an advantage because of its implications for employment and the distribution of income among producers. Yet, in other instances, this control problem favors certain artisans (for example, jewelers) whose products are used primarily by high-income consumers.

When it is considered necessary to curb this discrimination, governments generally resort to taxing distributors who order or contract artisans to manufacture the products they need, under the assumption that a major portion of all artisan production is of this type. However, when such measures are adopted, as in the case of Colombia, they discriminate in the opposite sense by taxing even wholesale or retail distribution margins, depending on who does the contracting. In

order to avoid this phenomenon, some countries charge a low rate for "manufacturing on order." Again, this poses a number of problems with control and tax evasion.

The second problem concerns "exclusive distributors" and other forms of distribution that do not fall within the normal definition of an "economic relationship," or at least in so restrictive a sense as that afforded to this term under Colombian law. Most countries with this kind of tax have been obliged to include exclusive distributors in the tax base, in some manner or another. Here again, this opens the way for possible discrimination in the opposite direction.

In Colombia, evidence indicated that this was the principal problem with the structure existing until the reforms of April 1984. Had that level of imposition been maintained, it would have been necessary to considerably broaden the concept of economic relationship to include exclusive distributors. One possibility would have been to tax any distributor with a certain percentage of sales (for example, 30 percent) involving products from the same firm or from firms maintaining an economic relationship with one another. However, there still would be some problem with control and discrimination.

Extending the tax to the wholesale level might eliminate the problem of exclusive distributors, since these are usually wholesalers. Yet, it might be necessary to incorporate some important exceptions, such as automotive distributors. At the same time, this extension would do away with much of the problem concerning artisan manufacturers, although there would still be difficulties when these producers sell directly to retailers, which are generally large. This would necessitate maintaining the concept of manufacture on order for this type of producer, with the problems mentioned earlier.

Extending the tax to the wholesale level would pose an additional control problem in cases where the distributor operates as both a wholesaler and retailer. The easiest solution would be to classify as wholesalers all those whose sales to other merchants (or to industrial firms) constitute more than a given percentage (say, 30 or 50 percent) of their total sales. Yet, in this case, the tax would discriminate against wholesalers also operating as retailers. This could lead to the establishment of separate firms for retail distribution and, once again, to the problems associated with the concept of economic relationship. The other alternative is to tax wholesalers only in accordance with the proportion of sales to other businesses. However, this would make tax control and administration extremely complicated. (Note that the mixed wholesaler–large retailer scheme would eliminate most of these control problems.)

In principle, extending the tax to the retail level resolves all of the control problems mentioned previously. Nonetheless, it poses a different problem of administration and control, which is likely to be more serious than any of the foregoing. This concerns the tremendous difficulties in control and the enormous administrative costs involved in extending the tax to include an extremely large number of small retailers. This problem is not so serious in European countries, where small retailers are responsible for a relatively minor percentage of retail sales, where the standard of ethics supports the fulfillment of tax liabilities, and where administrative capacity is adequate to handle the situation. Naturally, such is not the case in Latin America and the Third World in general. As mentioned earlier, large retail chains in Colombia account for only 43 percent of all sales to the public. Moreover, there is considerable variation with regard to size, as demonstrated in table 16-4 containing figures for 1970. Similar data on wholesalers are found in table 16-5. It should be noted that these represent less than 4 percent of all retail establishments.

Table 16-4. *Concentration in Retail Trade, 1970*

Size of firm	*Number of firms*	*Total sales (millions of pesos)*	*Total persons employed*	*Sales of firm (pesos)*	*Number of firms*[a]
Fewer than 5 persons	143,039	23,993	241,109	Up to $100,000	79
5 to 9	2,303	4,290	15,719	From $100,000 to $350,000	276
10 to 19	1,410	4,465	18,644	From $350,000 to $500,000	312
20 to 49	621	4,859	18,102	From $500,000 to $1 million	843
50 to 74	110	1,751	6,731	From $1 million to $3 million	2,040
75 to 99	47	700	4,139	From $3 million to $5 million	626
100 or more persons	97	3,677	22,624	From $5 million to $10 million	475
Subtotal of firms with 5 and more persons	5,006	19,742	87,366	From $10 million to $25 million	240
				From $25 million to $50 million	75
				Over $50 million	40
Total	147,627	43,735	327,068	Total	5,006

a. Excludes firms with fewer than 5 persons employed

Source: Tabulations from the Colombian 1970 Census on Trade.

Table 16-5. *Concentration in Wholesale Trade, 1970*

Size of firm	*Number of firms*	*Total sales (millions of pesos)*[a]	*Total persons employed*[b]	*Destination of sales*	*Value (millions of pesos)*
Less than 5 persons	4,205	5,898	9,804	Export	442.9
5 to 9	610	2,984	4,309	Government	813.6
10 to 19	637	5,825	8,656	Consumers	1,775.8
20 to 49	358	5,266	10,647	Industry	3,868.9
50 to 74	58	2,261	3,521	Others	13,865.1
75 to 99	17	576	1,453	Total	20,766.2
100 or more persons	42	3,854	9,384		
Subtotal of firms with 5 and more persons	1,786	20,766	38,004		
Total	5,927	26,664	47,590		

a. Amount of gross income received by the establishments for the sale of merchandise that they owned and that they acquired for the purpose of sale.

b. Total number of persons performing tasks, paid or unpaid, for the establishments.

Source: Tabulations from the 1970 Colombian Census on Trade.

At that time, there were 147,627 retailers. Today, they number no fewer than 300,000,[5] although not all would be subject to the tax. Table 16-6 compares the number of taxpayers registered in June 1984 (three months after the tax was extended to the retail level) with prior DIN estimates based on income tax returns filed for the 1981 tax year. The DIN estimates thus do not take into account small, nonfiling businesses that generally are not listed on the sales registry, as the following figures indicate. The number of registered taxpayers increased from 27,000 to 146,000—a proportion greater than that expected under the simplified systems.

For this reason, most developing countries turn to a system of exemption for small businesses. From a control point of view, adopting a simplified system is not a satisfactory alternative to such an exemption. When the simplified system continues to be based on the control of sales (even though sales of the previous year) and when it is unduly limited, as in the case of Colombia, so as to allow only natural persons complying with certain conditions, little progress is made toward reducing administrative costs and problems of control. In fact, there remains a strong incentive to underreport sales in order to qualify for the simplified system. This appears to have been the case, if we compare registration with estimates based on sales reported for income tax purposes, which in themselves were subject to considerable evasion.

Furthermore, the problems of administration and control go beyond the scope of a single tax. As discussed later, the government opted for this simplified system at the same time that it integrated administration of the VAT and the income tax and did much to simplify the latter.

Because of the relatively large number of small business establishments, the high proportion of total sales channeled through them, and the limited resources available to the tax administration, the practical disadvantages (principally, the lack of control) of extending the VAT to the retail level outweigh the theoretical advantages (principally, the gain in neutrality) mentioned earlier. If it is assumed that in practice the actual tax on these small establishments is almost nil,

Table 16-6. *Number of Taxpayers before and after Extension of the VAT to the Retail Level*

	Regular system				
	Companies	*Natural persons*	*Subtotal*	*Simplified system (natural persons)*	*Total*
Registered before the reform[a]	18,000	9,000	27,000	n.a.	27,000
New registrations [a]	12,000	28,000	40,000	63,000	103,000
Total[a]	30,000	37,000	67,000	63,000	130,000
Registered as of June 1984	33,174	13,014	46,188	78,883	125,071
Registered as of December 1985	—	—	60,542	85,458	146,000

n.a. Not applicable.

— Not available.

a. DIN estimate based on the list of taxpayers filing an income tax return for the 1981 tax year and therefore does not include nonfiling small businesses that generally were not listed on the sales registry.

Table 16-7. *Average Gross Margin on Sales Price for Manufactured Products*

Sector	Total number of firms	Wholesalers		Retailers		Doubtful classifications	
		Gross margin (percent)	No. of firms	Gross margin (percent)	No. of firms	Gross margin (percent)	No. of firms
Food and beverages	4	19.31	3	17.23	1	n.a.	n.a.
Textiles	10	25.69	8	29.00	2	n.a.	n.a.
Clothing	4	n.a.	n.a.	28.90	4	n.a.	n.a.
Footwear and leather goods	7	17.82	4	61.00	2	1.3	1
Furniture	6	n.a.	n.a.	56.56	5	61.0	1
Electrical appliances	2	39.33	1	57.00	1	n.a.	n.a.
Book and stationery stores	5	15.82	1	24.62	3	40.0	1
Cosmetics	1	25.00	1	n.a.	n.a.	n.a.	n.a.
Construction materials	5	16.06	2	25.67	3	n.a.	n.a.
Basic metals	4	29.25	4	n.a.	n.a.	n.a.	n.a.
Hardware stores	3	22.50	2	55.00	1	n.a.	n.a.
Electrical and electronic equipment	11	27.86	8	30.00	3	n.a.	n.a.
Nonelectrical machinery	10	27.00	6	31.25	4	n.a.	n.a.
Vehicles	5	30.00	1	15.22	4	n.a.	n.a.
Parts and replacement parts for vehicles	13	45.97	3	30.18	10	n.a.	n.a.
Others	6	24.06	5	20.00	1	n.a.	n.a.
Total	96	26.17	49	33.10	44	34.1	3

n.a. Not applicable.
Source: Special Survey, FEDESARROLLO, 1984.

then the country could incur enormous administrative costs, affecting these businesses as well as the tax administration, without much benefit. The actual incidence would be similar or identical to that of the mixed wholesaler–large retailer scheme, since in fact these would be the only distributors effectively subject to the tax.

In Colombia, these problems were aggravated by the existence of another type of sales tax (a municipal tax on industry and commerce) and a presumed minimum income tax on sales (effective since July 1983). This situation provides retailers with a strong incentive to undervalue total sales and consequently purchases. Such incentives for evasion lead to a practical incidence of taxation that is far more imperfect than would have prevailed if the mixed scheme were adopted or if the tax were extended only to the wholesale level.

Conclusions. From the viewpoint of *effective* neutrality, administrative cost of the tax, and facility for control, the options for tax reform in a country such as Colombia perhaps should be limited to the extension of the VAT at the wholesale level or the adoption of a mixed wholesaler–large retailer scheme. In the event of a general extension to the retail level, there should be an exemption for small businesses. These statements, however, do not consider the advantages introduced by the integration of the VAT and income tax administration discussed subsequently.

Rates and Incidence

Theoretically, it is convenient to maintain differential rates for distributive purposes. Distributive problems are far less serious in countries where there is a better distribution of income and where low-income groups have managed to achieve a relatively acceptable standard of living, as in the case of European countries, the United States, and Canada. For this reason, the relative unification of rates in these countries for value added taxes or for one stage-sales taxes has not become an important issue. In a situation like that of Colombia, in contrast, the regressive effects of a universal single-rate indirect tax would be socially unacceptable.[6] Consequently, and in view of administrative considerations, an exception was made in Colombia for food and, until the most recent reform, a 6 percent preferential rate was set for clothing, footwear, and similar products. The same reason justified taxing some goods at a higher rate and including certain services in the tax base.

When the tax is extended to the commercial retail level, it becomes impossible to maintain a considerable difference in rates because of problems of administration and control. A retail sales tax always leads to a relative unification in rates, which is why the Colombian government unified rates from 6 percent to 10 percent when the decision was made to extend the VAT to retail trade.

The consequences of this decision were twofold.

Table 16-8. *Sales Tax Collections, 1976–85*

Year	DIN		Customs		Total	
	Millions of pesos	*Real increase (percent)*	*Millions of pesos*	*Real increase (percent)*	*Millions of pesos*	*Real increase (percent)*
1976	6,497	n.a.	3,564	n.a.	10,061	n.a.
1977	8,344	0	5,107	11.6	13,451	4.1
1978	11,151	12.5	7,506	23.8	18,657	16.8
1979	15,556	8.2	9,342	−3.4	24,898	3.6
1980	18,758	−4.2	14,806	25.9	33,565	7.1
1981	25,713	8.5	17,160	−8.2	42,872	1.1
1982	33,536	5.1	21,282	0	54,817	3.1
1983	41,997	7.4	21,357	−14.0	63,354	−0.9
1984	62,269	25.3	25,827	2.2	88,096	17.6
1985	95,220	24.0	40,761	28.8	135,700	25.8

n.a. Not applicable.
Source: DIN data.

First, the effect of the decision to extend the tax to the retail level has been extremely regressive. By raising the preferential rate from 6 percent to 10 percent and taxing distribution margins for these goods, low-income groups have borne the burden of the increased collections. In fact, table 16-8 shows that almost all of the increase in tax collections came from goods formerly taxed at 6 percent. Thirty-six percent of this figure corresponds to capital goods.

Second, in the case of Colombia, this decision had negative consequences regarding the taxation of capital goods and discrimination maintained in favor of imported capital goods. These consequences will be discussed below.

The foregoing discussion supports the previous conclusion that perhaps extending the base to the retail level was not an appropriate measure. It is evident, in turn, that the system of differential rates could have been maintained had the tax been extended to just the wholesale level, although this would not be the case were a mixed wholesaler–large retailer scheme adopted.

Taxing Capital Goods

The consumption-type VAT (with full crediting of taxes paid on capital goods) is defended on the basis that it avoids double taxation of investments. Otherwise, investments would be taxed at the moment they are made, as well as in the future upon production of new goods for consumption. This criticism is often used against the income tax as well and has led some countries to propose substituting a consumption-type VAT for a progressive tax on expenditures. In more practical terms, most advocates of the consumption-type VAT claim that it encourages investment, which is thought to have a very favorable effect on the rate of economic growth. This is one of the great unanswered questions in the international debate on fiscal policy (see, for example, Bosworth 1984).

Furthermore, when the VAT is not applied to all goods and services (as is usually the case in developing countries, at least with respect to agriculture) discrimination is established in the treatment of capital goods for industry, which may claim credit for such taxes, and for exempted sectors, which may not. The only way to remove this bias would be to zero-rate all capital goods.

The other viable alternative, that of not allowing credit for taxes paid on the purchase of capital goods, would be equivalent to taxing consumption and gross investment equally.[7] This position is defended with the argument that in many countries, such as Colombia, foreign exchange, tariff, and credit policies already favor capital-intensive activities. Therefore, establishing full credit for taxes paid on capital goods would aggravate this discriminatory situation and would be inimical to efficient resource allocation.

Nonetheless, with an immediate credit for taxes paid on capital goods, considerable refunds must be made to all taxpayers attempting to expand their enterprises, as well as to firms in the process of being established. Experience shows that even countries with a relatively developed tax administration, such as the Republic of Korea, have had tremendous administrative and control problems in handling this type of situation. In fact, most of the administrative effort with a value added tax in Korea is concentrated on refunds for taxes paid on capital goods.

To illustrate this problem, it should be noted that tax administration is based on the selection of cases for auditing which deviate considerably from the general trend in their own line of activity, or those temporarily showing a marked deviation from their previous tax behavior. These are appropriate criteria for levies

like the value added tax where, in principle, the ratio of value added to sales is relatively stable and is homogeneous for companies producing or distributing similar types of products. Giving tax credits for the purchase of capital goods abolishes this stability entirely, thereby preventing an easy selection for auditing purposes, unless credits for taxes paid on capital goods are accounted for separately. However, this makes tax accounting more complicated than in cases where tax credit on capital goods is not allowed. Moreover, in principle, this situation means that any responsible party may be eligible for a refund. Yet, for the sake of administration and control, the number for responsible parties eligible for refunds must be limited and clearly defined, as has been mentioned.

Most of these problems could be solved if capital goods were subject to a zero rate, as has been mentioned. If there are many domestic producers of such goods, however, this could again overburden the administration with refunds.

At any rate, the disadvantages to be cited in a tax such as the Colombian one are less serious when the rate is lower. For this reason, capital goods were kept at the 6 percent preferential rate. However, extension to the retail level necessitated raising this rate to 10 percent, in addition to taxing the distribution margin on these goods, which was among the highest (table 16-7). Moreover, the unfortunate 1974 exemption applying to major capital goods imports for basic industries was maintained. An increase in the rate for capital goods also aggravated discrimination, which had originated with this exemption, against the domestic production of capital goods. Once again, the drawbacks to an increase in tax on capital goods came from a unification of rates made necessary by the decision to extend the tax to the retail level.

Revenue Considerations

Using tables 16-3 and 16-7, it is possible to estimate the increase in collections to be obtained by moving from the manufacturing and import level to include all or a portion of the value added in the distribution stages.[8] Since 63 percent of all industrial product sales are made through wholesalers (table 16-3), at an average margin of 26 percent (table 16-7), the increase obtained by extending to the wholesale level would be around 16 percent. Including large retailers in the tax (responsible for 26 percent of all commercial sales) would result in an additional increase of 9 to 15 percent, given the average retail margin (33 percent) and alternately assuming that all purchases are made from wholesalers or directly from industry. In this way, the mixed wholesaler–large retailer scheme would represent an increase above the manufacturing and imports level ranging from 25 to 31 percent. Universal extension to the retail level would produce a 40 to 50 percent increase. Yet, as mentioned earlier, the increase, in practice, would be closer to that corresponding to the application of a mixed wholesaler–large retailer scheme.

In comparing these estimates with what actually happened, it should be noted that the reform has been in effect since April 1984 and that a special ruling allowed taxpayers to "discount theoretical taxes" paid on declared inventory. According to DIN estimates, this reduced collections by $6 billion pesos between July and November 1984. The sum of real increases (table 16-8) in the following two years (18.3 percent and 22.4 percent) came close to DIN estimates for the complete year (36.8 percent), even though they include the effects of the elimination of exemptions at the end of 1984.

A sample of tax returns for April to December 1984 shows that the portion of tax liquidated in the commercial sector was on the order of 10.2 percent, a percentage below the estimate in table 16-9 (from 15 percent to 18 percent). However, this figure is influenced by the inventory discount. If the discount is added back into 10.2 percent, the actual portion of tax liquidated comes closer to the figures in table 16-9.

The data in table 16-10, however, cast some doubt on calculations made for each rate level presented in table 16-9, even though both sets of data are based on a sample from Bogotá. Specifically, participation corresponding to the 35 percent rate seems exaggerated because tax returns for automotive assembly plants are centered in Bogotá. This fact does not significantly modify conclusions regarding incidence, as discussed previously. If anything, it reinforces them.

Alternatively, the various schemes could have produced the same amount of collections using different average rate levels. Therefore, in order to achieve collections similar to those expected as a result of government decisions or with a mixed wholesaler–large retailer scheme, rates at the manufacturing and import level would have had to have been increased from 25 to 31 percent. Likewise, so as to obtain the same result with a tax at the wholesale level, rates would have had to have been subjected to increases between 7.4 and 12.5 percent. Naturally, these increased rate levels would aggravate the inconveniences of each of these alternatives with regard to economic neutrality, as discussed earlier.

Services

One of the theoretical advantages attributed to extending the value added tax to the retail level is that it provides for including all services in the tax base since, for the most part, these are available directly to the public. Naturally, this consideration leaves aside the problem of control. In practice, the difficulty in-

Table 16-9. *Incidence of Increase in Collections by Rate Groups*
(millions of 1984 pesos)

Type of tax	*Manufacturing and imports*		*Commerce increase*	*Total increase*
	Actual collection[a]	*Increase*		
35 percent tax	21,741.8	n.a.	1,863.6	1,863.6
15 percent tax	22,642.5	−7,547.7	3,920.8	−3,626.7
6 percent tax	19,241.5	12,827.7	8,329.7	21,157.4[b]
Other[c]	8,150.0	n.a.	n.a.	n.a.
Total	72,100.5	5,280.2	14,114.1	19,367.3
DIN estimate	n.a.	8,775.0	17,785.0	26,560.0

n.a. Not applicable.
a. Assuming that the 1980 distribution remained the same.
b. Of these, capital goods are 100,193.4 ÷277,655.0 =36.1 percent.
c. Ecopetrol.

Table 16-10. *Sales Tax Returns, by Sector, 1984*

Sector	*Tax rate (percent)*		*Tax returns (millions of pesos)*			
	1984	*Previous*	*Industry*	*Wholesale*	*Retail*	*Total*
Textiles	10	6	5,585	228	180	5,993
Oil and coal derivates	14	10	5,695	82	n.a.	5,777
Plastics	10	15	1,052	n.a.	n.a.	1,052
Vehicles	35; 10[a]	—	4,976	128	842	5,946
Paper	10	15	1,583	47	42	1,672
Beverages and tobacco	35; 10	—	912	162	23	1,097
Mining	10	15	943	n.a.	n.a.	943
Soap	10	6; 15	1,018	n.a.	n.a.	1,018
Other chemical products	10	15	1,457	115	n.a.	1,572
Equipment and machinery	10	6	1,029	108	214	1,351
Transportation	10	6	—	—	—	696
Insurance	15	—	—	—	—	3,189
Other services (telegrams, telex, telephone)	—	—	—	—	—	1,182
Iron and steel; nickel smelting	10	6; 15	875	n.a.	n.a	875
Construction	exempt;10	6	78	215	86	379
Importers	—	—	—	912	—	912
Total						33,664

— Not available.
n.a. Not applicable.
a. Taxed at 35 percent at industry level and 10 percent at other levels.
b. Taxed at 35 and 10 percent at industry level and 10 percent at other levels.

volved in controlling establishments providing services to the public is even greater than that noted with respect to small businesses. For this reason, the Colombian government did not even consider including a general tax on services in the reforms of 1984.

What has happened in Colombia, as mentioned earlier, is that new services are gradually being included in the tax base according to a selective criterion. This is precisely what was done in the last tax reform by incorporating hotel services, as well as those for computation and leasing of goods and chattels (including financial leasing) into the tax base. These services, like most of those included previously, comply with criteria for administrative convenience, revenue importance, and progressive incidence.

Administration of Income and Value Added Taxes: A Joint Approach

As mentioned earlier, one of the changes introduced in 1983 was an integrated approach to administering income and value added taxes. Simultaneously, the tax administration proposed simplifying income tax administration, a move resulting in broad legal reforms enacted in 1984 and 1985. This largely explains the government's decision to adopt a simplified system, rather than exempting small businesses.

At the level of national tax legislation and concomitant with extension of the VAT to the retail level, the tax administration proposed the elimination of income tax filing for 1,200,000 wage earners. This was intended

to reorient the labor force available in the tax administration, within a medium period of time, and to concentrate control on the 5 percent of taxpayers responsible for 80 percent of collections. By simplifying the sphere of activity subject to administration, an effort was to be made to integrate the administration of income and value added taxes, which had been administered separately. This proposal became a reality in June 1985 upon congressional approval of Law 55 of the same year. The effects of this measure only began to be apparent in 1986.

The following are other important considerations:

1. The Colombian constitutional system requires that the law strictly define parameters for tax liability, which can only be modified by further laws. This legislative inflexibility can lead to unforeseeable consequences in systems being used in the country for the first time. Parameters for exclusion are evaded easily.

Experience with previous Colombian tax reforms has reinforced this position, particularly regarding the sales tax. In reality, precepts, such as those concerning "economic relationship," "manufacture on order," and so forth, were violated systematically, thus aggravating problems with control.

2. Income tax legislation had included a large number of taxpayers and exempted only nonprofit organizations and persons with income of less than $290,000 pesos or net wealth of $770,000 pesos in 1985. This legislation generated a tremendous group of tax evaders, as evidenced by the filing of 1.4 million so-called simplified returns (returns filed by those exempt from income tax to obtain tax certificates for certain economic transactions, such as the disposal of property or the establishment of a company). This volume of returns is equivalent to 70 percent of all taxpayers filing an income tax return. It is important to note that these simplified returns are not tied to any of the administration's control procedures.

3. At the time of the sales tax reform, there were 2,500,000 income tax payers, 5 percent of whom contributed 80 percent of collections. Of these, 1,500,000 paid 98 percent of their taxes through the system of withholding.

This was the situation when a new group of taxpayers was created by virtue of the decision to extend the sales tax to the retail level: 60,706 responsible under the regular system and 85,458 under the simplified system. The administrative alternative seemed obvious. Before risking an administrative proposal to extend the sales tax, the scope of which appeared minuscule compared with the income tax system, it was considered more appropriate to exclude an appreciable number of taxpayers from the obligation of filing an income tax return, specifically those whose tax liability would be met through withholding. Moreover, it was proposed that automatic mechanisms for collection be reinforced by extending withholding to include all payments made by large taxpaying legal entities. This scheme was adopted in June 1985, and currently all payments made by legal entities are subject to withholding. It is important to note that 94,000 legal entities (4 percent of all tax contributors) account for 55 percent of all income tax collections and 98 percent of those pertaining to sales tax.

With this new administrative strategy, 1.2 million wage earners were no longer required to file a tax return, and withholding was extended to cover all payments made by legal entities. In 1985 income tax collections rose by 9.5 percent in real terms. Five percent of this increase was derived from extended withholding.

4. It was hoped that there would be a comparative advantage to controlling the sales tax through a fixed quota system for small retailers, since the necessity of keeping invoices in order to cancel the quota would put control pressure on their suppliers. A sample involving 60 percent of the returns filed in 1985 by those responsible under the simplified system (in the April–December 1984 tax period) shows $35 billion pesos in reported income, $19 billion pesos in net wealth, and purchases of over $30 billion pesos. These taxpayers registered $94 million pesos in taxes. Therefore, one might conclude that, under the current scheme, these small retailers exercised control over more than $30 billion pesos in sales made by their suppliers. As noted previously, however, evasion of sales for other purposes (municipal and income taxes) may lead to evasion of purchases and the establishment of evasion chains.

5. Full extension of the sales tax chain is conducive to the integrated administration of income and sales taxes and allows for integral control of both taxes (cross-examining payments to third parties, payments subject to withholding, and so forth).

Preparation of the Tax Administration for the 1974 and 1983 Reforms

In principle the 1974 reform should have had two important administrative consequences: the establishment of a refund system and the increased relative importance of the VAT tax collection. Serious problems arising with the subsequent administration of the refund system originated in the excessive number and varied nature of recipients, as noted earlier. However, these were further aggravated by a lack of administrative preparation and by the fact that, initially, the same complex and costly procedure was applied as that used to return excess withholding tax.

An administrative reform was enacted at the end of 1975 to adapt the organization to the increased relative importance of the sales tax revenue. Yet, this reform

was not implemented in due time because of budgetary restrictions within the tax administration. These restrictions remained in force owing to a drastic cutback in all central government spending beginning in 1976.

In 1974 the government decreed a reform in procedures that would have facilitated the administration of all taxes. Yet, the Supreme Court ruled unconstitutional the issuing of these norms through special powers granted under a situation of economic emergency. Congress then modified the government's proposal to the point that its incidence was barely marginal.

In 1983, when the government decided to extend the sales tax to the retail level, the central problem facing the tax administration was the lack of a computerized system to handle the tax. Since the tax had been introduced in 1965, recordkeeping had been done with a manual system featuring cards for each taxpayer. Consequently, auditing had been at random, without any indicators to measure behavior in the different taxpaying sectors.

The following mechanisms were adopted before the system actually went into effect:

- On-line service for tax receipts, self-prepared statements and penalties, automatic cash tallies, collection statistics, write-offs of payments, and certificates of no unpaid taxes.
- Batch processing for bimonthly and yearly returns.
- Creation of sale tax current account using the national listing of taxpayers.
- Transcription of taxpayer registration forms, which were later validated with the income tax current account so as to ultimately create a national listing of those responsible for the tax.

As part of the 1983 reform, the government organized a small, highly select group of auditors responsible for planning and supervising control of the tax. These officials were ranked at the upper end of the salary scale for the tax administration, so as to ensure ethical fulfillment of their administrative duties. Furthermore, some 200 professionals chosen by Colombian universities were contracted for orientation and initial control of the tax. Massive control efforts focused primarily on commerce and featured a preventive auditing approach.

The authority for these efforts was granted under the new procedural law. In the initial stage, efforts were concentrated on 7,000 commercial establishments and produced increases of more than 50 percent for the taxpayers visited, compared with those not subject to auditing. No penalties were applied during this audit, nor was there any official determination as to unreported taxes. Instead, the taxpayer was given orientation, omissions and errors were detected, and recommendations were formulated for possible taxes to be charged the taxpayer in subsequent periods, using the economic indicators observed. About 20 percent of those audited received subsequent control visits to verify whether or not recommendations had been adopted. The results were as follows:

- Fifty percent of those audited initially accepted all recommendations and increased their taxes according to percentages suggested by the tax administration.
- Thirty percent accepted a portion of the recommendations.
- Twenty percent failed to adopt recommendations made by the tax administration and were subject to a punitive audit involving official determination of their tax, the application of penalties, and appeals to the tax administration and the courts.

In addition, the tax administration sent 20,500 notices to commercial businesses (14.6 percent of those registered) to request that they fulfill their tax obligation. Twenty percent responded favorably to this petition.

A punitive auditing program was started early in 1985 for large contributors to the tax, both manufacturers and distributors. This was intended to verify the accuracy of bimonthly self-prepared statements filed during 1984. Measuring the results of this program depends on the outcome of appeals to the administration.

Appendix. Other Unresolved Administrative Problems

The information system. There has been considerable progress with respect to computer equipment. In 1985 the central computer memory bank was 1,500 times larger than it had been in 1965, and nearly 10 times larger than it had been in 1975. In 1965 the tax administration had no teleprocessing screens. There were 35 in 1975 and 1,000 in 1985. Currently, the administration has peripheral computers in three regional offices, with a total memory capacity superior to that of all central equipment in 1975. However, the tax administration has failed to increase its effectiveness in controlling taxpayers at the same rate it has expanded its computerized systems.

The information system is still plagued by the following basic problems:

- *Inflexibility in the current account.* No corrections can be entered in the taxpayer's current account, thereby making it impossible to change the status of taxpayers who moved from the regular to the simplified system or vice versa or to cancel or modify self-prepared statements for the payment of taxes.
- *Lack of control in the current account.* There is

no current account control allowing for verification of voluntary fulfillment of the taxpayer's obligation (accuracy of returns and payments, coherence of data included in self-prepared bimonthly statements as compared with that appearing on annual returns). It is, therefore, impossible to obtain economic indicators from the information available in self-prepared bimonthly statements.

- *Lack of credibility in the information systems.* The foregoing factors have generated a lack of confidence in the information systems, both in and outside the tax administration.

Payment accounts. Accounts are kept manually, rather than as a by-product of data processing on all returns and payments.

The auditing systems. The auditing systems have the following shortcomings:

- The problems noted with respect to current accounts play a role in the slow development of auditing processes.
- Response time in the control process is so slow that administrative efforts to determine taxes resulting from visits made at the end of 1984 had only begun to be generated by late 1985.
- There is no cross-examination with income tax data or withholding payments, much less with municipal levies on industry and commerce which generally tax activities similar to those subject to sales tax. These factors contribute to widely dispersed auditing efforts. There are cases in which taxpayers have received a series of overlapping visits because of the inefficient coordination of control activities. An individual taxpayer may be visited simultaneously concerning income, sales, and withholding taxes.
- There is a lack of continuity in programs and insufficient planning. This is mainly due to inappropriate and unreliable information that results from the inefficient use of computer systems.
- Control efforts are limited and poorly paid. There are approximately 280 technical and auditing officials hired to control 146,000 taxpayers. Their average wage is $57,000 pesos a month.
- There is no specialized handling of large-scale taxpayers, which is absolutely necessary considering that 1 percent of the taxpayers contribute 90 percent of collections.

Systems for appeal and penalties. The 1983 reform placed special emphasis on the system of procedures so as to simplify tax disputes and make the application of penalties more effective. Traditional Colombian procedure implies an appeal before any official determination on the tax. This is followed by a subsequent appeal through administrative and legal channels. Generally, this last appeal can take from five to ten years; in the meantime penalties cannot be applied.

Therefore, the new provisions are intended to simplify the stages of subsequent appeal, in some cases imposing fines to be debated within a period of time established by law and where failure to comply with payment could result in arrest (tax evasion is not a felony in Colombia). Yet, despite these advances, the system for tax disputes continues to suffer from the following problems:

- Elements of new and old procedures often coexist, and there is no clear dividing line between the two.
- Excessive complexities and red tape favor tax evasion.
- Officials responsible for applying the rules often have a formalist attitude. This is a product of tradition that is difficult to change and prevents them from venturing to use the new mechanism.

Notes

1. In June 1966 there had been an attempt to solve this problem through regulatory channels, but the State Council nullified the ruling.
2. Rough estimates by the authors show that these changes somewhat improved the incidence of taxation.
3. In addition, a ruling was also established exempting imported goods through a system of semester licensing. This was revised in 1983.
4. These stores are subsidized through special taxes paid by the labor force.
5. FENNALCO places the figure at over 500,000.
6. It should be noted that the regressivity of a value added tax on goods may be due not only to the fact that low-income groups spend the major part of their income, but also to the fact that high-income groups spend more abroad and on nontaxed services.
7. A pure income-type VAT is not considered here, because it is administratively inferior to the alternatives.
8. The range of margins obtained in this survey is similar in magnitude to that obtained in national accounts and the 1970 business census, even though some sector amounts differ considerably.

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Computerization and the VAT in Indonesia

Hamonangan Hutabarat and Malcolm Lane

This chapter discusses an approach to the computerization of tax administration that goes beyond application to a value added tax alone. It is based on the authors' experiences with preparations in Indonesia for an important income tax reform and the introduction of a value added tax. The effective use of computers in support of tax administration can contribute to the success of such initiatives.

Computerization within Indonesia's Department of Finance affected taxes, customs, and the Treasury. All of the department's needs, not just tax applications, were considered. The Department of Finance already had a computer system, the Univac 1106, but it was six years old in 1982, when planning for computerization of tax applications began, and it was not regarded as part of future computerization for tax administration. No tax applications had been computerized previously, although some statistical data had been gathered.

It was assumed that computerization would only be valuable for tax administrators if it made their job easier and provided more timely and accurate data than manual processing. But when computerization is new, tax administrators are often skeptical about it and certainly do not know what a computer can do for them or what they should ask of it. Unless the right questions are asked, computerization of tax applications is sure to fall short of requirements.

Preparing for Computerization

Computerization of the value added tax was to take place along with the computerization of other taxes. Particular taxes could not be computerized in a vacuum; a coordinated effort under the Tax Directorate was needed. Since all taxes were processed manually, it was going to be difficult to plan and coordinate computerization so that the system would be ready when it was needed for the income tax reform and the new value added tax.

A primary issue was the development of a unique identification number for corporations and individuals that could be used for all taxes. The number that evolved out of years of effort beginning in 1982—the NPWP–is a nine-digit number that includes a check digit and a district code. The main reason it took so long to agree on a number system was that the cash registers used by the Treasury accepted only seven-digit numbers. When the Treasury decided to move to new cash registers that could handle seventeen digits, the numbering system was finally agreed on and put into practice.

The assigned NPWP number is used for all taxes and payments in Indonesia, including income tax, value added tax, customs, and payments to the Treasury. It will eventually allow movement of data to the central government's mainframe computer, where master records for all taxpayers will be maintained.

One of the first computerization projects was to construct a system that could assign NPWPs in a controlled manner. The system that was developed not only controls the numbers but also provides a means of printing NPWP identification cards and issuing them to taxpayers.

A perennial problem is the possibility that more than one number will be assigned to the same taxpayer. Although computer checks can be run, taxpayers who

for some reason want two numbers can often avoid detection by using different addresses, reversing the order of first and middle names, and so on. The computer can check for duplicate names, addresses, and the like, but the final determination that a taxpayer has multiple numbers must be made by tax officials. Checking such cases can be time consuming.

Considerations in the Acquisition of Hardware and Software

Computerization is not a miracle cure for the problems of tax administration, and it certainly will not transform what had been a poor manual system. The needs of tax administration must be clearly defined. Software will almost certainly have to be customized to the specific tax needs of the country. In the Indonesian project software development tools, system software, and computer hardware had to be carefully analyzed to determine which computer system and vendor best met the requirements of the Department of Finance.

The issues to be considered in selecting computer systems for tax administration or for any other application include

- The vendor's record
- The availability of user and technical training
- The capabilities of the hardware and software
- Maintenance for both hardware and software. The quality of human engineering and systems engineering support should be evaluated.
- Computing power
- Capability for expansion and growth
- Ease of use
- The documentation available
- Compatibility of equipment with that used in other big financial institutions
- Compatibility of equipment with equipment from the same and other vendors
- The software available, including operating systems and software development tools.

In Indonesia the single most important consideration was the support capability of the vendor, both for hardware and software. This capability was determined by analyzing the performance of the vendor in other installations. It is likely that this consideration will be the most important one in almost all developing countries.

Management must be careful in evaluating vendors' claims about their products. The vendor should not be expected to tell the user how to computerize an application. The needs for tax applications must be outlined in requirements documents provided to vendors so that they can recommend appropriate equipment and guarantee that the proposed equipment will meet the users' needs. The proposed equipment should be observed in a production environment before a vendor is selected.

Just how much computing power is required can be difficult to determine. It is easy to purchase too little computing power, particularly if cost is a prime consideration. The choices of equipment are as follows.

- Microcomputers
- Minicomputers (medium-scale business computers)
- Mainframe computers
- Networking with one or more of the above

Although the power of each of these options is changing constantly, it is wise to avoid an unproved system—that is, to avoid being first with new equipment or software. Since it is easy to underestimate the computing power required, the expansion and growth capability of equipment is extremely important. If a mix of equipment is used (microcomputers, minicomputers, and mainframes with or without networking), there is danger that an application will outgrow the specific hardware for which it was developed. In such cases it is critical to know whether the application can be moved easily to the next largest equipment. For example, can the software on a microcomputer be moved easily to a minicomputer? Often it cannot, and it is best to know this in advance.

Computer systems for new users must be easy to use (the human engineering must be good), and documentation must be readily available and complete. The documentation may have to be translated into the language of the country. The availability of local support personnel for technical assistance and education should be guaranteed in writing in advance.

In a developing country it is essential to choose a suitable hardware vendor. If the vendor is not able to provide maintenance, in-house capability will have to be developed. This is a realistic option for small microcomputer systems but not for large mainframe computers.

Perhaps the simplest approach is to bring all tax documents to a single central location for data entry and processing on a mainframe computer. This provides optimal control but is not practical for organizations such as the Department of Finance, which includes many different activities (customs, tax, Treasury, and so on), or in a country like Indonesia, which consists of many islands spread over a large geographic area. Centralization is particularly impractical if tax documents must remain in district offices. The solution in Indonesia was to use a variety of equipment—mainframe computers,

minicomputers, and microcomputers—for data entry and processing. The basic principle was that data entry would be done at the source—the sixty-nine district tax offices—on microcomputers and processed at the regional and central facilities. Ideally a communications network would be used to transfer data between the microcomputers and the regional computers or the central mainframe computers. Because of the lack of communications links, data is currently transferred in the form of magnetic media (floppy disks or magnetic tape).

The needs for each application must be carefully studied, outlined, and written into a requirements document. One of the main questions in defining applications is, Who will develop the computer programs for the tax applications? Are the necessary technical personnel available to develop software in-house? It must be made clear to tax administrators early in the process that it is not possible to implement software overnight and that last-minute changes may not be completed by the time the features are required by the user.

Both tax application experts and data processing staff must be involved in defining applications. It is difficult to transform data processing staff (systems analysts and programmers) into tax experts, and vice versa. The obvious solution is for teams to study requirements, develop the requirements documents and review all changes, evaluate progress, and take the responsibility for accepting software.

The "keep it simple, stupid" (KISS) principle has great merit in almost any computer application, particularly when the use of computers is new to an organization. Each application must be completely defined, and applications cannot be developed all at once. Priorities must be established, and applications should be done in phases. Ideally a long-range plan for data processing needs should be developed and then reviewed and updated regularly. All applications must be documented completely and accurately.

It should be recognized that the applications are changing even as software is being developed. The existence of and need for such change must be accepted, and planning must take it into account. This principle may seem obvious, but many computer software implementations have failed because plans were not made to manage changes in requirements.

Software is built according to specifications. Changing the software without planning and without modification of the specifications can be and often is disastrous. A good analogy in engineering is the concrete walkway in a St. Louis, Mo., hotel that collapsed in 1981 because modifications made during construction were not checked and accepted by the design engineers. Similarly, software specifications must be revised when changes are made. Change is best controlled by means of formal requests and written acceptances. This is true both during software development and after production begins. Finally, realistic deadlines must be set and should be revised as necessary.

The Background

From 1976 to November 1983 a Univac 1106 computer system was used for all processing done for the Department of Finance. This computer was used as a batch system with a variety of key devices for data entry.[1] Only the traditional data entry verification was used. Validation was done on the Univac system whenever possible. Most of the information collected was for statistical purposes—that is, for generating reports.

The New Environment

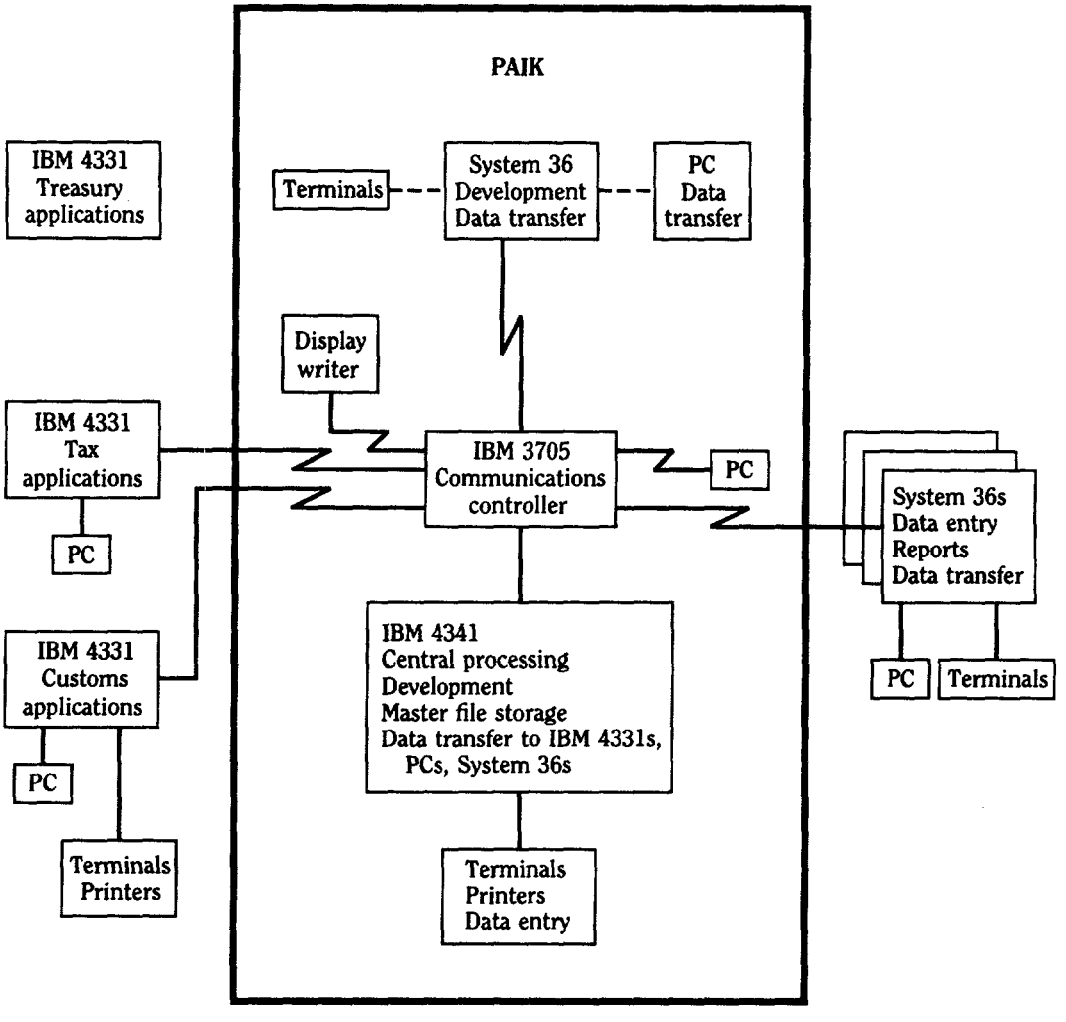
The beginning of a new era in computer technology and support for the Department of Finance and in fact the entire country began in September 1983, when the acquisition of a number of new computer systems was approved. IBM was selected as the vendor of the computer hardware and operating systems software because of its ability to support a wide variety of computers, provide maintenance for both hardware and software, and provide technical assistance and education on site. The acquisition was indeed forward looking. It included 3 medium-scale mainframe computers (2 IMB 4331s and an IBM 4341), 6 minicomputers (System 36s), and 160 IBM personal computers. Figure 17-1 illustrates the basic concept underlying the utilization of these computer systems.

Software was developed by Department of Finance technical personnel in Pusat Analisa Informasi Keuangan (PAIK). Since PAIK staff had experience only on Univac equipment, an awesome task lay before them. Equipment had to be delivered in good time so that learning could proceed and development could begin. Oversights in equipment needs could not be remedied quickly because of the lead times required for ordering and receiving equipment. To avoid such oversights, needs must be carefully studied, and the vendor and the government must cooperate in selecting and ordering equipment.

The lack of enough technical personnel to support all the computers was certain to become an important obstacle to the effective utilization of the hardware. Another problem was the availability and quality of the telephone communications links required for the network that would eventually link the hardware.

The personnel resources available to support the new computer equipment were limited, and a great deal of training in extremely complex areas had to be accomplished in a short time. Four new hardware architectures—the mainframes, the minicomputers, a commu-

Figure 17-1. *Overview of the Computer Network for the Department of Finance, Indonesia*



nications controller, and the microcomputers—had to be mastered, and two new mainframe operating systems had to be supported. New concepts for on-line programming and data communications and new program development environments had to be learned. All this would be difficult to absorb even if the systems analysts and programmers had already had experience with the new vendor's systems.

Minicomputers and microcomputers also had to be supported. Although these systems are not as complex as the mainframe environments, there were many new concepts for the technical staff to learn.

From the very beginning there was much discussion about how data were to be transmitted from one computer system to another, but no one had time to give much thought to the problem. Distributing data in a modern network requires careful planning. It rapidly became obvious that a full network environment for the original computerization plans could not be constructed overnight and would have to evolve over time.

Immediate goals were developed. The primary goal was to develop applications software to support the processing of value added tax and income tax returns that would be required after 1984. Secondary goals included a pilot project for customs as well as related computer projects for the Treasury.

The user requirements for value added tax and income tax return processing were to have been determined by the Tax Directorate in early 1984. This proved to be impossible. For a variety of reasons the implementation of value added taxation had to be postponed until April 1985. But this did permit concentration on income tax return processing, and it meant that computerization of the value added tax would benefit from the experience gained with income tax applications.

The Mainframes

Three medium-scale mainframe computers were leased at the outset. The IBM 4341 was the center of the network. One IBM 4331 was installed in the Tax Directorate and another in the Customs Directorate. The original plan called for direct communications between the 4341, the two new 4331s, and another 4331 at the Treasury. Delays in installing communications links prevented initial use of the communications facility when tax reform software was implemented at the central computer at PAIK.

It was originally thought that the mainframes in the Tax and Customs directorates would be used to process their respective applications. As it turned out, owing to communications problems, the potential size of files to be processed, and the difficulty of distributing data without careful advance planning, all production processing was initially done on the larger and more powerful mainframe at PAIK. This eliminated problems with disk file storage space and data integrity in a distributed environment. Data for reporting purposes could be moved to the mainframes at the Customs and Tax directorates as necessary.

The Minicomputers

One of the primary purposes of the minicomputers was to allow a smooth transition from key to tape devices and to give the regional offices of the directorates of the Department of Finance a certain amount of processing power. Data stored at the regional sites can now be transferred to the central system in the form of magnetic media (diskettes or tape). Reports generated by the mainframe system at PAIK can be sent on diskette to the regional sites for printing, thereby reducing mailing costs. The minicomputers provide for multiple terminals that share common data—a feature that is particularly important for lookup-type verification.

The Microcomputers

One acquisition that was certain to revolutionize and quickly modernize government operations was the widespread installation of IBM personal (micro) computers in district offices throughout the country. Each district tax office, a number of customs offices, and other Finance Department offices would eventually utilize these computers as an integral part of their operations. But success with the computers depended on effective training for all the individuals who would use or be responsible for them.

One of the main functions of the systems was data entry at the source of the information. A general rule in data processing is to gather information as close to the source as possible to avoid the errors that arise in transcription before the data are put into the computer system. Capturing the data at the source also allows earlier control. Once a document is entered into a computer system, changes can be audited and monitored from the very beginning of the government revenue cycle.

Problems are inevitable in a system that uses sixty-nine microcomputers and a variety of software. Many of these problems are caused by operators' failure to follow proper procedures. A carefully planned backup mechanism to prevent the loss of taxpayer data was developed and implemented. (If information exists only as an electronic record on a floppy disk and the disk is somehow destroyed or lost, the information is lost permanently.)

Careful planning is necessary in every application. This is particularly true at remote sites where users operate the computer without daily assistance from PAIK technical personnel.

The Network Environment

Literally hundreds of computers, from mainframes to microcomputers, are involved in the Finance Department's computerization effort. It was not likely that all of these computers could be quickly linked together in a network. In fact the only initial communications were through the System 36 minicomputer at PAIK, which was directly connected to the communications controller attached to the IBM 4341.

Implementation of the tax reform software concentrated on data collection and limited processing at remote sites. The data collected were copied to diskettes and physically sent first to regional terminals for concentration and regional processing and then to the PAIK mainframe for final processing and eventual permanent storage on that system.

Technical Support

Until November 1983 PAIK essentially had a batch operation that ran on a decade-old Univac 1106 computer system. The acquisition of so many new computers forced PAIK personnel to learn rapidly. Although there are certain advantages to putting such pressure on an organization, care must be taken that the pressure and the amount of work are not so great as to jeopardize the entire effort. Top management spent a large share of their time ensuring that overload of staff did not lead to system failure.

The Necessity for Rapid Change

When the hardware was acquired, PAIK secured a commitment from the supplier to provide for the installation of the principal software systems on the mainframe and minicomputers and in the communications controller. The arrangement was intended to allow PAIK personnel to observe the process, take notes, and save printed results of system generations and other types of systems support so that they could begin supporting the installation themselves. In addition, the supplier provided training at PAIK and at the IBM office in Jakarta to complement this on-the-job training.

A problem that faced PAIK at the outset was the shortage of personnel available to undertake the new tasks associated with the installation of the new computers at PAIK and at remote locations, primarily in tax offices. Many key individuals in PAIK had to assume multiple roles and responsibilities.

The Need to Become Self-Supporting

Technical assistance to PAIK from the supplier continued through 1986. It was recognized, however, that IBM could not be relied on indefinitely for solving day-to-day problems. As rapidly as possible, centers of expertise were built up within the organization so that PAIK personnel would know who in the organization could advise them on particular systems. It was extremely important that PAIK first utilize and trust its own experts before going to the supplier's technical staff with questions or problems.

Applications support teams were formed to provide support for each of the directorates-general of the Department of Finance, and a group under each directorate-general coordinated with the appropriate PAIK applications support team. The members of these groups had to be knowledgeable about the application of computers to their areas—that is, tax people, in addition to knowing about tax applications and needs had to be able to understand enough about computers to communicate effectively with the tax applications support team. The same was true for Treasury, customs, and other areas within the department.

A strong systems programming staff is necessary for any successful installation. The staff helps to prevent problems and, should a major failure occur, undertakes recovery of data and programs so that production can resume as soon as possible. In Indonesia the responsibility for all systems programming, acquisition of hardware and software, maintenance contracts, in-house maintenance of microcomputers, and hardware upgrades was placed in one section. An effort was made to cross-train personnel within the section so that the systems programmers could back each other up and no one part of the system was supported by only one person.

Education and Training Issues

Successful implementation of the computerization effort in the Department of Finance required adequate numbers of technical personnel with the correct training, education, and experience; education of tax administrators on the effective use of computers; and careful coordination and planning. Existing staff had to be trained and new people recruited to provide an adequate level of manpower. Three approaches to training were used: supplier's classes, both on-site and at the supplier's centers; training classes taught by PAIK staff; and on-the-job training within PAIK.

Many PAIK section heads had to learn new software and hardware. Because the number of personnel that could be included in the formal vendor-provided classes was limited, PAIK itself had to train programmers. PAIK staff also translated many user manuals for microcomputers and minicomputers into Indonesian to facilitate training.

Much of the training was for entry-level technical personnel. Although productivity at the entry level is usually low and does not resolve the shortage of techni-

cal personnel in the short term, training today aids software development tomorrow, when the individuals have gained experience. Trainees must be taught basic concepts and be given time to apply the principles in both classroom and real environments. Because of the shortage of personnel, there is a danger of moving trainees so quickly that they miss the experience at different levels that helps them become effective programmers and systems analysts. This will remain a problem for some time and simply must be dealt with as well as possible. Training programs should be flexible; trainees who exhibit outstanding natural abilities in data processing should be promoted to more important jobs so they can learn at a rate more suited to their capabilities.

For the introductory courses to be effective, experienced personnel had to be used as trainers. It must be kept in mind that teaching duties add to staff members' burdens and detract from the amount of time they can spend on the analysis and development of critical applications. The solution in Indonesia was to recompense staff for teaching, which had the additional benefit of narrowing the gap between the salaries of government technical personnel and salaries in industry.

Strategies for Software Design and Implementation

The amount of software implemented or scheduled for implementation by PAIK for the Department of Finance over a three-to-five-year period is large—far larger than the amount implemented on the Univac system from 1976 to 1984. What was initially a monumental software development problem will become a monumental software maintenance problem in three to five years, if not sooner.

The procedures and principles used to implement software determine how well the software can be maintained in the future. Most software costs over the life of a system are in maintenance (Martin 1981)—both corrective (fixing errors) and adaptive (modifying the software to meet changing requirements, such as changes in the tax law). Programs that are poorly designed and documented lead to soaring software maintenance costs and unreliable and often unchangeable software (Glass and Noiseux 1981). Standards and policies for software design, implementation, documentation, and maintenance have been recommended and will be followed in the future.

Implementation

The plan was to collect data at district and regional offices and forward this data to the central PAIK facility in Jakarta through regional terminals (System 36s). Program development proceeded in parallel to support all aspects of income tax processing. A similar technique is planned for the implementation of value added tax processing.

The Taxpayer ID System

The computerized taxpayer ID system consists of programs on the mainframe at PAIK, the minicomputers, and the microcomputers. NPWP numbers are generated, assigned to specific district offices, and transmitted to the district offices on diskette. Numbers are assigned to taxpayers at the district offices, and the information is keyed in on the microcomputers. Appropriate documents printed with a microcomputer serve as temporary taxpayer ID records until the permanent NPWP card is issued. Information on the taxpayers is forwarded on diskette to the central site for processing on the PAIK mainframe system, which creates and stores online master file records for each taxpayer. The district master files are updated periodically by means of diskettes sent from the central facility.

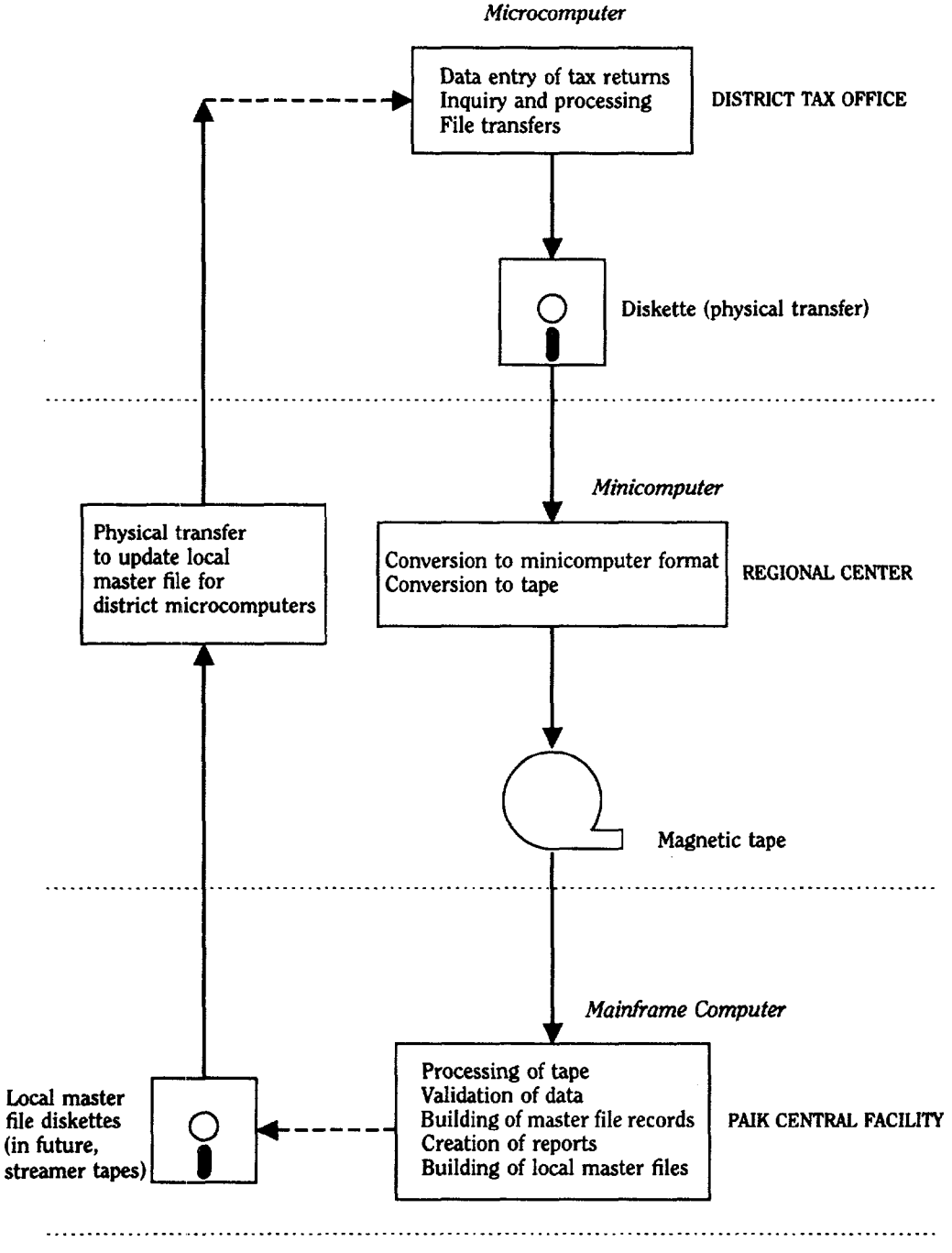
The district office taxpayer ID system runs "standalone" on an IBM PC under the operating system DOS 2.0. (Standalone in this context refers to software that, while it is running, depends on no other software or data files and that uses the entire microcomputer system for a single application.) The system was implemented in IBM BASIC complete with security codes. District office staff were trained by PAIK staff at regional sites. Documentation for the system was prepared in advance of the training. PAIK staff also provided instruction on the general use of microcomputers.

The Tax Return System

Early plans called for entry of both income tax and value added tax information data into the microcomputers at the district office. But, as noted earlier, it is easy to underestimate the needs for a given application. In this case one microcomputer console (video display and keyboard) was not sufficient to support the taxpayer ID system, entry of income tax data, and entry of value added tax data, and expanding to a minicomputer in sixty-nine district offices would be too expensive.

A decision was made to evaluate the possibilities for using the existing microcomputers (IBM PCs and IBM PC-XTs) in a multiuser mode with "dumb" terminals (terminals that cannot be programmed by the user). In October 1984 Digital Research's STARLINK operating system was successfully tested on a system with four such terminals attached to an IBM PC with 640K of memory, an expansion unit, and a 10-megabyte hard disk.

Figure 17-2. *Overview of Tax Return Processing*



The use of STARLINK meant that the microcomputers could support a multiuser environment for data entry. The main drawback of the system was that Digital Research's CBASIC instead of IBM (Microsoft) BASIC had to be used for software development. This severely slowed development of applications because of the need to educate technical staff in the use of the new language.

Development shifted to a STARLINK environment. The STARLINK systems, including software and a multiport hardware board, were installed in the district offices on a second IBM PC-XT, and the taxpayer ID system remained a standalone system on the IBM PC.

In the beginning of the third quarter of 1985 PAIK staff trained district office personnel in STARLINK at regional sites. Data entry software for income tax returns was implemented for the multiuser STARLINK environment in time to be used for the fourth quarter of 1985. Although this was later than initially desired, it was still in time to finish processing the 1984 returns. Training for the income tax return data entry system was done in the fourth quarter of 1985. More than 384,000 income tax returns were processed by the end of December with the use of the data entry software on the microcomputers. Data were moved to the central office by means of diskettes. Balance checks and other validation were done on all returns.

Figure 17–2 gives an overview of tax return processing. The regional minicomputers perform intermediate processing of the data. Data files are then transferred for final processing to the mainframe at the PAIK central facility, where final checks are done and audit selection criteria can be applied. Audit criteria can be established only after statistics for several tax years have been gathered and analyzed.

Processing Value Added Tax Returns

Value added tax data entry began in May 1986. Monthly returns are entered on microcomputers at the district offices. In some offices, particularly the large ones, four or more dumb terminals will eventually be needed. The DRNET networking feature of STARLINK that allows up to five STARLINK-based microcomputers to share resources was tested but proved to be too slow; instead, a serial STARLINK port running at 19,200 bits per second links the systems.

Other alternatives for supporting multiple users on microcomputers have been reviewed. It is now likely that a carefully planned shift to a more sophisticated multiuser operating system—specifically, Compaq Computer Corporation's Xenix System V/286—will be undertaken in the future. (The V/286 is a Unix-based system developed by Microsoft Corporation.) Conversion and support of current applications and the need for training are extremely important considerations in a decision to change operating systems. Networking of microcomputers is a possibility, but in this case the cost is prohibitive because of the number of work stations required.

The original discussions on computerizing the value added tax focused on cross-checking companies' tax payments and credits. Experience elsewhere indicates that total cross-checking, which involves computer entry of all invoices from all firms and electronic verification of all value added tax credits claimed by firms, is difficult and expensive to implement. For the time being, cross-checking has been delayed. Any cross-checking system will be limited to selective checks performed only when warranted by certain conditions, primarily monetary thresholds. In general, total cross-checking is to be avoided; virtually no European country that uses a value added tax has adopted it.[2]

Managing Human Resources

Resistance to computerization efforts, particularly for tax applications, is common and in Indonesia was perhaps the biggest problem that faced computerization. A delicate balance had to be held between pushing tax administrators toward computerization and being sensitive to their concerns. Careful planning was done to minimize friction between tax and computer personnel.

Although this sensitivity and "backing off" may have slowed the computerization effort, it will ultimately contribute significantly to the success of computerization. Because one individual (Dr. Hutabarat, one of the authors of this chapter) was in charge of coordinating all applications within the Department of Finance, he was able to place the role of the computer groups in the center of the organizations that required computerization; that is, he could coordinate the decisions relating to computerization and catalyze their being made. This began to make it clear to the users just how important the computer would become in their operations.

In the beginning it was impossible to require the approval of the central computer group for all actions that related to tax processing. Attempts to do so would have created more friction between tax and computer personnel. With the passage of time such approval is now accepted and is in fact sought out by groups within the Tax Directorate.

Parallel runs are traditionally part of the procedure for implementing new computer software. The existing system (manual or automated) and the new automated system are both used to process the same data, and the results are compared. Once it is verified that the new automated system is performing correctly, use of the old system can be discontinued.

The use of parallel runs means that the activities

of tax personnel can continue as before. But as the computer begins to function smoothly, the inefficiency of the manual system becomes evident and users begin to accept the computer system.

Without the appropriate human resources, it is obvious that computerization of an application cannot succeed. In the case of the Department of Finance, careful coordination of human resources and in-house training for tax personnel and technical staff proved to be the keys to success. All training was carefully planned. Extensive manuals describing the software and procedures were prepared for tax personnel, and formal regional classes were held. This approach proved successful, and future applications will follow the same training model.

Tax administrators have gradually recognized the importance of computers. A central data processing office in the Tax Directorate is now operating effectively and serves as a central office for coordinating and planning computer support for tax administration. Through cooperation with PAIK staff, needs can be determined and formally defined in a requirements document before preparation of detailed specifications and implementation of the programs. All decisions about changes in income tax or value added tax forms must be approved by the data processing office to prevent unexpected problems in supporting data entry and tax return processing.

Moving from a manual to a computer system can be difficult. Now that computers are in place and initial data entry, although still simple, has proved successful, tax administrators are recognizing the importance of the computer system for planning, revenue projection, and audit selection. The computers are in their infancy in some ways, but the entire operation is maturing and will soon provide important and timely information for tax administrators.

Changes in Hardware Requirements

The initial computer hardware acquisition was carried out with certain procedures in mind. The present configuration represents an extension of those original ideas. The main change is at the microcomputer level. Without an operating system such as STARLINK, the cost of providing multiple work stations in district tax offices would have been prohibitive. It would have been best to have known of this requirement from the beginning, since had it not been for the timely development of STARLINK, progress in the computerization effort might have been held up until technology caught up with the needs of the user. Assumptions that products will be available when they are needed usually lead to failures.

A Checklist for Adoption of a Computerized VAT System

In a country such as Indonesia that has limited computer capabilities, planning is necessary before a value added tax is adopted.

- A central data processing office for tax applications needs to be set up to define, coordinate, and plan all data processing support for tax applications. Coordination with data processing staff is done at this level.
- The tax and the computation procedures must be clearly defined for data processing staff.
- Requirements for data processing must be carefully specified before computer hardware and software are acquired. The specifications must include estimates of the computing power required, the distribution of computers, and storage space requirements.
- The technical support available and the methods of implementing the tax software must be determined.
- High-level tax officials must make it clear that computerization has a high priority and that cooperation at all levels is mandatory.
- Data processing management must emphasize the priority to be given the design, development, testing, training, and implementation of tax administration software.
- Computerization of value added tax must be coordinated with the administration of existing taxes, whether computerized or not, and plans should be made for the transition. If tax administration is already computerized, value added tax software must be consistent with the existing software.
- Management must be sensitive to resistance to computerization and be aware of when to push and when to back off.

Pitfalls in Computerizing the VAT

Overloading the system. The initial configurations of the computers in Indonesia were less powerful than required. This was true both at the mainframe level, where more memory and disk space were added soon after equipment delivery, and at the minicomputer level, where systems were expanded. The greatest changes occurred at the microcomputer level. The move from a single-user system to a multiuser system that supported a console and four (dumb) terminals proved to be a dramatic change in capability in the district offices. Few installations maximize the use of microcomputers as much as these offices do. The cost

per work station is low, and the capability for data entry is very good.

Inappropriate utilization of computing facilities. Trying to do too much at once can spell doom for computerization efforts in tax administration. A phased approach to implementation and a strategy of keeping it simple made the initial use of computers for processing income tax returns successful and should work for value added tax returns as well.

Microcomputers cannot do everything. Sometimes too much is attempted at this level, and once capacity is reached, transition to larger systems can prove difficult. Networking helps to solve such problems. What is important is to match computer system capability and application needs. If needs are carefully evaluated for each application, computing power will be there when it is needed.

Inconsistency of tax returns with computerization. All planning and changes for tax forms and processing must involve the data processing office within the tax department. A simple change in forms can necessitate difficult reprogramming and can cause unreasonable delays in processing tax returns.

Incompatible systems. Efforts must be made to keep all systems within the tax department compatible. Existing equipment should be considered in future computer acquisitions. If coordination and planning are done at a high level within the department, compatibility can be addressed and guaranteed.

Summary of Principles

Select an established vendor. The vendor selected in Indonesia had a proven record of support in Jakarta and in other urban areas.

Establish priorities. Since PAIK is a service organization to the directorates-general within the Department of Finance, directors-general had to be made aware that because of the limited number of technical personnel available, not all projects that required software could be implemented immediately. Appropriate resources were assigned to the most critical projects so that they could be completed on schedule. Personnel within PAIK were dedicated to critical projects to prevent missing deadlines because time was being spent on less important projects.

Keep it simple. The KISS principle was applied whenever possible in the design and implementation of the software. This helped to guarantee successful software that met the users' needs and could be maintained in the future.

Plan for a user-defined system The systems that were defined, designed, and implemented were determined by the users' needs. For this to happen, the users had to react to requests for information in a timely manner. In the initial stages, data processing staff had a greater role in determining needs than will be necessary after the data processing office within the Tax Department becomes more experienced.

Apply standards. Minimum standards for all software projects—for requirements documents, specifications documents, programming techniques, documentation, testing and implementation, and maintenance—make any computerization effort easier. Of course, unless adherence to these standards is mandatory, they will be of no value.

Coordinate all applications. The computer organization within the Finance Department helps to coordinate needs across directorates, and the data processing office provides coordination within the directorates. An important principle in coordination was sensitivity to the fears, resistance, and concerns of tax personnel. At times it was necessary to back off from deadlines and requirements to give the users a chance to understand just what was being done in the computerization effort. This has led to the acceptance of the computer system today.

Plan training. Of all the aspects that affect the computerization of tax administration, human resources are the most important. Training of personnel proved to be the key to successful implementation of tax administration software. Such training must be carefully planned and must be provided periodically.

The Importance of Microcomputers in Developing Countries

Perhaps the most important lesson to be drawn from computerization in Indonesia is that microcomputers are by far the easiest computer systems to master and use in a developing country where there is a shortage of technical personnel. The level of training required to support mainframe and even minicomputer systems and the complexity of these systems can make it difficult if not impossible to develop applications for them in a reasonable amount of time.

When appropriate, microcomputer systems should be used for implementing tax applications in developing countries. Use of the KISS principle for software implementation on microcomputers can lead to the development of effective computerized systems for tax administration. Since many developing countries will not require large data files to support their tax applications, much of the computerization of tax administration can be done on the new generations of microcomputers that use the more powerful multiuser operating systems such as Unix. The microcomputer may well be the most important computer development to date for improving tax administration in such countries.

Summary

Although much of the computerization of the value added tax in Indonesia remains to be done, the basic approach to computerization within the Department of Finance will remain the same. Some problems still have to be solved.

- The power and authority of the computer group within the tax organization must be strengthened.
- All changes in forms and procedures will have to require the approval of this group.
- Users must learn to rely more on information that is on the computer.
- The computer system has to be proved and accepted. But once this is done, procedures can be simplified (that is, manual procedures can be eliminated).

It is hoped that the discussion in this chapter will be valuable for those considering various approaches to the computerization of tax administration, particularly for a value added tax, in developing countries.

Notes

1. In a batch system a collection (batch) of data records is entered into a computer system and stored on media that can be read later by the computer system. Early batch systems used keypunches and cards. Later systems used CRT terminals to store data on tape or disk. The batch operation in this case used key-to-tape devices, and the data were stored on magnetic tape. The batches were later read from tape into the Univac 1106 system.

2. A high-level team from the Indonesian Tax Directorate visited Seoul in 1982 to determine what lessons might be drawn from experience in the Republic of Korea. The team concluded that total tracking of sales and purchases as well as cross-checking might be desirable for the Indonesian value added tax. Ultimately, however, the Tax Directorate was persuaded that total tracking and cross-checking were not only expensive but unnecessary.

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18

VAT Administration and Compliance in Britain

Cedric Sandford and Michael Godwin

This chapter focuses on issues of administration and compliance cost for the most common type of value added tax, the consumption type. The British value added tax, adopted in 1973, conforms to general EEC standards; it is a consumption-type tax that employs the destination principle and the invoice system. The implicit and explicit comparisons are with the practical alternative of a retail sales tax rather than with other forms of value added tax.

The fundamental administrative features of a value added tax are multistage collection throughout the production and distribution process and a rebate, or tax credit, system. Under the rebate system a registered trader (a convenient term for any person liable for value added tax at any stage of production) deducts tax paid on his purchases (the input tax) from tax collected on his sales (the output tax) and hands over the difference to the revenue authorities. If the input tax exceeds the output tax, the trader is entitled to a refund. Both multistage collection and the rebate system distinguish the value added tax from a retail sales tax, and the rebate system distinguishes the value added tax from a turnover cascade tax.

Because of these distinguishing features of value added taxation, the number of registered traders is larger than under a retail sales tax. (It is also likely to be larger than under a cascade tax, which necessarily employs exemptions rather than zero-rating.) Both tax administrators and registered traders are, in principle, concerned with both input and output records.

This chapter explores the following issues regarding the value added tax:

- Its main disadvantages—that is, the burden imposed by the level and distribution of administrative and compliance costs
- The administrative superiority claimed for it—the effectiveness with which the tax can be kept from entering production costs and export prices and the difficulty of evasion.

Early Experience with Administrative and Compliance Costs

To our knowledge, the only large-scale study of the administrative and compliance costs of the value added tax was carried out by the Bath University Centre for Fiscal Studies in the United Kingdom (Sandford and others 1981).[1] The figures are for 1977–78, and we have attempted to update them to 1984–85. Because the survey data are more reliable than the updated figures, and because a comparison of two periods offers useful lessons, we start by outlining the findings for 1977–78 and then compare them with the later estimates.

Information on administrative costs was derived mainly from published sources and to a lesser extent from survey data. The data for estimating compliance costs were derived from a mail sample survey of registered traders supplemented by interviews with traders and accountants and other professional advisers.

At the time the survey was undertaken, the standard value added tax rate in the United Kingdom was 8 percent. A higher rate (12.5 percent) applied to gasoline, most domestic electric goods (except for cookers, space heaters, and water heaters), furs, jewelry, boats, aircraft, and most caravans (trailers). Exports were zero-

rated, as were food (except confectionery and restaurant meals); fuel (except gasoline) and power; new construction; books, maps, and printed music; newspapers and magazines; public transport; prescription drugs; and children's clothing. Exempted from value added tax were rent and land, insurance and banking services (unless the services were exported), education, health, postal services provided by the post office, betting and gaming, and funeral services. In addition, small firms with an annual turnover of less than £7,500 in October 1977 were not required to register. (The cutoff amount was raised to £10,000 in April 1978.) Because of the zero-rating and exemptions, a positive tax rate applied to not much more than half of the value of total consumption.

1977–78

Since no significant changes took place in the conditions or coverage of value added tax during the survey year, compliance costs can properly be taken to measure the regular costs of compliance and not the effects of temporary increases.

The difficulties of this kind of survey are such as to generate healthy skepticism about the findings. A fuller account of the methodology is found in Sandford and others (1981). The main points are summarized here.

To ensure the representativeness of the survey, the sample was drawn from the value added tax register. This was done for the researchers by Customs and Excise in such a way as to ensure anonymity. The sample consisted of slightly more than 9,000 firms and was stratified by size and business sector. A response rate of 31 percent yielded almost 3,000 usable returns. Internal and external checks established the general validity of the responses. Aggregate compliance costs were estimated by grossing up the mean compliance costs by size group in each of nine business sectors. The total number of firms in each size and sector group was known from the value added tax register. Compliance costs consisted mainly of payments to regular staff for work connected with the tax; the time spent on paperwork by proprietors or their families (valued appropriately); and fees to accountants or other professional advisers.

The main findings from this part of the study were as follows.

- Aggregate compliance costs were £392 million, or about 9 percent of tax revenue.
- The burden of compliance differed considerably among businesses. It was affected by a number of factors, including the rate mix of the firm's output, the business sector, and the system of accounting, but the predominant influence was the size of the firm. Compliance costs were relatively heavier for small than for large firms. When size of business is measured by taxable turnover (to tie in with national statistics), the smallest firms had compliance costs that were proportionately more than thirty times those of the largest firms. In 1977–78 firms in the £10,000–£20,000 turnover range had, on average, £12.30 in compliance costs for every £1,000 of goods sold. The corresponding cost for firms with more than £1 million in taxable turnover was only 40p for every £1,000 sold.
- The higher tax rate added an estimated 8–9 percent to the cost of compliance had there been a standard rate for all goods.
- The costs of administration (as published by Customs and Excise) were £85 million, or 2 percent of tax revenue.
- A rough estimate on the basis of published data (United Kingdom 1978b) and data from the survey on the frequency and length of control visits to firms of different sizes suggests that administrative costs, like compliance costs, were borne disproportionately by small firms that generated little revenue.
- The total costs (compliance and administrative costs) of operating the value added tax system amounted to 11 percent of tax revenue. Although the figures must be regarded as approximate, it appears that 40 percent of the compliance costs and more than 50 percent of the administrative costs involved those traders–about 69 percent of the total–who had a turnover of less than £50,000 in 1977–78 and who together generated less than 5 percent of the revenue.

In considering the above findings, certain factors must be taken into account.

The effect of zero-rating. A high proportion of both administrative and compliance costs involves the zero-rated products (in addition to exports) that yield no revenue. These products constitute more than 25 percent of domestic consumption in the United Kingdom and nearly 40 percent of the value of the goods and services in the value added tax base. Of course, some zero-rated goods are sold by traders who also sell standard-rated goods and have a net tax liability, and some exporters require refunds. Thus there is no precise link between the proportion of zero-rated goods and the proportion of refunds. Total refunds to U.K. traders amount to approximately one-third of value added tax payments. Traders entitled to refunds have to be registered like other traders; their returns must be monitored with particular care, since payments are being made to them; and in the United Kingdom those

who receive regular repayments are allowed to submit monthly instead of quarterly returns and therefore create more returns for vetting than other traders. Thus administrative and compliance costs are incurred even when no revenue is realized.

Offsetting benefits to traders. A distinction must be made between gross and net compliance costs. That is, compliance creates cash flow and managerial benefits that to some extent offset its costs.

1. *Cash flow benefits.* The U.K. regulations require traders to collect tax over a three-month collection period and to submit a return and pay the net tax liability by the end of the following month (the grace period). Regular repayment traders are allowed to submit monthly returns and can expect to recover their refund about two weeks after submission.

On the assumption that there is an even flow of payments and receipts, a trader who is not a repayment trader obtains a cash flow benefit that, on average throughout the year, is equal to two and a half months of value added tax, or five twenty-fourths of annual tax payments. The benefit is calculated as follows: an average of one and a half months' tax for the three months' collection period (3/24 V, where V = annual value added tax payment), and one month's tax for the grace period (three months' value added tax held for one month every three months, or 1/12 V).

If, as is often the case, traders delay paying value added tax beyond the legal limit and do not incur offsetting penalties, the cash flow benefit will be larger (United Kingdom 1978a). The value of this cash flow benefit depends on interest rates and the credit-debit situation of the individual trader. Its distribution depends partly on commercial credit conditions (since, except for cash sales, the tax point is the invoice date, not the payment date). The cash benefit is a real advantage to the individual trader, but it is not a real resource saving to the economy as a whole. Rather, it is a transfer—in effect, an interest-free loan from the government to the business sector. Regular repayment traders have a cash flow detriment unless they can delay paying their bills until they receive their refunds.

In 1977–78 the total net cash flow benefit was valued at £73 million. For many large businesses the cash flow benefit exceeded compliance costs, and they had a net benefit.

2. *Managerial benefits.* Some firms, especially smaller ones, gained managerial benefits because value added tax requirements compelled them to keep better and fuller records than they would otherwise have done, and these records could be used to improve decisionmaking. Of the firms with a turnover of £10,000–£100,000 in 1977–78, 42 percent agreed that their purchase records were better kept as a result of the tax, and 30 percent said that their sales records were improved. Thirty-two percent of all traders surveyed said that their purchase records were better kept, and 26 percent said the same about sales records. Although many respondents did not think that they got any benefit from improved recordkeeping, 25 percent said that they saved money by doing more of their own accounts, 8 percent enjoyed improved stock control, 6 percent claimed discounts more frequently, 5 percent had fewer bad debts, and 4 percent cited other miscellaneous advantages.

Although it is difficult to put a money value on the managerial benefits of value added tax, they clearly should not be ignored as an offset to compliance costs. Moreover, unlike the cash benefit, the managerial benefits represent a saving in real resources.

1984–85

Since 1977–78 a number of changes have affected administrative and compliance costs. The use of risk analysis by Customs and Excise has increased: traders in high-risk categories receive more frequent and thorough visits by higher-grade officers than do traders in lower-risk categories. Credibility and control checks have been stepped up, and purely educational visits to traders are made only on request.

Even so, there has been a steady deterioration in trader compliance, largely owing to the recession and to high interest rates, which have led traders to cling to cash until the last possible moment. A system of fixed scale penalties to be applied automatically to persistent late payers is now being introduced and is expected to substantially reduce the late payment problem and the need for expensive criminal proceedings.

Some of the changes worked to reduce the costs of compliance. Procedures and documentation were simplified, the higher positive rate of value added tax was abolished, and the standard rate was substantially increased. The special provisions that allowed accounting for imported items to be postponed have, however, been withdrawn. Value added tax on imports is now subject to provisions similar to customs duties, payment guarantees are required, and documentation has become more complex. These changes have increased the compliance costs of importers and reduced the cash flow benefit to traders because some value added tax is now payable earlier in the production chain. The full effects of this measure, which was introduced in November 1984, have yet to show up in published statistics.

Changes in the inflation and interest rates have also had important effects on total revenue, total costs, and the value of value added tax cash flows. Table 18-1 compares the 1977–78 figures with official administrative costs for 1984–85 and estimated compliance costs for that year. The estimates were made by allowing for the

Table 18-1. *Estimated Administrative and Compliance Costs of Value Added Taxation in the United Kingdom, 1977–78 and 1984–85*
(millions of pounds)

Item	*1977–78*	*1984–85*
1. Revenue from VAT	4,200	18,500
2. Administrative costs	85	191
3. Compliance costs	392	940
4. Value of cash benefit[a]	73	495
5. Net compliance costs (3 −4)[b]	319	435
6. Administrative costs as percentage of revenue	2.0	1.0
7. Compliance costs as percentage of revenue	9.3	5.1
8. Net compliance costs as percentage of revenue	7.6	2.3

a. Calcuated using interest rates of 7 percent for 1977–78 (average bank minimum lending rate) and 10.75 percent for 1977–78 (average bank base rate).

b. No allowance has been made for managerial benefits.

saving arising from the abolition of the higher rate, increasing the 1977–78 figures in proportion to the increase in average earnings (since labor is the main component in the costs), and adjusting for the increase in the number of traders. They make no allowance for the other changes mentioned above or for the managerial benefits derived from recordkeeping.

Some Conclusions

The more recent levels of aggregate administrative and compliance costs for value added tax in the United Kingdom—1 and 5 percent, respectively—are not unreasonable, especially as no allowance has been made for managerial benefits.[2] Inclusion of the cash flow benefits reduces aggregate compliance costs to 2.3 percent. The cash flow benefit, however, is not a real resource saving but a transfer, and in any case the 1984–85 figures are inflated by the high interest rates.

The reduction in administrative and compliance costs as a percentage of tax revenue between the two periods arose primarily because the standard value added tax rate increased from 8 percent in 1977–78 to 15 percent in 1984–85. Clearly, value added tax should not be imposed at low rates. Changes in the tax structure, such as the introduction of additional rates, may have substantial effects on costs, but after the initial readjustment, the cost to registered traders and to the revenue department remains much the same whatever the tax rate.

Although aggregate costs may now be reasonable, the burden on small firms remains disproportionately high. The market power of large firms may enable them to impose credit terms on their suppliers and customers that give them a net benefit from value added tax—that is, the value of the cash flow benefit exceeds compliance costs. Meanwhile, small firms still have a considerable recordkeeping burden and face significant net costs (although they do stand to gain the greatest managerial benefits from value added tax). It should be borne in mind that a figure that looks small as a proportion of turnover (say, 1.2 percent for firms in the £10,000–£20,000 range in 1977–78) represents a higher proportion, and sometimes a much higher proportion, of net profit. The question therefore arises: Who actually pays the compliance cost? Put another way, what is its effective incidence?

If all businesses had compliance costs proportional to their turnover, the effective incidence would be identical to that of the tax itself: in most cases costs would be wholly or largely shifted to the customer. But the compliance cost is not proportional, and since small firms are at a distinct disadvantage when they compete in the same market with large firms, they are more likely to take a cut in profits or in the leisure time of the proprietor and his family than to pass on the costs.

That small firms in the United Kingdom see value added tax as a significant burden is indicated by the persistent complaints about compliance costs by the small-firm lobby ever since the tax was introduced. A recent survey, *Burdens on Business* (United Kingdom, Department of Trade and Industry 1985), found that small firms cited value added tax more frequently than any other government regulatory activity as an unwelcome extra burden.

Because the competitive disadvantage that small firms face as a consequence of value added tax was created by government actions, there is a case for granting concessions to small firms. Some possibilities, such as the forfait system, are reviewed by Due in this volume. It is worth stressing here that it is the relative position of small and large firms that is important. Measures such as differential return and payment periods (used, for example, in Belgium and the Federal Republic of Germany—see Godwin and Sandford 1983) can assist small firms simply by putting large firms on shorter periods and thus reducing their cash flow advantage. This procedure may be suitable for developing countries in which small local producers compete with large

multinationals. Another possibility for developing countries is to oblige small firms' suppliers to make the value added tax calculations; this is the method used for the Belgian equalization tax.

The principal concession to small firms in the United Kingdom has been the exemption level—the highest in Europe—which in 1985–86 was £19,500. Raising the registration threshold to a turnover of £50,000 would not involve much revenue loss (*Hansard,* December 4, 1985, written answers, col. 253), but it does not automatically mean that firms below the new threshold will wish to deregister. Indeed, Customs and Excise already devotes some energy to persuading small firms that are registered voluntarily to withdraw their registration.[3] There are several reasons for a small firm's wishing to remain registered.

- Registration may be seen as a mark of respectability that improves a trader's credibility with suppliers and customers.
- Registered customers may prefer to purchase from a registered supplier, since then all input tax is reclaimable, rather than from an unregistered firm, in which case value added tax inputs enter into costs. Indeed, sometimes registration is made a condition for a trading relationship.
- Traders with substantial zero-rated outputs are better off if they can reclaim tax on inputs.

Whatever the threshold, it will create a competitive imbalance between firms above and firms just below the line. Indeed, some sectors in the United Kingdom (especially the building industry, restaurants, and hotels) currently advocate a lower threshold. The competitive imbalance is more pronounced the higher the rate of value added tax. Even the small-firm lobby is not of one mind on the merits of raising the threshold. Its largest spokesman, the National Federation of the Self-Employed and Small Businesses, has opposed an increase partly because it might deter business expansion and lead to compulsory deregistration.

As already indicated, zero-rating raises administrative and compliance costs significantly, especially as a share of revenue and in comparison with a situation in which such goods are standard-rated. The United Kingdom is unusual in the extent of its zero-rating; of the European countries, only Ireland is comparable. On this count, therefore, one could expect other countries to have lower administrative and compliance costs. The main argument used by governments for zero-rating has been distributional. But it can be strongly argued that zero-rating particular commodities is an inefficient way of assisting the poor and that, in a country with a flexible social security system and an income tax that embraces most of the adult population, there are more effective ways of achieving the desired objective. (These, however, may not be open to developing countries.) The distributional effects of value added tax are the subject of another chapter. All that need be said here is that the main disadvantage of value added tax—its high administrative and compliance costs—is significantly reduced, probably in absolute terms and certainly in proportion to revenue, if zero-rating is confined to exports. The cost argument for a single positive rate instead of multiple rates is similar to the case against zero-rating on cost grounds but is not quite as strong, since repayments under zero-rating entail administrative work.

What of the arguments against exemptions? When traders produce wholly exempt outputs, no administrative and compliance costs are incurred. But when their outputs are partly exempt and partly taxable, it becomes necessary to distinguish exempt from nonexempt inputs. Moreover, as happens with multiple rates, the existence of exempt outputs creates borderline problems that raise administrative and compliance costs. There is no doubt that a single-rate value added tax on as broad a base as possible not only has the virtue of being neutral but also minimizes administrative and compliance costs.

The United Kingdom study brings out the importance of the choice of collection and grace periods. In comparison with EEC countries generally, the United Kingdom allows generous amounts of time (except, perhaps, for its smallest traders). Any country that adopts a value added tax needs to give careful thought to the periods allowed and to arrangements for controlling and minimizing late payments. At high rates of interest there is much at issue. For example, if the United Kingdom were to reduce the return and payment periods for the largest firms (6 percent of the total) from three months to one month, there would be a one-time gain to the Exchequer of more than £1.5 billion.

The Advantages of Value Added Taxation for Administration and Compliance

We turn now to the advantages that are said to arise from the value added tax credit or rebate system.

The Exclusion of the Tax from Business Costs and Export Prices

Value added tax enters business costs and hence export prices when it cannot be deducted. This may occur when an exempt service is exported directly, when an exempt trader exports directly, when exempt services are bought by an exporting business, when an exporting business buys from an exempt trader, when value added tax invoices are denied (for "restricted goods")

or are lost, mislaid, or forgotten, or when some "exports" to tourists are not zero-rated.

When an exempt service is exported directly, no value added tax can be reclaimed on inputs subject to the tax. In the United Kingdom the services exempt from value added tax (for example, postal services, education, and burial and cremation) are unlikely to figure significantly in exports. Financial services would be an exception if overseas banking and insurance were not zero-rated. An exempt trader cannot recover input tax on direct exports, but traders exempt because of low turnover are unlikely to be engaged in the export business.

The most significant way in which value added tax can enter business costs is likely to be the purchase by an exporting firm of exempt supplies that include an element of value added tax. In the United Kingdom virtually all exemptions are in the service industries—financial and insurance services, property rental, and postal services. Clearly, almost all businesses are likely to incur rental, banking, insurance, and postal costs. These activities bear nondeductible input tax, and the amount of value added tax passed on from these services into business costs and then into export prices depends on the aggregate cost of value added tax to the suppliers of exempt services and on how much of the tax costs they are able to pass on to their customers.

When an exporting business buys from an exempt trader, the preceding considerations apply, but this situation is relatively unimportant. Businesses normally prefer to buy from other registered traders precisely so that they can obtain value added tax rebates. When they do buy from exempt traders, the latter have to offer a price competitive with the net-of-tax price of registered traders.

Finally, value added tax may enter export prices when exporters who are registered and who buy from registered traders nevertheless cannot reclaim value added tax on certain inputs that are disallowed. Thus the United Kingdom and Ireland do not allow any reclaims for input tax on cars, except by car dealers. Belgium and other countries allow only partial relief on cars. France does not allow businesses to reclaim hotel and restaurant expenses (even for subsistence purposes), business travel, motor fuel, or passenger cars. Other common disallowances are expenditures on business gifts, business entertainment, and company aircraft.

Claims for input tax require an invoice. If invoices are forgotten, lost, or mislaid, input tax cannot be claimed. (But in the United Kingdom copies of invoices are acceptable.)

Finally, some exports that take the form of sales to tourists may not be zero-rated. The United Kingdom has a provision whereby customers can reclaim value added tax by sending back to the seller a document stamped by Customs and Excise at the port of embarkation. The seller can then refund the value added tax and use the stamped document as proof of export sale. This scheme is open to all businesses, but some retailers do not take advantage of it because of the extra paperwork, and hence some value added tax enters export prices.

Although some value added tax does find its way into business costs and export prices, the amount is relatively trivial. It seems likely that the rebate mechanism of value added tax is superior to that of any other tax in ensuring the exclusion of the tax from export prices. Its relative precision is especially important in the context of customs unions or international agreements where the alternative may be ad hoc rebate methods that carry the suspicion of overcompensation and covert subsidization of exports. This mechanism is one of the aspects of value added tax that commended it to the EEC.

The Control and Minimization of Evasion

The conventional wisdom is that the tax credit or invoice system of value added tax is a relatively effective means of controlling evasion. But the validity of this assertion cannot be taken for granted and needs to be explored.

One argument has been that the invoice system allows the revenue authorities to control evasion by cross-checking. When both trading partners are registered, one's tax is the other's tax credit or refund, and the invoices can be used to check the accuracy of returns. Since this relationship does not hold for trade with nonregistered persons, it does not apply at the retail stage, although that stage, which includes a large number of small businesses, is generally recognized as the most vulnerable. It is argued, however, that under a value added tax (in contrast to a retail sales tax) only a fraction of the tax is collected at the retail stage and that hence both the incentive to evade and the amount of tax at risk at the retail stage are less than under a retail sales tax.

A complementary argument that does not depend on the activity of revenue authorities is that value added tax is largely self-policing. A registered trader who wishes to evade value added tax will seek to understate output tax (the tax collected on sales) or to overstate input tax (the tax on purchases, which constitutes a credit). But in trade between registered traders one trader's interest in evasion is directly contrary to the interests of his trading partner, and incentives for collusion to evade the tax are absent. The self-policing argument does not hold at the retail stage, where the purchaser, who cannot reclaim value added tax, is only interested in the price actually paid. In addition, at the retail stage the payment is often in cash and there is

no invoice. But it is again argued that only a fraction of the tax is collected at the retail stage.

Leaving aside for the moment the question of the retail end, how valid are the arguments concerning cross-checking and self-policing? Clearly, the revenue authorities cannot as a matter of course cross-check all invoices of suppliers and customers, but some checking does take place. Undoubtedly, practice differs among countries. In the United Kingdom, when Customs and Excise has strong reason to suspect a violation, it makes an immediate cross-check. If the suspicion is not so strong, a note is made on the file of the supplier (or customer) of the trader under suspicion, and the matter is investigated at the next routine inspection of the supplier. The invoices therefore provide a definite means of control.

The self-policing argument also carries conviction. Clearly, value added tax frauds between registered traders require elaborate collusion.

A more careful examination needs to be made of the final component of both arguments—that because only a fraction of revenue is collected at the vulnerable retail stage, the scope and incentive for evasion are small. Value added tax is a tax on domestic consumption, and the whole tax has to be extracted from the final consumer. The retailer does not hand all of the tax collected over to the revenue authorities, since he first deducts what he has paid on his inputs, but he does have to collect the full tax. If the tax credit system allows a trader to reclaim any surplus of input over output tax, it could in theory be argued that there is as much tax at risk at the retail stage under value added tax as under a retail sales tax. Under a value added tax a retailer collects the whole tax on his outputs and, by claiming to be zero-rated, could seek a refund of his input tax. This argument, although valid, must be regarded as somewhat unrealistic, since the practice could not continue long before being spotted. Furthermore, since under a value added tax retailers have paid some tax on their inputs, the tax at risk at that stage is reduced.

But the argument does illustrate several points. Value added tax offers opportunities for fake claims for rebates, which the retail sales tax does not, and the more goods are zero-rated, the more the scope for such fraud. Multiple rates and exemptions also facilitate fraud. If all of the goods that a trader sells are standard-rated, to understate his output tax he needs to understate his aggregate sales. If he is selling goods at different rates, he can understate his output tax by understating sales of higher-rated goods within an unchanged aggregate.

Because value added tax requires the maintenance of records of both inputs (purchases) and outputs (sales), the revenue authorities have a more solid basis for checking the accuracy of returns than if only sales figures were supplied. A registered trader will not wish to understate his purchases, on which he gets a tax credit. Revenue authorities develop guidelines about the markup in particular trades and how much output can be expected from a particular flow of inputs. Of course, this relationship will vary with changes in the level of the firm's stocks or equipment, but a persistent irregularity in the relationship between inputs and outputs can give rise to suspicions that can be followed up by inspections.

Among the EEC countries there has been a distinct move toward joint income tax–value added tax audits, which has helped to control evasion of both taxes. In the United Kingdom, where the Inland Revenue Department is responsible for income tax and Customs and Excise is responsible for value added tax, an experiment with exchange of information between the two departments has been fruitful, and the Keith Committee on Revenue Powers (United Kingdom 1978a) has recommended that the practice be extended.

The United Kingdom and some other countries try to ease the burden of compliance at the retail stage by offering special schemes whereby retailers' tax liability is determined solely by inputs. Both input and output data still have to be collected; the special scheme is simply an easier way of calculating value added tax. In any case, because the schemes are based on inputs, it remains possible to cross-check with suppliers' sales.

One form of evasion is the failure of small businesses to register even though their turnover is above the limit. At least such traders pay value added tax on whatever inputs they require, as would not be true under a retail sales tax.

The retail sales tax has an important advantage over the value added tax in the control of tax evasion. Because it is imposed at only one stage, it involves fewer registered traders than does a value added tax. The difference in numbers is not as large as might be thought, since an ideal retail sales tax should cover all retail sales and thus should fall on wholesalers, manufacturers, and farmers who make some retail sales (if only to their employees), but it is still significant. In the United Kingdom a retail sales tax would require the registration of 72 percent of the number registered for value added tax, according to an unpublished 1979 Working Party Report. If the number of registered traders is smaller, more intensive surveillance can be carried out for the same cost.

There can be no certainty about the accuracy of estimates of the extent of evasion, and judgments about the relative vulnerability of different forms of tax are fallible. In the United Kingdom, according to a recent official estimate, undiscovered underdeclarations of value added tax by registered traders amount to £300 million–£500 million, or about 2 percent of value added tax revenue yield (*Hansard,* January 16, 1986,

written answers, col. 648). But this estimate does not include revenue losses from false claims of exemption or from large frauds by organized crime. Such problems have arisen with the importation of gold, with fraudulent refund claims, and with liquidations, and measures have been taken to deal with these offenses.

Conclusion

The British experience suggests that there is no a priori reason for proclaiming that the value added tax is better or worse than a retail sales tax. Our tentative judgment is that there is much in the conventional wisdom that, on balance, a retail sales tax is preferable if the rate is low but that the value added tax has the advantage if the rate is to be high. The unique features of the value added tax—multistage collection and the rebate system—increase administrative and compliance costs but provide a more accurate and reliable mechanism for excluding tax from business costs and export prices and probably aid in controlling evasion. What can be said with complete confidence is that a structure with minimum exemptions, a single positive rate, and zero-rating only for exports will minimize administrative and compliance costs and maximize the advantages claimed for value added taxation.

This chapter has drawn primarily on United Kingdom experience and to a lesser degree on that of other developed countries. To what extent is the experience with value added tax in developed countries relevant to countries in different stages of development?

Many of the problems that arise from the unique administrative and compliance features of value added tax are accentuated in developing countries, which tend to have many more small farmers and businessmen, in relation to their economic size, than do developed countries. Small businesses in the United Kingdom have difficulty with recordkeeping for value added tax, and in countries where literacy and numeracy are much less widespread, recordkeeping is probably even more burdensome. Payments of refunds create particular difficulties in many developing countries. And if a developed country, for distributional reasons, hesitates to apply a single value added tax rate across the board, a developing country that lacks a sophisticated social security system to compensate the poor for the higher prices of necessities has much more reason to be cautious.

The disadvantages of the value added tax structure are thus accentuated in developing countries, and its potential advantages are less likely to be realized. The capacity of value added tax to resist evasion rests in part on relatively sophisticated cross-checking, on computerization, and on a corps of well-trained and adequately paid tax officers. These resources may be absent or inadequate in developing countries, and evasion is more prevalent. In addition, the more exemptions there are, the less complete and precise the exclusion of tax from export prices, and for practical reasons exemptions are likely to be more necessary in developing countries.

This does not mean that the value added tax does not have important merits for a developing country. But expectations must be set lower, and the tax must be trimmed to administrative capacity. It is particularly necessary to exclude from the standard value added tax structure the myriad small businessmen and farmers who would find it impossible to keep adequate accounts. This might be done with the use of the methods illustrated by Due in this volume. Such measures ordinarily involve little revenue loss but considerable savings in costs of administration and compliance.

Experience in the United Kingdom and elsewhere suggests that a value added tax is introduced most easily when it replaces a cascade tax or some other general form of sales tax that has already accustomed small firms to recordkeeping (see United Nations Department of Economic and Social Affairs 1976 and Lent, Casanegra, and Guerard 1973). This chapter has so far alluded only to the regular costs of compliance and administration—the continuing costs when the value added tax is running relatively unchanged. But when the tax is first introduced, there are one-time startup costs for the revenue authorities, such as training tax officers and educating traders, as well as costs for traders who must buy new calculators, tills, and other equipment and familiarize themselves with their obligations under the tax (Godwin 1976). Learning costs will continue until revenue officers and traders have become thoroughly accustomed to the tax. Especially where value added tax is not replacing some other form of sales tax that has provided relevant experience, there is a case for restricting the scope of the initial imposition with a view to extending the tax later as experience is gained.

Finally, we would stress an earlier point that applies to developed as well as developing countries. The value added tax is not a tax to be operated at low rates. Because of the overhead costs that accompany it, it should be contemplated only if it is to be an important source of revenue.

Notes

The authors gratefully acknowledge the assistance of Her Majesty's Customs and Excise in the preparation of this paper.

1. A smaller study in the Netherlands on a sample of 286 firms (Snijder 1981) shows a similar reduction in proportionate costs as firm size increases. Snijder's costs were somewhat lower for small firms than Sandford's, presumably because, unlike the U.K. revenue departments, the Dutch authorities

allow firms a tapering tax rebate according to size.

2. The administrative costs of the U.K. revenue departments for 1984–85 were given in the departments' most recent annual reports as £786.7 million for Inland Revenue, the equivalent of 1.72 percent of revenue, and £393.5 million for Customs and Excise, equivalent to 1.11 percent of revenue. Relatively few attempts have been made to measure compliance costs. Two examples are Sandford (1972), which estimated the compliance costs for U.K. personal direct taxes in 1970 at 2.5–4.4 percent of revenue (not counting up to 4 percent more in tax work done for private firms but not billed to value added tax compliance) and Slemrod and Sorum (1984), which estimated U.S. personal income tax compliance costs at 5–7 percent of revenue in 1982.

3. Private communication, Her Majesty's Customs and Excise.

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Part V

Conclusion

19

Lessons for Developing Countries

Malcolm Gillis, Carl S. Shoup, and Gerardo P. Sicat

Few fiscal innovations have spread worldwide as rapidly as the value added tax. In 1950 no country used the tax, and only Japan had proposed a form of it for subnational governments. By October 1986, nearly sixty nations used some form of VAT, and forty of these nations were classified by the World Bank as developing countries. In 1986 alone, New Zealand joined the ranks of VAT nations, along with Niger, Portugal, and Spain; Taiwan also adopted a VAT, and India adopted one of restricted scope. Greece introduced a VAT effective January 1, 1987. In several other countries, including Japan, the Philippines, Thailand, Pakistan, and Hungary, the VAT is under active consideration as a tax reform option.

There have been notable regional differences in government's use of the VAT (see Shoup, this volume). In the late 1960s Uruguay and Brazil became the first developing nations to adopt a comprehensive form of VAT, that is, one that includes retailers. By 1986 the VAT had spread to a total of sixteen countries in Latin America and the Caribbean. In virtually all of the cases in this region, the tax is used in its comprehensive form. In Africa, only Niger and Madagascar employ the comprehensive form of VAT, but sixteen other countries have "VAT-like" taxes (see Shalizi and Squire, this volume). The VAT has been less common in Asia and least widespread in the Middle East. In Asia, only four economies have adopted the VAT, and only Korea and Taiwan utilize the comprehensive VAT. Among the Middle Eastern nations, only Israel and Turkey have adopted the VAT.

By 1986 about half the developing countries employing the VAT had enacted the tax in its comprehensive form. Many of the remaining developing countries employing less comprehensive forms of VAT (primarily those confined to the manufacturing, importing, and extractive sectors) may be expected eventually to follow the patterns of VAT utilization in France and Colombia. In both cases experience with preretail types of VAT over fifteen year periods was an important element in the decision to move to a comprehensive VAT (which France adopted in 1968 and Colombia in 1983). No national government that has operated either the comprehensive or the preretail forms of VAT has shifted to a single-stage tax on manufacturing, wholesale, or retail activities.

The experience with value added taxation in developing countries offers some lessons for indirect tax reform. Part of this experience derives from the way industrial countries that have instituted the VAT have solved certain issues in its design and implementation. The increasing number of developing countries that have used the value added tax have further enriched that cumulative stock of experience from which we now draw.

In summarizing the lessons we present first what we believe to be consensus issues, those on which substantial agreement (not necessarily unanimity) is evident among the authors contributing to this volume, and second, other issues on which consensus is not evident, usually because they needed further exploration. The issues in this latter group are not equally important to all developing countries considering adoption or reform of VAT. All, however, merit serious attention in the design, implementation, and administration of a VAT. Finally, we sketch the type of VAT most likely to be consistent with the goals typically sought in imposition of that tax, given the types of common and

uncommon constraints found in different developing countries.

Consensus Issues

There is no single VAT suitable for all settings. To some extent a country's objectives determine its choice of VAT. But of the dozens of feasible types of VAT out of 576 nominally possible combinations of the tax identified by Shoup in this volume, countries that have adopted the VAT have tended to settle on the consumption type, imposed on the destination principle, employing the tax credit method of computation, and levying two or more rates in addition to a zero rate.[1] This type of tax, widely known as the European Community (EC) type of VAT, evolved largely out of decades of unsatisfactory continental experience with multiple-stage turnover taxes. The EC type of VAT is comprehensive, but we shall use the term "EC type" also to denote non-comprehensive VATs that have the remaining EC-type characteristics.

In virtually all developing countries, including those with preretail taxes, the VAT has carried all the other three basic earmarks of the EC version. Among developing countries, only Argentina, Peru, and to some extent Morocco and Turkey have chosen the income type of VAT over the consumption type. All national value added taxes have been imposed on the destination principle. Among developing countries, the origin principle is used only for subnational taxes in Brazil. Furthermore, all national value added taxes use the tax-credit method of computing the tax.

The broad similarities between the EC tax and those used throughout most of the developing world might suggest mere emulation of the EC as a motive for adoption of the tax in developing countries. And, to a certain extent, the generally successful revenue performance of the VAT in the EC may have predisposed developing country governments to consider the VAT as a reform measure. Nonetheless, Brazil introduced the EC form of VAT a year before it was introduced in any EC nation, and the VAT in Uruguay has been in operation as long as, or longer than, the VAT in any EC country except Denmark. The early, and largely successful, Brazilian and Uruguayan experiences with the VAT may help explain why the tax now virtually blankets South and Central America.

By and large, developing countries have selected the EC type of VAT (with appropriate modifications) not only because of the relative lack of experience with and information on alternative configurations of VAT, but because the EC type of tax has proved to be the most consonant with the fiscal objectives typically sought in indirect tax reform and the most serviceable for tax administration and compliance.

The consumption basis is indeed appropriate if policy seeks to be neutral in resource allocation. In a world where exchange rates do not adjust quickly or even fully to render irrelevant the effects of taxes on traded goods, and in countries where the tradeoff between employment growth and current consumption opportunities is resolved in favor of the former, the destination principle is to be favored over the origin principle. The tax credit method of computing and collecting VAT liability offers several advantages over the alternative subtraction and addition methods. The tax credit method has some self-enforcing features for promoting tax compliance and facilitates the exclusion of exports and basic foodstuffs from the tax base, through zero-rating. The tax credit method also provides some built-in protection for the integrity of the VAT base, since exemptions of preretail activities are generally not in the interests of seekers of favored treatment under the tax.

The EC type of tax (whether comprehensive or preretail) thus has been a sensible choice for the dozens of developing countries that have adopted the VAT. Too few countries have installed the income-type VAT to permit any useful generalizations on its efficacy.

The issues that reflect a consensus of opinion within this volume may be grouped according to their relevance to four common considerations in tax design: revenue, economic effects, administration, and income distribution. This classification is not by any means airtight; some issues included under the rubric of economic effects, for example, might be discussed just as well under the administration category.

Revenue

The VAT is often expected to produce, in short order, a significant amount of tax revenue relative to GDP. Indeed, the tax has developed enough of a worldwide reputation as a "money machine" that it is on this account not favored by those who seek a more restricted role for government in the economy (see Gillis 1986 and McLure 1987; for a more sanguine but flawed review see Stockfisch 1985).

European experience with the VAT lends only limited credence to the view of the tax as a money machine. The share of the VAT in GDP grew in all European VAT countries save Norway in the decade after 1973. Yet the shares of income and social security taxes grew faster.

In developing nations the VAT *has* tended to be something of a money machine. In Argentina, Chile, Costa Rica, Korea, and Indonesia, for example, the ratio of revenue to GDP grew by at least 50 percent within the first three years of the VAT's adoption, compared with revenue from the indirect taxes replaced by the VAT (see Tait, table 2-2, and Casanegra, table 15-1, this volume). In all developing countries that adopted the VAT before

1981, except Bolivia, the VAT as a percentage of GDP was appreciably higher in 1983 than in the year after it was introduced. Although the available evidence does not suggest that many countries should expect the ratio of VAT revenue to GDP to soon reach the 7 to 8 percent range found in Chile and Brazil in 1983, it seems clear that countries may implement the tax with minimal risk of revenue loss and with some expectation of fairly strong revenue growth, at least in the early years.

Determination of Rates. Experience in both industrial and developing countries suggests that a VAT imposed at low rates may not be worth the administrative and compliance costs involved in the switch to the VAT. For all of its vaunted self-enforcing features, the VAT does not administer itself. Start-up costs in particular may be quite high in the first two or three years of application. The only well-documented evidence on this phenomenon pertains to Britain, where operating costs of the VAT (administrative plus compliance costs) in 1977, three years after enactment of the tax, were estimated at 11 percent of VAT revenues. By 1984–85, however, operating costs of the VAT had declined to little more than 6 percent of revenues, primarily because the 1984–85 basic rate was, at 15 percent, nearly twice as high as in 1977 (see Sandford and Godwin, this volume).

The most comprehensive governmental survey of VAT options for the United States also concluded that VAT is not a tax to impose at low rates, because of the additional investment in tax administration that would be required before and during the first few years of operation of the tax (United States Department of the Treasury 1984, vol. 3). No rules of thumb are available as a guide to developing countries seeking the lowest feasible basic rate of VAT. In general, however, it is doubtful that an initial base rate much below 7 percent would be worthwhile for countries contemplating comprehensive value added taxes. For countries preparing to implement a manufacturers VAT of the type used in Indonesia since 1985 and in Colombia from 1968 to 1975, a basic rate of at least 10 percent may be required to ensure viability of the tax on revenue and administrative grounds.

Taxation of Services. Service sectors constitute an important share of economic activity in all countries, ranging from upwards of half of GDP in low-income developing countries to two-thirds or more in high-income industrial countries. Inclusion of services within the base of comprehensive value added is clearly advisable to increase revenue or to allow lower rates of tax on commodities. Taxation of financial and housing services involves particular conceptual and administrative difficulties and is discussed separately. The revenue argument for full inclusion of a wide range of other services is nevertheless strong. Both consumer and business services can be included in the base of a comprehensive VAT of the EC type. Examples of the former include services rendered by beauty and barber shops, restaurants, hotels, theaters, and the like. Virtually all nonfinancial services rendered to business firms can also be easily included in the base of a comprehensive VAT. All VAT taxes paid by firms on their purchase of services is creditable against taxes due on their sales.

Inclusion of a wide range of nonfinancial services in the scope of a preretail type of VAT is generally inadvisable, since many important categories of these services are essentially retail in nature. Tax revenues from such expenditures are generally best pursued with separately administered excises on services until such time as the VAT can be extended to the retail level.

Economic Effects

Inflation. Policymakers in both industrial and developing countries have on occasion been reluctant to replace other taxes with a VAT because of concern over the potential inflationary consequences of such a reform.[2] This fear is essentially groundless, if by inflation we mean a continually rising price level. Introduction of a VAT has on occasion had some once-and-for-all impact on the price level, but has never caused a continuing upward spiral of prices.

In this volume Tait takes up the question of the price movements of countries during the periods immediately before and immediately after the adoption of the VAT. Of the thirty-five industrial and developing countries he studied, twenty-two did not experience a substantial price increase owing to the introduction of a VAT. Although in eight cases the introduction of a VAT was associated with a rise in the consumer price index, it was a once-and-for-all shift; there was no further price increase.

It is therefore possible to design a VAT which substitutes for an existing tax, at least an existing indirect tax, and which brings in the same yield without any effect on the price level. Even if greater yield is desired (as in the case of a rate increase) at most there can be a once-and-for-all shift, but not a continuing or accelerated increase in the price level. Other factors may lead to inflation, but not the VAT. Moreover, any potential inflationary impact of a VAT may be vitiated by the sensible use of appropriate transitional measures at the time the VAT is introduced. These results are confirmed elsewhere in this volume by others who have observed some VATs put in place in specific countries.

Balance of Payments. Proponents of the VAT have long argued that substitution of a version of the VAT based on the destination principle for a retail sales tax

or an income tax would improve the balance of payments on current account. This was in fact one of the principal arguments offered in the United States and Sweden in the 1960s for reducing corporation income taxes and repealing a retail sales tax, respectively, and replacing the lost revenues with a VAT. The basis of the view that a VAT is more favorable to exports than the retail sales tax lies in the superiority of the VAT in fully freeing exports from tax, when exports are zero-rated. This advantage, however slight, was the primary reason why Sweden and Denmark opted for the EC type of VAT in the late 1970s (see Norr and Hornhammer 1970 and Shoup 1969). The view that the VAT is more favorable to exports than the corporate income tax was based primarily on the assumption that the latter tax was shifted forward in the form of higher prices, a view less common today than two decades ago. The corporation tax uses the origin principle and thus does not exempt exports.

In any case there is virtually no dissent among the authors contributing to this volume to Tait's two-part finding on the implications of substituting a VAT based on the destination principle for other taxes. Regarding replacement of other sales taxes by the VAT, Tait concludes that any beneficial effects for exports tend to be quite small. Adoption of such a VAT as a substitute for some portion of income tax revenues may, under some circumstances, yield positive export-promoting effects, but these are likely to be transitory.

It may be concluded then, that countries contemplating adoption of a VAT should not expect this fiscal measure to result in any significant or long-lasting beneficial effects on exports.

Financial Development. Countries considering the adoption of a VAT confined to the manufacturing and exporting sectors can largely ignore the potential effects of the tax on the financial sector. Banks, insurance companies, and other financial institutions do not generally fall within the scope of such taxes.

Countries considering the enactment of a comprehensive VAT of the EC type, however, must carefully examine the implications of the tax for financial development. In this volume Gillis shows that the relatively long European experience with the VAT offers little guidance to developing countries in this regard. The common European expedient has been exemption of most financial services. Although far from satisfactory, exemption in Europe has not likely had much of an impact upon the relatively mature financial structure of these countries.

For most but not all developing countries, the situation is materially different. The often fragmented financial system is not generally well developed. Many types of financial institutions are embryonic. The insurance sector in particular tends to be small and vulnerable. And in many countries, even the linchpin of any financial system, the commercial banking sector, has not yet begun to fulfill its potential for resource mobilization and intermediation.

In a world in which capital tends to be immobile internationally, inappropriate VAT treatment of the financial sector may not significantly impede the orderly development of the financial sector, whatever it may do to the efficiency of financial intermediation. However, there is growing evidence of a relatively high—if imperfect—degree of mobility of capital across national borders. In such a world, the VAT treatment of the financial sector may have significant implications for financial development. Exemption of financial services may be the most damaging option. By breaking the chain of tax credits available through the VAT, exemption of financial services may overtax users who cannot credit the cost against their taxes.

Full inclusion of such services in the VAT base would, therefore, be less prejudicial to orderly financial development. But any full taxation encounters some significant conceptual and administrative issues. The final option, zero-rating of financial services, is superior on all accounts save one: the thorny administrative and compliance problems that are involved. In addition, zero-rating is of course the most expensive option in the amount of revenue that would be forgone.

Thus, Gillis concludes that no fully satisfactory method now exists for handling financial services under a comprehensive VAT. He outlines some expedient options for this sector and recommends a combination of zero-rating (for banking services), full taxation (of non-life insurance), and exemption (for life insurance services). There is less support among our contributing authors for the feasibility of zero-rating in developing countries. But there is widespread agreement that the VAT treatment of financial services is likely to be a troublesome issue for some time to come.

Neutrality. Neutrality under a consumption-type VAT is generally interpreted as requiring uniform taxation of all current consumption expenditures. Neutrality issues are relevant for the examination of structural features of value added taxation (see, for example, Shoup, Gillis, Conrad, McLure, and Cnossen in this volume). Full neutrality in the VAT treatment of consumption is recognized as impossible to attain, even when fervently desired. There is little disagreement, however, that the loss of economic efficiency owing to the tax is likely to be minimized when uniform tax rates are applied to the broadest possible base. In turn, this implies limited use of both exemptions and zero-rating. Where relief is sought for certain forms of consumption, such as food, and where administrative problems dictate special treatment for specific activities, such as small firms, zero-rating rather than exemption

emerged as the preferred option on economic grounds alone. Where departures from uniform rates are deemed essential for income distribution reasons, because other fiscal measures to compensate low-income families are unavailable, it was widely agreed that the fewer rates the better.

Consumption or Income VAT? As stated earlier, the consumption type of VAT has been adopted in almost all countries. Most experts compare the consumption type only with the income type, since a third type, which is based on gross income, is unanimously deemed unacceptable on economic grounds (see, for example, Shoup, Schenone, Perry, and Cnossen in this volume). A small minority of the contributing authors here favor the income type of VAT over the consumption type. On balance, economic considerations favor the consumption type, and it is easier to administer (McLure 1987). Special reasons may favor the income type of VAT for a particular country's specific objectives, but it is likely that the most common form of value added taxation will continue to be the consumption type.

Comprehensive or Preretail VAT? There is no specific focus here on relative economic effects of a comprehensive VAT, that is, one that extends through the retail level compared with a preretail VAT. It is perhaps unthinkable that a preretail tax of any kind be implemented in situations where a retail levy could be effectively administered. Preretail types of VAT, such as those confined to manufacturers and importers, have some administrative and compliance advantages over preretail single-stage taxes and many economic advantages over multiple-stage turnover taxes. But the economic superiority of a VAT that extends through the retail stage is well established in the literature and in fiscal experience.[3]

The inherent distortions produced by preretail taxes have rendered them especially unsuitable for industrial countries. They survive today only in Australia, Canada, and Switzerland and have begun to disappear from the tax structures of developing countries as well. Nevertheless, comprehensive value added taxes are not an option for many low-income developing countries, particularly those in which retail trade is dominated by many small-scale firms with little formal recordkeeping. In such cases, movement away from single-stage and turnover taxes and toward preretail types of VAT may offer some significant benefits until such time as retail taxation proves feasible. In this volume Shalizi and Squire have identified eighteen African countries in which taxes have "VAT-like" features. They suggest that, by building upon these existing tax instruments, these countries can improve the efficiency of domestic resource use and also provide the basis for comprehensive taxes on consumption in the long run. The Indonesian experience also suggests that a shift from ineffective forms of manufacturers taxes to a simple form of preretail VAT may yield substantial improvements in revenue, equity, and administration, provided that the groundwork for such a reform is carefully planned and realistically implemented.

Regional and Industrial Incentives. There is little support among the contributing authors for the manipulation of the VAT structure to promote goals of regional or industrial development. Such manipulation is often done through exemption for favored regions or industries, or through the use of lower rates. Utilization of the VAT for those purposes has been most common in Latin America. One of the central messages of the chapter on Argentina by Schenone is that the VAT is poorly suited as an instrument for providing regional and sectoral incentives. Avenues for evasion of the VAT are opened with the introduction of special schemes favoring some regions. The conclusion is that other fiscal instruments, including revenue-sharing agreements, are more effective policy tools for regional development objectives than reliance on the VAT.

Housing Services. The European experience with the VAT offers few lessons to developing countries for the taxation of housing services. Failure to include housing services not only results in significant shrinkage of the potential VAT base, but provides artificial incentives for households to consume housing relative to taxable goods and services. But full inclusion of the flow of all housing services is infeasible where owner-occupiers cannot be taxed; then taxation of rentals yields inequity and economic distortions. Some of the contributing authors supported taxing housing services by separate levies outside the structure of the VAT. This subject is discussed further below.

Administration

Tax Evasion. The EC type of VAT, with its tax credit method of collection, has enjoyed a reputation as being more effective against tax evasion than single-stage taxes, such as the retail sales tax. This reputation is by and large deserved, but the advantages of the VAT in controlling evasion are easily exaggerated. The VAT does not administer itself; the tax requires essentially the same type of audit activity and the same kinds and quantities of other administrative resources as needed under a single-stage tax, whatever the level.

The tax credit type of VAT, however, does have three antievasion features not present in a retail tax. These are (a) its self-policing attributes, (b) its possibilities for cross-check of invoices, and (c) its tendency to collect a major portion of revenues before the retail stage.

These features are discussed in greatest detail in this volume by Sandford and Godwin, but also by Casanegra, Hutabarat and Lane, Shoup, and Han. The contributing authors broadly agree on the administrative benefits of the self-policing feature, which arises from the fact that underpayment of the VAT by a firm selling to another firm increases the VAT liability of the buyer. This advantage was viewed as significant, however, only so long as evasion at the point of final sale is not endemic.

The contributing authors have not reached consensus on the advantages offered by cross-checks under the VAT. This device has been most intensively employed in Korea, where invoices received by buyers are routinely matched against those retained by sellers. It is applied on a much more limited scale in Indonesia. The cost-effectiveness of the type of cross-check done in Korea has not been demonstrated. Nonetheless, it was generally agreed that the cross-check feature of the VAT is a valuable attribute, particularly when firms believe the tax administration has the capacity (if not the intention) to perform complete cross-checking operations. This is discussed again below, under the section on computerization.

There is also a dark side to the new administrative methods offered by the VAT. Several contributing authors, including Sandford and Godwin and Kay and Davis, point out that the VAT also provides one opportunity for fraud not available in other forms of sales tax: fictitious claims for excessive credits and rebates, particularly through use of counterfeit invoices.

Rate Differentiation. The question of the best number of rates for the VAT opens up administrative complications. Although the desire for administrative simplicity calls for fewer rates, the need to provide differentiated tax treatment often arises from considerations of equity. Sandford and Godwin, Perry, and Casanegra in this volume consider the administrative and compliance implications of the use of multiple rates of VAT to enhance progressivity or reduce regressivity. There is general recognition that departures from uniform rates of VAT do engender complications and costs for the tax administration and taxpayers alike.

Zero-Rating or Exemption? Zero-rating and exemption are competing methods of tax relief under a VAT. Shoup, Gillis, Sandford and Godwin, Casanegra, and others have focused on this matter in this volume. There is virtually unanimous agreement that on administrative grounds exemption of entire firms is preferable to zero-rating, while for a particular commodity zero-rating may be easier (no tracing of inputs is needed). Zero-rating may on occasion call for tax refunds to the firm, and this may be troublesome in some countries. In any case, zero-rating is superior on economic and income distribution grounds.

The zero-rating option is best suited to those cases where it is desired to completely free a commodity or an activity from taxation (for example, exports, foodstuffs consumed primarily by low-income families). The exemption device cannot serve this purpose unless the exemption is carried all the way from the earliest stages of production to final sale. Indeed, exemption, if used with the credit method of computation, will result in higher, not lower, ratios of value added tax to final sales, unless the exemption applies to final retail sales. Each country must therefore strike a balance for itself, between these issues, in deciding between exemption and zero rating.

Small Businesses and Farmers. Due focuses on this issue here, but several others (Casanegra, Perry, and Sandford and Godwin) also devote attention to the problem. Options available to policymakers for dealing with small business firms include exempting them from tax or establishing special tax regimes for them. Due notes that while exemption of small firms is the administratively expedient option, it is often not in the interests of the enterprises. This solution, however, does provide incentives for small firms to register for the tax. Due contends that the best of all the imperfect and arbitrary criteria for delineating between taxable and exempt firms was that of sales volume.

For farmers, Due suggests that the most workable, but by no means ideal, solution is to exempt them from the registration requirement while zero-rating major farm inputs, such as fertilizer and farm equipment. His preference for this method over the use of presumptive credits for purchasers of agricultural products is echoed in this volume by Schenone, who objects to presumptive credits in Argentina because of their effect on resource allocation, rather than administration.

Border Tax Adjustments. Although an origin-based tax requires no border tax adjustments for products moving in international trade, other than valuation of imports, the contributing authors do not regard this attribute as a significant administrative advantage over taxes based on the destination principle where border tax adjustments are generally required. Shoup, Cnossen, Longo, and Poddar provide substantial focus on the issue of border-tax adjustments. They concur that any administrative burdens that may be involved in border-tax adjustments under the destination principle are easily outweighed by other advantages of destination-based taxes. Furthermore, Cnossen suggests that border tax controls are not inherent in the use of the destination principle (see below).

In general, the contributors favor the destination principle for developing countries. Some temper this view by noting that, although the destination principle

is most compatible with the consumption-type VAT, there can be no presumption that the consumption basis rather than the income basis is most compatible with the goals of all countries. As stated elsewhere, however, the income-type VAT has not been adopted by most developing countries, if for no other reasons than those related to tax administration and compliance.

Computerization. The VAT, of course, requires some degree of formal recordkeeping. This is at two levels—the taxpayer and the tax collector. In this volume Hutabarat and Lane exclusively focus on issues related to tax computerization. Casanegra and Han also examine the relative merits of computerization versus manual systems for controlling VAT compliance. Han is enthusiastic about computerization. Casanegra, in contrast, recognizes the benefits of maintaining taxpayer registers in computer files, but also advocates the use of manual systems to control compliance by large taxpayers.

Hutabarat and Lane do not attempt to make a case for any particular degree of computerization of VAT administration. Rather, they delineate the technical problems involved in implementing a computer-based tax information system and provide valuable illustrations of the sequencing of necessary decisions and actions. The principal nontechnical lesson flowing from their work is that effective use of computerization in tax reform, including reform involving a VAT, is a matter of careful planning and above all careful timing.

Implementation. How long does it take for a country to introduce a VAT once it has decided to adopt it? The short answer is longer than it seems at first instance. Hutabarat and Lane, Tait, Perry and Orozco de Triana, Han, and Casanegra all identify the importance of careful attention to implementation issues before, during, and just after installation of a value added tax.

There is also a need for establishing a realistic lead-in time between the decision to adopt the VAT and its introduction. Although Chile was able to reduce the lead-in time to a few months, there is general agreement that a lead-in time of no less than two years is essential, judging from the experiences of Belgium, Italy, Ireland, and Greece, as well as Indonesia.

Several recommendations are made in this volume for effective utilization of lead-in periods, as well as caveats on what is to be avoided in implementation of a VAT. Argentina, Korea, Colombia, Mexico, and Indonesia all engaged in substantial campaigns for taxpayer education before installation of the tax. Preparation for computerization of the VAT began in Indonesia well before the final decision to adopt the tax. The lead-in period offers an opportunity to reform taxpaying and tax collection procedures simultaneously with structural reform: filing requirements, fines and penalties, methods of taxpayer notification and of providing tax refunds, and other procedures may in this way be made supportive of improved taxpayer compliance. Furthermore, VAT implementation must not be jeopardized by overlooking such mundane yet vital needs as fashioning and publishing new tax returns and new manuals for tax officials.

Finally, the lead-in period can be employed to help reduce any economic dislocations (whether real or imaginary) that may be associated with the introduction of the tax. Tait, for example, provides a list of measures that governments may take to minimize the possibility of significant effects on the price level from introduction or alteration of the VAT.

Other Issues, Some Largely Unexplored

Economic Effects

The VAT as a Countercyclical Tool. A tax so all-encompassing and at so substantial a rate as the usual VAT might seem to be the instrument of choice, along with the income tax, to stimulate the economy in a depression and to check its upward pressure in a boom, by discretionary changes in the tax rate: down in a depression, up in a boom.

This issue received almost no attention. To be sure, countercyclical variation in tax rates is not in high favor these days, ever since the simultaneous appearance of depression and inflation some years ago. Nevertheless, the United Kingdom did use the VAT as a stabilization device once, when the standard rate was reduced from 10 percent to 8 percent.

Changing the rate periodically may force traders to alter their pricing policies, which would increase compliance costs. This increase, though important, could be more than balanced by higher revenue, if the rate change were truly capable of stimulating the economy. A greater danger, perhaps, is that consumers would engage in anticipatory buying—trying to act in advance of the rate change, buying less when a rate lowering was expected—and would thus send the economy down further. In any event the VAT's potential as a stabilization measure needs further exploration, even though other fiscal and economic policy instruments may be more effective ways to make countercyclical adjustment.

Optimal Tax Theory and the VAT. In recent years much interest has been directed in public finance to optimal tax theory, which seeks to maximize economic efficiency in the allocation of resources. This theory calls for different tax rates on different commodities;

the higher rates are imposed where elasticity is less (this is an oversimplication, but elaboration would carry us too far at this point).

There is no agreement on the applicability of this theory to the VAT, largely because not enough is known about differing elasticities. It seems unlikely that a great variety of tax rates, from one good to another, would be practicable, in view of the problem of description and enforcement. Whether the gain achieved in efficiency would be worth the added resources put into administration and compliance is the key issue.

Treatment of Farmers under the VAT. If farmers are exempt from the VAT, the tax on agricultural output may actually be increased under the tax credit system, because there will be no crediting of the tax paid on the farmers' inputs of fertilizer, farm machinery, and the like. An attempt to compensate farmers by giving a standard credit of some sort further down the line, to those who purchase from farmers, may eliminate the overtaxation. But such a scheme would leave intact the distorting influence on farmers' decisions about how much fertilizer, farm machinery, and so forth to purchase, because these decisions do not affect the amount of the downstream credit (see Shoup, this volume). Given the importance of the agricultural sector in most developing countries, this is not a trivial question. In this volume Due recommends exemption of major farm products, with zero-rating of major farm inputs; the zero-rating would allow recoupment of the taxes paid on earlier inputs. In general, however, no consensus has emerged on just how to preserve the proper incentives for farmers to allocate their expenditures for inputs.

Prospects for the Income Type of VAT. Nearly universal use of the consumption-type VAT should not preclude further thought on this choice. Opinions have ranged from decided preference for the income type for developing countries, if that type were modified, to satisfaction with the present situation. The need to compute depreciation is an important consideration, among several others (McLure 1987 and United States Department of the Treasury 1984).

One view is that in developing countries where the income tax is considered impracticable, for administrative and compliance reasons, a VAT should at least approximate the income type. Structurally, the income type calls for taxing income that is earned by exporting and for exempting income that originates abroad but is embodied in imports. But a contrary view has been expressed, which suggests that this could be disregarded, and the destination principle kept, if desired, although this would admittedly add complexities.

The issue of double taxation of savings that occurs under an income tax has not been resolved, although this is especially important for developing countries. Indeed, the issue requires further work, especially for the choice between consumption and income types of VAT for developing countries. At present, support for the income type was not at all widespread, at least for a national-level VAT. The experience of Argentina with the income type should be followed closely.

Administration

The Future of the Subtraction Method. Virtually all comprehensive VATs now in use employ the tax credit method for computing the amount of tax due: from a gross tax found by applying the VAT rate to the firm's sales, there are deducted VAT taxes shown on the purchase invoices of that firm for the same period. This has been thought to have certain advantages over the simple subtraction method, whereby the firm subtracts, from its sales, the amount it has spent for inputs purchased from other firms. McLure, however, has examined a more sophisticated version of the subtraction method that accomplishes about all that the tax credit method can do, except where the tax rates vary from stage to stage. This interesting option remains an issue for further study (see McLure 1987).

Refund Systems. Under a zero-rating regime, used in most VAT countries chiefly for relieving exports of VAT tax paid at earlier domestic stages, the tax authority must pay a tax refund to the exporter if that exporter's gross tax on domestic sales is smaller than the tax credit granted on its exports. This occasional need for a refund mechanism poses an additional burden, especially where tax administration is not highly developed. The refund demand puts financial pressure on the government and invites corruption.

Nonetheless, it can be argued that nothing will inspire more trust and confidence in the tax administration than the willingness to provide a refund, promptly, where the law clearly specifies it. The government is seen as being willing to play fair. How to strike a balance between the difficulty and desirability of making prompt refunds requires further analysis. In particular, it is not clear what could take the place of the refund. Carrying over the tax credit to apply against domestic sales in further periods may put severe financial pressure on some firms, particularly exporters with insufficient domestic business to use all credits. And failing to pay the refund will probably encourage consolidation of exporting firms with domestic market firms, so that export credits can be offset against taxes on domestic sales.

Can Border Controls Be Dispensed With? A VAT based on the destination principle, which taxes imports and exempts exports, has been thought to require border controls (to monitor imports and to be sure that the tax-free exports actually leave the country). Recent analysis indicates that border controls will not in fact be needed: the tax on imports can be captured at the point of first sale after import, and verification of exports can be done through production and transportation records. This may well prove practicable in industrial countries with strong internal revenue controls.

But would this prove practicable in developing countries? Although this interesting question has not been dealt with specifically in this volume, some have suggested that it is advisable to concentrate collection, as far as possible, at customs points, for goods in general.

In a country where the VAT is not comprehensive, but is limited to the manufacturing stage, or goes to the wholesale stage but no further, reliance on taxing the first sale after import would be inadequate, since a large proportion of imports may be made by exempt retailers or wholesalers. For a comprehensive VAT, much will depend on how effectively the wholesale and retail trades are taxed.

These administrative issues are also germane to the choice between the destination and origin principles when the VAT is levied by a state or local government or by a national government within a union that has no intraunion border controls. Such a governmental unit can tax exports, of course, by treating them the same as all other transactions, but it cannot easily exempt imports, which will be caught, unless provision is made otherwise, at the first domestic sale. Zero-rating of exports will usually be difficult as well, because the requisite documents may not always be generated by the transaction, at least for a state or locality.

Matching Invoices through Computerization. On any taxable sale from one firm to another firm, the seller's invoice will show the amount of gross VAT on that sale, and under the tax credit method that amount is available as a tax credit to subtract from the buyer's gross tax on its sales. If the seller understates the tax on a copy of the invoice it uses for its own records and overstates the tax on the copy of the invoice given to the buyer, both parties benefit (illegally) by reducing the VAT for both. If the two copies of the invoice are alike, a false statement of the tax can benefit one of the parties, but equally harms the other party. Hence a matching of the invoices—buyer's and seller's—on any particular sale is a technique for uncovering tax fraud. These invoices are of course part of the information the parties hold ready to submit to the tax authorities to support the figures in their tax returns. Complete cross-checking on a particular sale consists, as Casanegra points out, of using the invoice given to the buyer to check the amount of sale entered in the seller's tax return. If the two invoices are matched and are seen to be alike, this at least shows that falsified invoices are not being used to reduce the tax on the one except at the cost of increasing the tax on the other.

The task of matching the two invoices for any given sale is a large one indeed. As already noted in the discussion on tax evasion, the high degree of matching accomplished in Korea has stimulated considerable interest. In Indonesia cross-checking is still some distance away, despite the extensive computer system the revenue authorities have installed there. The United Kingdom uses a selective cross-checking system, not a complete one. Questions have been raised about the benefit of extensive cross-checking compared with the cost. The cost of invoice matching in Korea is indeed high, but not necessarily uneconomical, as Han describes in this volume.

Excises or Multiple Rates? For one reason or another, it may be desirable to tax certain goods at more than the standard VAT rate. At one extreme, the question becomes, Shall all these higher rates be incorporated in the VAT, thus dispensing with excise taxes completely? Alternatively, shall all of the existing excises be continued? Or shall only excises on "luxury" (income-elastic) products be incorporated in the VAT, leaving such sumptuary excises as those on alcohol and tobacco as separate taxes? This matter is part of the broader question, What is the optimal number and levels of rates under a VAT?

Opinion on these points is sharply divided. In one view, the extra administrative and compliance costs are not excessive compared with the gains, especially in equity, obtained by higher rates on luxury goods under the VAT. Another view opposes multiple rates in general, on administrative and efficiency grounds. The decision will largely depend on how strongly it emphasizes the problem of equity. In any case, if the tax credit method is used, the higher (or lower) rate can be effective only if it is levied at the retail stage.

Inclusion of Services. Although there is no disagreement on the general principle of including services, along with goods, in the VAT base, particular instances may cause difficulties. Financial services are an example: some would either exempt that sector or zero-rate it, because of the difficulty of isolating and measuring the service element. In this volume Gillis points out that the experience of industrial countries may not be applicable to developing countries, which in many cases have far more concentrated financial sectors and many more financial firms that are government owned or closely regulated.

Zero-rating is probably the best way to treat the taxation of services now, unless the tax refund problem proves too difficult. Another view is that it is possible to change part of the price of a taxable good into a charge for a financial service. If such services are nontaxable, taxes on the good may be avoided in part by coupling a low price with high-priced financing.

As this example shows, it is difficult to generalize about the feasibility of taxing services, or the necessity for doing so, and further study is needed, sector by sector. In this volume Kay and Davis examine services in general, with special attention to eleven types of service, and conclude that services should be included in the VAT base, with particular provisions for some of the more difficult cases.

Housing. If consumption of housing is regarded as consumption of a flow of services from a capital good, housing offers another special case of services to be taxed or untaxed under a VAT. The difficulty of taxing housing under a VAT led Conrad in this volume to propose a radical departure from traditional approaches. The option preferred by Conrad is that of applying the VAT to the stock of housing values rather than the flow of housing services. He argues that this would fully tax the present value of the flow of consumption services from housing. In practice the VAT would be levied on all sales of all real estate, with credits for VAT paid on real estate purchases handled in much the same way as on any other purchases by registered firms.

Several objections could be raised to this proposal. First, present methods for dealing with housing services in all VAT countries are in fact seriously defective on economic, administrative, and equity grounds. Second, a VAT on sales of real estate stocks is untried and is perhaps administratively infeasible at this time in most developing nations. Third, taxation of housing services presents quandaries that are not likely to be easily resolved in the near future, whether in industrial or developing countries. For instance, there is the problem of how to treat housing already in existence when the tax is introduced: a valuation would be difficult, and waiting for the first sale would cause a lock-in effect. Another problem is how to avoid a regressive effect from exempting housing, because the percentage of self-supplied (and hence presumably nontaxable) housing increases as we move down the income scale. Nonetheless, Conrad's novel approach is sufficiently attractive on economic, revenue, and equity grounds to merit serious exploration by scholars and tax officials alike.

Compliance Costs. A neglected topic in much tax literature is compliance costs: how much does it cost the taxpayer to comply with the tax law, quite aside from the tax itself? Sandford and Godwin have helped fill this gap, for VAT, by a sample survey in the United Kingdom. They find that the compliance cost of the taxpayer, expressed as a percentage of the tax itself, is considerably higher than the administrative costs of the government in collecting the tax. The discussion has touched on the tradeoff between administrative and compliance costs, the concept of negative net compliance costs (if the interest earned on tax collected but not yet paid to the treasury is considered a negative compliance cost), and the sampling problem. This largely unexplored field therefore awaits further fact-gathering before much progress can be made in analyzing it.

Other issues. Brief mention is here given to some additional VAT issues that are not taken up in this volume. Five items that are probably important enough to justify considerable research effort are noted here, although the first three, at least, have been well discussed in other contexts. Although they are listed under the heading of administration, because that seems to be their chief element, they raise issues of economic efficiency as well.

- *Transitional problems*. The transition from a turnover tax to a VAT raises problems of equity and economic efficiency. An example is offered by plant and equipment. A firm buying such inputs under the turnover tax and selling the resultant products under a VAT will get no credit against the VAT for the turnover tax paid. Expectation that a VAT will soon be substituted for a turnover tax may induce a firm to postpone its capital equipment program. Some VAT allowance for turnover tax on capital goods purchased within a period before the tax is introduced may be considered. Other somewhat similar situations may occur with respect to inventory build-ups, financial contracts and imports in general.
- *Used goods*. If a consumer resells a durable consumer good that he has been using, can any VAT ever be due? Perhaps the user has in some way improved the good; in that event he is not merely a consumer, and the value so added should be taxed, if administratively possible. Perhaps, with the passage of time, demand for the good has increased, and this is reflected in the price. Other equally difficult issues can be cited. The problem may not be important enough to bother about, but at present we cannot be sure of this.
- *Government services*. If a state or national government, sells something, such as use of a highway through toll charges, should those charges by subject to a VAT imposed by the national gov-

ernment? If that government is the same one that levies the VAT, is it then unnecessary to impose a VAT? Can the input taxes, if any, paid by the government, under its own VAT, be easily traced, and should they be creditable? What of government services that are supplied free of direct charge—could a value somehow be inputed to them, and a tax collected on that value? For instance, New Zealand has recently succeeded in putting all government services under the VAT base. These, and collateral issues, need at least a preliminary examination.

- *Not-for-profit activities.* Organizations that are philanthropic and those that also purposely do not generate profits nonetheless buy inputs that may carry a VAT loading. Is a tax refund then in order? What if the organization engages in sales that are normally taxable under the VAT?
- *Tax-exclusive, tax-inclusive rates.* The necessarily indeterminate discussion accorded to the problem of choosing between these two types of tax rate needs to be systematically reviewed and the pros and cons listed clearly, with the supportive reasoning (see Shoup, this volume). We may suppose that the decision on this score is being made without sufficient analysis of all the issues involved, even though some of the issues may be minor compared with those treated in the preceding sections here.

Income Distribution

Ascertaining the Impact of a VAT. McLure demonstrates here the great difficulties in ascertaining how the burden of the VAT is distributed by income classes. There is no question, however, that a comprehensive VAT with no exemptions or zero-rating at all (save on exports) rests in part on the lowest-income consumers. Attention is therefore devoted to techniques of removing from the tax base certain consumption items, notably foodstuffs, that play a larger role in the budgets of the poor than in those of the rich.

Reducing the Burden on Low-Income Consumers. Under zero-rating a zero rate of tax is applied to sales of a selected commodity or to all sales of a certain business firm. The firm is allowed to subtract the VATs shown on all its purchase invoices. If the net result is a negative tax, a cash payment must be made by the treasury to the taxpayer (a tax refund). Under simple exemption, as it is usually practiced, the sale of the good or the sales of the firm are exempted, but no attempt is made to allow for or refund the VAT amounts that have already been collected at earlier stages. Clearly, the zero-rating technique is better for low-income consumers (assuming that the benefits will be passed on to them in lower prices) than the exemption technique, but the advisability of making tax refunds has been seriously questioned (as already noted above).

In place of exemption or zero-rating, the commodity in question could be given a rate below the standard rate of the VAT. This issue of multiple rates, too, has been noted above. One problem here is that, once this road is taken, more than one nonstandard rate may be selected in a zealous effort to refine the distribution of the VAT burden as much as possible. There is difference of opinion with respect to the number of nonstandard rates that could reasonably be adopted.

If no tax relief to the poor is granted under a VAT, the burden on them might be offset by using the extra VAT revenue that derives from taxing necessities consumed by the poor to supply them with additional transfer payments or free government services. This solution also is far from receiving unanimous support, largely because of the greater difficulty in developing countries, compared with high-income countries, of using transfer payments to alleviate poverty.

Economic Efficiency in Exempting Necessities. "Productive" consumption is the part of total consumption that, if reduced, will result in some reduction in output, owing to enfeeblement of the workers who had been consuming that part. A VAT will therefore force a reduction in total output if it induces low-income workers to cut back on consumption that is productive. A tax restricted to high-income consumers would not have this effect.

The tax might even force a reduction in "gainful" consumption, defined as the part of productive consumption that, if reduced, will result in a reduction of output even greater than the reduction in consumption, owing to the enfeeblement of workers engaged in producing that part. Accordingly, equity considerations are not the only reasons for exempting, zero-rating, or granting low tax rates to at least some of the goods and services consumed by the poor.

Summary: Toward a Suitable VAT

This chapter began with the presumption that the lessons for developing countries can be pertinent to those developing countries seeking to reform their tax systems by adopting a VAT. These lessons may also be helpful for those that already have a form of VAT in place but wish to expand its base and improve its coverage. This final section deals with this possibility briefly

and summarizes some salient aspects of the differences in application among countries. In providing some guide to these issues, we attempt to answer the questions, Why the VAT and not another tax? and What kind of VAT is likely to be adopted, given the different starting points of most countries.

Why the VAT?

The value added tax has been applied ever more widely because it avoids some of the negative features of other forms of taxation, particularly the turnover ("cascade") tax. The turnover tax strikes the full sales value without any allowance for the same tax already levied at earlier stages in the production and distribution process. Thus, the value added at the manufacturing stage is taxed again at the wholesale stage and again at the retail stage. This feature of the turnover tax induces vertical integration of business enterprises: the manufacturer may absorb the wholesaler and the retailer (or vice versa) to avoid cumulative tax.

The VAT, in contrast, taxes each stage of value added only once, at the stage where it is added. Another advantage of the VAT over the turnover tax is the VAT's neutrality insofar as production efficiency is concerned: it taxes productive inputs equally and does not promote distortion of production choices. Moreover, the consumption type of VAT does not distort the choice between consuming now and consuming later, in favor of the former, as does the income tax. In this way the VAT does not penalize, as does the income tax, capital accumulation and economic growth. The larger is the base of the VAT with only a single rate and a minimum of exemptions—the status of a near perfect VAT—the more important will these superior attributes of the VAT be.

Two possible substitutes for the VAT, insofar as the taxation of consumption is concerned, are the retail sales tax and the expenditure tax. The latter is collected directly from the consumer, like the personal income tax. It has not been successfully implemented in developing countries and has not been tried elsewhere. Experimentation with the expenditure tax in developing countries, in particular in Sri Lanka and India about three decades ago, ended in failure.

The retail sales tax is a single-stage tax collected at the point of final sale. If there are not other intermediate sales taxes and if it applies to all items sold to consumers (but not to business firms) it is equivalent to a comprehensive value added tax, that is, a VAT down through the retail level, collected at many stages. Such a retail sales tax has of course that same revenue yield as a comprehensive value added tax. In practice the retail sales tax probably falls short of the VAT in ensuring neutrality, because the retail sales tax cannot in fact ensure that no business inputs will be taxed. The retail sales tax has the same feature of not taxing exports, while taxing imports (according to the destination principle). But it would not require quite as complex an administrative mechanism for collection as the VAT.

Some proponents of the VAT assert that more revenue is likely to be lost through evasion under a retail sales tax than under a VAT. This assertion has to be qualified carefully. It is true if the evasion takes the form of the firm's not registering, thereby reporting no taxable retail sales. Under a VAT, the government still retains the tax collected at the preretail stages on value added at those stages. But if the evasion at retail takes the form merely of understating taxable sales instead of failing to report them at all (that is, failing to register for the VAT), the tax loss under the VAT is the tax rate times the amount of understatement of retail sales, just as with the retail sales tax. If the understatement is so great that the gross VAT tax on sales becomes less than the tax credits for VAT on inputs—an unlikely case—and if the tax administration thereupon denies refunds of excess tax credits, then the retailer gains nothing from further understatement of sales. What it gains in reduction of gross tax on sales is offset by loss of credit for VAT shown on purchase invoices.

The process of tax reform often involves the need to replace a set of ineffective taxes (defined as not providing sufficient revenues or being prejudicial to efficient allocation of resources or to attainment of special objectives, or a combination of these) with a more effective tax. In some countries the VAT would represent an attractive substitute, as in Korea when several sales taxes were replaced by the VAT. Since the VAT requires a substantial minimum of preparatory work and investment in the administrative machinery to make it work, it is not suitable as a low rate tax. For a comprehensive VAT a rate of perhaps 7 percent or slightly less (as discussed above) would be required to make the VAT worthwhile.

In most developing countries that have adopted a VAT, the ratio of collections to GDP has increased over time. This contrasts with the VAT in industrial countries, in which rates have tended to be relatively high and collections as a percentage of GDP have leveled off.

What Kind of VAT and at What Stage?

The broadest VAT extends through the retail level, with no exemptions. From a production viewpoint, the neutral VAT contains only a single rate of tax. No country has achieved, or will attempt to adopt, such a perfectly broad and neutral VAT. Concern for other social, economic, and administrative objectives will require deviations from this simple structure. The need to re-

duce regressivity in the structure of the tax for reasons of equity in income distribution leads to pressures to include zero-rating for some essentials and for goods designed for some special groups and to have higher than the standard tax rates for other goods that are considered nonessentials or luxuries. In developing countries the question of introducing more than one rate of VAT will be determined by the extent of commitment to certain social and economic policies, but the major constraint is to fit the tax to the limited administrative capacity of the country in question. Among developing countries there are differences in tax administrative capacity that correlate somewhat with difference in per capita GDP. The comprehensive VAT has been successfully adopted mainly in middle-income and upper-middle-income developing countries.

Among the developing countries the option of introducing the VAT at the preretail stage, that is, at the manufacturing or the wholesale level, is a real one. This is especially so where the tax administration requires further experience in collecting a relatively complicated tax or where standards of tax compliance are relatively low. Previous experience, or some history with other forms of taxes that require some degree of accounting and recordkeeping, may provide the necessary experience to build upon. Thus, a decision to adopt a less than comprehensive VAT may be viewed as the first step in building for a more comprehensive VAT in the future.

VAT-like taxes, in which some elements of the value added technique are employed, are found in some developing countries, particularly in Africa. These precursors to a VAT provide experience useful in a later shift to a VAT. The Philippines had VAT-like elements in its manufacturers' sales tax for decades. The sales tax in Pakistan contains many features of value added taxes in other developing countries, including a limited use of tax credits for some imported materials. The recent adoption of a "modified" VAT in India and the imposition of a tax employing the value added technique for a few industries in China are examples of very limited preretail VATs.

A logical next step in the evolution of a manufacturers' VAT toward a comprehensive levy would seem to be the wholesale VAT. But some have argued that the superiority of a wholesale tax over a manufacturers' tax is so limited that it would be advisable to wait until the country is able to collect a truly comprehensive VAT, once experience has allowed it to gain sufficient capacity to administer the more complex VAT.

On the basis of current experience, the type of VAT most likely to be adopted by developing countries during the remainder of this century will involve a fairly typical configuration. Countries will tend to opt for a consumption-type VAT, imposed on the destination principle and using the tax credit method of collection. The choice between the comprehensive VAT and preretail forms will be made according to realities of tax administration and compliance in each country, as will the choice between zero-rating and exemptions for hard-to-tax sectors. Furthermore, for these future value added taxes, as for the present VATs, considerations of income distribution are likely to dominate those of tax administration and tax neutrality in the choice of number of VAT rates.

Notes

1. The various definitions of these technical terms are found in this volume in Shoup, for instance. The "consumption" type VAT taxes only consumption goods and therefore excludes capital goods. An alternative is the "income" type of VAT, which has for its base all types of income, including capital income. The "destination-principle" VAT taxes value added, at home or abroad, of goods that have as their final destination the consumers of that country. In this case exports are exempt, but imports are taxed. In contrast to this is the "origin-principle" VAT, which taxes the value added that originates within the country. In this case exports are taxable, but imports are exempt. The origin principle is compatible with the income type of VAT but not with the consumption type, and the destination principle is compatible with the consumption type of VAT but not with the income type.

2. For example, in Indonesia just before the enactment of the VAT in April 1985, the press was full of reports and studies maintaining that the introduction of a 10 percent rate of VAT at the manufacturing level would result in an increase of ten percentage points in the rate of inflation. In fact, price indexes for consumer products *fell* slightly in the first few weeks after adoption of the tax, and domestic inflation for the subsequent year was well below that for the previous year.

3. One of the earliest comprehensive discussions of the economic advantages of retail taxation may be found in Due (1957). The arguments offered by Due have proven extremely durable after three decades. For recent analyses, see Gillis (1985) and McLure (1987).

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THE WORLD BANK

In recent years the value added tax (VAT) has come into wide favor as a desirable tax vehicle in developing countries. During national tax reforms the VAT has often been adopted to replace more complicated sets of taxes on the sale of commodities and services.

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This volume contains nineteen papers from that conference; they are organized under four themes: general issues on the VAT, lessons from the experience of the developed countries, lessons from the experience of developing countries, and administrative issues and implementation of a VAT. Researchers and policymakers can thus gauge the direct relevance of a VAT to developing countries with different levels of administrative capacity. The collection should help foster improved taxation and efficient allocation of resources in developing countries.

Malcolm Gillis is Professor of Public Policy and of Economics at Duke University, Carl S. Shoup is McVickar Professor Emeritus of Political Economy at Columbia University, and Gerardo P. Sicat is Economic Adviser with the Economic Advisory Staff of the World Bank.

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