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DIRECTIONS IN DEVELOPMENT

Tax Expenditures—Shedding Light on Government Spending through the Tax System

Lessons from Developed and Transition Economies

HANA POLACKOVA BRIXI, CHRISTIAN M.A. VALENDUC, ZHICHENG LI SWIFT, EDITORS

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Edited by Hana Polackova Brixi, Christian M.A. Valenduc, and Zhicheng Li Swift

THE WORLD BANK
Washington, D.C.

1818 H Street, NW
Washington, DC 20433
Telephone 202-473-1000
Internet www.worldbank.org
E-mail feedback@worldbank.org

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Foreword

Governments throughout the world use tax expenditure, in the form of revenue forgone, as a policy instrument to promote economic growth and social development. However, proper use and good administration of tax expenditure policy has become a challenge to governments when the revenue lost is not reported and the cost and benefit of this policy are not evaluated because of the lack of tax expenditure reporting.

Complicating the issue are scant published literature and little comparative country experience. To learn about the experience and practice of industrial countries in managing tax expenditures, the Ministry of Finance of China held an International Forum on Tax Expenditures in Weifang, China, in December 2002.

Invitees to the forum included experts from the World Bank and the International Monetary Fund, as well as experts from Australia, Belgium, Canada, and the Netherlands. Those experts joined with Chinese experts to discuss and share knowledge on tax expenditures. The papers presented to the forum provide an overview of the experiences and the current practices of the industrial countries cited above and of the United States. Some of the participants focused on country experience in defining a benchmark tax system and the corresponding tax expenditure, while others concentrated on estimation and evaluation methods, including cost–benefit analysis. The effect of tax expenditure analysis on the formulation of tax policy, as well as the trade-off with direct spending programs, was also investigated. All these presentations were very valuable.

In collaboration with the World Bank, the Tax Policy Department of the Chinese Ministry of Finance agreed to support the publication of these papers to make more widely available this valuable country knowledge and experience in dealing with tax expenditures.

Currently, the Chinese Ministry of Finance is in the process of establishing a suitable tax expenditure system and compiling a tax expenditure report. We look forward to sharing our experience in meeting this challenge with other countries in the future. In this regard, we dedicate our efforts to advancing world progress in achieving sound fiscal policies and systems that will lead to a world free of poverty.

Zhen Ming Zhu
Director-General
Tax Policy Department
Ministry of Finance, China

Preface

In many countries, part of government fiscal activity may go unnoticed because it is hidden in the form of revenue forgone and does not appear explicitly as spending. Such activity is known as a *tax expenditure*. Tax expenditures take many forms—from tax exemptions to tax credits—and are generally aimed at supporting targeted sectors, firms, or individuals. If used properly, tax expenditures can play an important role in implementing government policy priorities. For example, a number of well-regarded programs for the poor take the form of tax expenditures. However, the assessment of tax expenditure policies and programs is often complicated by inadequate reporting and accounting practices, particularly in developing and transition countries. This lack of scrutiny is in stark contrast to the scrutiny generally applied to the spending side of government finances. In these situations, it is difficult, if not impossible, to evaluate the cost, efficiency, and equity impact of tax expenditures and the extent to which resources could be rationalized or better allocated to strengthen government finances and to support progress toward broader economic and social objectives.

Against this background, the Chinese Ministry of Finance took the initiative of hosting an international conference to discuss country experiences with tax expenditures and ways of dealing with them. The World Bank is pleased to sponsor the publication of this book on tax expenditures based on papers prepared for the conference, as well as on other inputs. Through the book, we hope to share the insights more widely. Drawing on the expertise of government officials from both developing and industrial countries, academic scholars, and staff members from the World Bank and International Monetary Fund, this book should be a valuable addition to the global knowledge bank on fiscal risk and sustainability issues—an agenda that the World Bank is pursuing actively through its Economic Policy Unit and Quality of Fiscal Adjustment Thematic Group, within the Poverty Reduction and Economic Management Network. We would like to extend a special acknowledgment to Christian Valenduc of the Ministry of Finance of Belgium, who devoted his personal time to provide invaluable advice and contributions to this publication.

The book includes a discussion of general conceptual and methodological issues relating to tax expenditures as well as a framework for evaluating costs and benefits of tax expenditures, an overview of practices in a group of member countries of the Organisation for Economic Co-operation and Development (OECD), and a number of case studies from both industrial

countries and transition economies. Chapter 1 provides an overview of the general concept of tax expenditures and country practices. It compares the purpose and use, methodology, frequency, and coverage of tax expenditure reports for ten OECD countries and briefly describes how reporting is linked to the budget process. Chapter 2 introduces a framework for evaluating tax expenditure policies as applied successfully in Canada. Chapters 3 through 7 present experiences from these selected OECD countries: Australia, Belgium, Canada, the Netherlands, and the United States. Each of these chapters presents country experience in defining tax expenditures as well as the corresponding benchmark tax system. In addition, some chapters investigate specific topics. Chapter 5 (on Canada) concentrates on estimation and evaluation methods, including detailed descriptions of the estimation models used and the cost–benefit evaluation methods for policy assessment. Chapters 3 and 7 (on Belgium and the United States) look at how an analysis of tax expenditure can contribute to the tax policy debate and shed light on trade-offs with direct spending programs. Chapter 6 highlights the history of the tax expenditure debate in the Netherlands and recent experience in budgeting the cost of tax expenditures. The book also includes analyses of the recent experiences of two transition economies, China (chapters 8 and 9) and Poland (chapter 10), which illustrate the consequences of implementing tax expenditure policies without adequate reporting and accounting. In particular, chapter 8 analyzes in detail China's experience in dealing with tax expenditure issues and discusses its plans for improving transparency in this area. Based on the experiences presented in the book, chapter 11 draws policy options for governments to consider in dealing with tax expenditures.

The international discussion of the effects of tax expenditure policies continues, and it should be acknowledged that there is no single best-practice approach for dealing with tax expenditures. However, important lessons have emerged from the experience of both developing and industrial economies. This book points the way forward by setting out general principles of sound fiscal management of tax expenditures and by providing specific examples of innovative country practices.

It is our hope that this book will be a valuable resource for both government practitioners and other development partners in advancing work in the interests of greater fiscal transparency, financial stability, and, ultimately, progress on the broader economic and social development agenda.

Yaw Ansu
Director, Economic Policy
Poverty Reduction and
Economic Management
World Bank

Thomas Blatt Laursen
Leader, Quality of Fiscal
Adjustment Thematic Group
Poverty Reduction and
Economic Management
World Bank

The Editors and Authors

The Editors

Hana Polackova Brixi is a senior economist based at present in World Bank Resident Mission China. She manages World Bank projects and analytical work in the areas of country economics, regional development, and public finance. Since 1998, Ms. Brixi has led the World Bank's research on government fiscal risks and served as chair of the World Bank Quality of Fiscal Adjustment Thematic Group.

Christian Valenduc is a senior adviser at the Studies Department of the Belgian federal Ministry of Finance. He chairs the Organisation for Economic Co-operation and Development's working group on tax statistics and tax policy analysis. He also is a lecturer at the universities of Mons, Fucam, and Louvain-La-Neuve in Belgium.

Zhicheng Li Swift is an economist in the Europe and Central Asia Poverty Reduction and Economic Department of the World Bank. She coauthored two major papers related to tax expenditure policy issues: a PREMNote and a World Bank policy research working paper on Poland, which is included in this book.

The Authors

Colin Brown is a manager in the Costing and Quantitative Analysis Unit of the Tax Analysis Division at the Treasury of Australia.

Carlos B. Cavalcanti is a lead economist in the Africa Poverty Reduction and Economic Management Department at the World Bank.

Kees den Boogert is an adviser at the Tax Policy Directorate of the Ministry of Finance of the Netherlands.

Simon Gurr is a tax policy officer in the Quantitative Analysis Section at the Tax Policy Branch of the Canadian Department of Finance.

Amir Haberham is a senior adviser at the Tax Policy Directorate of the Ministry of Finance of the Netherlands.

Gordon J. Lenjosek is a senior tax policy officer in the Evaluation and Research Section at the Tax Policy Branch of the Canadian Department of Finance.

Guoqiang Ma is a professor at the Dong Bei University of Finance and Economics in China.

Marc Seguin is chief of the Quantitative Analysis Section at the Tax Policy Branch of the Canadian Department of Finance.

Yaobin Shi is deputy director-general of the Tax Policy Department of the Ministry of Finance in China.

Emil Sunley is assistant director of the Fiscal Affairs Department of the International Monetary Fund.

Leo van den Ende is head of the Tax Analysis Division at the Tax Policy Directorate of the Ministry of Finance of the Netherlands.

Acronyms and Abbreviations

ATER	Annual Tax Expenditure Report
CCRA	Canada Customs and Revenue Agency
CEFM	Canadian economic and fiscal model
CFC	controlled foreign corporation
CGE	computable general-equilibrium
CGT	capital gains tax
CIT	Corporate Income Tax (Division)
CMHC	Canada Mortgage and Housing Corporation
CSF	corporate sample file
EI	employment insurance
ETM	economic transaction method
EU	European Union
FBT	fringe benefits tax
FIF	foreign investment fund
FMD	farm management deposit
GDP	gross domestic product
GST	goods and services tax
HUD	Department of Housing and Urban Development
IFA	International Fiscal Association
I–O	input–output
ITR	implicit tax rate
NIPA	national income and product accounts
OECD	Organisation for Economic Co-operation and Development
PIT	Personal Income Tax (Division)
R&D	research and development
RRSP	registered retirement savings plan
SHS	Schanz-Haig-Simons
SNA	System of National Accounts
SMEs	small and medium-size enterprises
TES	Tax Expenditures Statement
TLM	tax liability method
VAT	value added tax
WTO	World Trade Organization

1
Tax Expenditures: General Concept, Measurement, and Overview of Country Practices

Zhicheng Li Swift, Hana Polackova Brixi, and Christian Valenduc

Recently developing countries have focused attention on the usefulness of tax expenditures' in shaping prudent and transparent fiscal policy. In adopting a market economy, developing countries commonly use tax expenditures as major fiscal policy instruments. However, with limited theoretical understanding of, and ad hoc experience with, applying tax expenditures, developing countries now confront not only revenue losses higher than they had anticipated but also the erosion of their tax bases in systems that generally have been in existence fewer than 10 years.

Fortunately, the experience and practice of developed countries offer insights into understanding and applying tax expenditures. Most developed countries have established tax reporting systems, which provide empirical information on their tax expenditures. Such tax reporting systems tend to be part of a country's overall fiscal system for strengthening government finance and contribute significantly to fiscal transparency. Using the information available, several governments attempt to analyze the cost and economic effects of individual tax expenditures. Some governments even bring tax expenditures into the budgetary process and subject them to a level of scrutiny similar to that for direct expenditures.

This book contains several papers on how both developed and transition economies define and apply tax expenditure systems. The developed countries—Australia, Belgium, Canada, the Netherlands, and the United States—have established tax expenditure accounting and, in varying degress, brought tax expenditures into budgetary process. The experience of China and Poland shed light on why it is important for developing and transition economies to ensure fiscal transparency and to perform systematic fiscal analysis when implementing tax expenditures, as well as how to address these issues in relatively new tax systems.

We do not provide international comparisons of the magnitude of tax expenditures, in part because countries use different benchmark tax sys-

tems and data are not comparable. Moreover, there is no agreement on the definition of the benchmark tax system and, consequently, on which provisions are considered tax expenditures and which are benchmark provisions.

This chapter highlights the main conceptual issues relating to tax expenditures. The first section briefly discusses the distinctions between tax expenditures, contingent liabilities, and direct spending. Then the general concept of tax expenditures is reviewed, including definitional differences, tax expenditure reporting, and estimation methods. Finally, a brief comparison of tax expenditure reporting is made among 10 Organisation for Economic Co-operation and Development (OECD) countries.

Tax Expenditures, Contingent Liabilities, and Direct Spending

The main objective of a tax system should be to raise revenue to finance public outlays in the most efficient way as well as to ensure a fair distribution of the tax burden. Governments, however, frequently use the tax system to promote specific policies. This practice results in tax expenditures.

Although governments generally rely on direct spending to finance their policies, tax expenditures are a common channel for financing government policies outside the budgetary framework. Contingent liabilities are another common channel for such "hidden" spending that tends to arise from a government's explicit and implicit promises of financial support.[1]

Direct spending is more transparent than any other instrument. Any government outlay has to be approved by the country's legislature. The cost, allocative efficiency, and operational efficiency of government spending programs and related policies are thus subjected to scrutiny that tends to be detailed and in many countries open to the public before the government spending budget is approved. To promote aggregate fiscal discipline, government agencies tend to be accountable for implementing their spending budgets within their given ceilings and for delivering certain outputs and results for money spent.

The use of tax expenditures does not provide the same assurances. Tax expenditures are seldom exposed to extensive analysis and scrutiny. Their true fiscal cost is hidden as revenue forgone. Revenue forgone, even if analyzed, is sometimes difficult to estimate. Similarly, considerations of the allocative and operational efficiency of tax expenditures are rarely required in the decisionmaking process. Even if most developed countries have implemented tax expenditure reporting, the gap between the level of scrutiny and transparency of tax expenditures compared with direct spending remains wide. Unless, however, tax expenditures are exposed to adequate scrutiny, they may invite fiscal opportunism.

Contingent liabilities are similar to tax expenditures in that they represent instruments of fiscal policy requiring no cash spending at the time of their issuance. Contingent liabilities show their fiscal costs only later, in the form of sudden claims on the government budget. As with tax expenditures, contingent liabilities have been known to provide politicians with an opportunity to implement various initiatives without submitting them to the level of competition applied to budgetary expenditures and without revealing their future possible fiscal costs. Contingent liabilities thus raise concerns about transparency and appropriate use similar to the concerns that tax expenditures raise.

General Concept

Definitional Differences

In broad terms, tax expenditures are concessions that fall outside a tax norm or benchmark. The tax norm includes the rate structure, accounting conventions, deductibility of compulsory payments, provisions to facilitate tax administration, and international fiscal obligations. Tax expenditures may take a number of forms: exemptions, allowances, credits, preferential tax rates, tax deferrals, and so forth. Tax expenditure reporting measures the revenue that these deviations impart from the tax norm (OECD 1996).

In practice, tax norms are defined differently across countries, making it difficult to make comparisons. For example, country A may regard a tax allowance as tax expenditure, whereas country B may define the same item as a tax norm. In addition, some items could be on the borderline between tax expenditure and tax norm.

Positive and Negative Aspects of Tax Expenditures

When tax expenditures are used as policy instruments to achieve certain social and economic goals or to substitute for direct government financial assistance (such as grants, loans, and guarantees), both their positive and negative aspects should be carefully considered.

The positive aspects of tax expenditures include

- Encouraging private sector participation in economic and social programs where government plays a main role
- Promoting private decisionmaking rather than government decisionmaking
- Reducing the need for close government supervision of such spending

For example, in the area of social protection, U.S. regulatory mandates and tax incentives have been designed to prompt the private sector to

provide health care coverage, thus lessening the government's role in that area.

Recent OECD work on net social expenditures illustrates the magnitude of mandatory benefits and tax incentives. In 1997, direct spending for social protection amounted to 15.8 percent of gross domestic product (GDP) in the United States, which is the lowest among the 10 countries compared in table 1.1. Its net public spending (which is gross public expenditure adjusted by netting the associated tax burden and adding the estimated tax expenditures) was just 15 percent of GDP. However, because U.S. government spending was supplemented by voluntary private sector contributions of 8.4 percent of GDP (the highest of the countries shown in table 1.1), total social expenditure reached 23.4 percent.

These percentages suggest that U.S. regulatory mandates and tax incentives have been successful in encouraging the private sector to contribute to social programs. However, the positive aspects of tax expenditures cannot be achieved without additional measures. In most cases, government regulation and the capacity of tax administration are catalysts. The U.S.

Table 1.1. Total Social Expenditures among 10 OECD Countries, 1997

Country	*Total*[a]	*Net public social expenditure*[b]	*Private social expenditures*		*Gross public social expenditure*[c]
			Mandatory	*Voluntary*	
Australia	21.9	17.6	1.2	3.4	18.7
Austria	24.6	23.0	0.9	0.9	28.5
Belgium	28.5	25.8	1.7	1.0	30.4
Canada	21.8	17.8	0.0	4.8	20.7
Denmark	27.5	26.7	0.4	1.1	35.9
Germany	28.8	25.5	1.3	1.1	29.2
Italy	25.3	24.1	1.5	0.1	29.4
Netherlands	24.0	20.2	0.8	4.7	27.1
United Kingdom	24.6	21.1	0.4	3.8	23.8
United States	23.4	15.0	0.4	8.4	15.8

Source: Adema 2001.

a. The total is a consolidated figure and may be less than the sum of the components.

b. Net public social expenditure is calculated as gross public social expenditure less direct taxes and social security contributions levied on social transfers and benefits income claimed back through taxes on consumption, plus tax breaks for social purposes.

c. Gross public social expenditure covers memorandum items such as sickness, services for the elderly and people with disabilities, survivors' pensions, family cash benefits, family services, active labor market programs, unemployment benefits, health care expenditure, and housing benefits.

case also illustrates that the existing required regulations and tax administration have played a role in achieving this result.

Most of the negative aspects of tax expenditures are related to their potential ineffectiveness, inefficiency, and inequity as follows:

- Ineffectiveness. Some tax expenditures are insufficient to override underlying economic forces or are offset by other domestic or foreign tax provisions (World Bank 2001).
- Inefficiency. Many tax expenditure schemes are a response to various interest groups rather than to actual needs. Such tax expenditure schemes would result in loss of efficiency by favoring some sectors and projects but not others, thus altering the relative profitability of projects and weakening overall investment (World Bank 2001).
- Inequity. Tax expenditure schemes tend to be regressive in modifying tax burdens across taxpayers, both vertically and horizontally. In particular, nonrefundable tax expenditure schemes, which most governments have applied, exclude nontaxpayers—who are among the poorest groups in society—from receiving benefits.

Other negative aspects include

- Eroding revenue bases, which limits the scope for tax rate reductions.
- Providing open-ended government spending, which makes it more difficult to estimate tax revenues.
- Adding complexity to tax laws, increasing the cost of enforcing them, and facilitating rent seeking.
- Making the size of government elusive. Because tax expenditures are often substitutes for direct spending, simply pursuing the objectives of direct spending programs through tax expenditures could reduce the apparent size of government.

Negative effects are plentiful. Because tax incentives greatly erode tax bases, Argentina, Brazil, Colombia, Indonesia, Jamaica, and Mexico had to undertake tax reforms in the 1980s and limit promotional incentives to broaden their tax bases. Base broadening is also a common characteristic of many tax reforms in OECD countries (for example, see OECD 2001c).

Neutrality versus Incentives

It is usually argued that the tax system should be kept neutral while it raises revenue through the principles of equity, efficiency, and effectiveness (for example, see OECD 2001c). Neutral tax systems have a broad base, no tax expenditures, and uniform taxation. For example, the tax system would be neutral in the choice between the use of labor and capital

as production factors, the choice between equity and debt for financing investment, the location decision of firms, and the allocation of household savings among assets. In this optimal situation of tax system neutrality, resources are allocated according to relative prices and under perfect competition. The best example of a neutral tax system in OECD countries is New Zealand (OECD 2001b). If a government chooses to pursue neutrality in its tax system, it will eschew tax expenditures.

Tax Expenditure Reporting

Tax expenditure reporting is used in developing countries for fiscal transparency and for efficient resource allocation. Tax expenditure reports consist of several main elements, such as descriptions of tax norms, tax bases, taxable units, tax rate schedules, tax period, and tax expenditure estimates, which may cover a 7-year period. Such reports also may state their purpose, legal requirements, rationale, assessment, and similar aspects.

There is no internationally consistent format for tax expenditure reports. Some reports provide more background and analytical information than others. For example, the U.S. Tax Expenditure Report, which is prepared by the Congressional Research Service, includes descriptions of tax norms, estimates of the revenue cost of tax expenditures, legal authorizations, descriptions of tax provisions and tax effects, rationales at the time of adoption, assessments, and bibliographic citations. The section describing tax effects includes quantitative data on the distribution of tax expenditures across income classes where relevant and where data are available. The rationale section contains details about the historical development of each provision. The assessment section summarizes major issues surrounding the tax expenditures. The bibliographic section is a starting point for further research.

The classifications in tax expenditure reports vary from country to country, depending on the needs of policymakers and data availability. Commonly used classifications include budgetary function, industry, region, type of taxes, beneficiary, and purpose of tax expenditure. The Belgian report on tax expenditures classifies them by taxes and budgetary function. Most countries classify budgetary function because doing so makes comparisons between spending and tax expenditures clearer.

Most countries produce annual tax expenditure reports. Some countries publish them once every 2 years or sporadically, according to the needs and capacity of the country.

In addition, some governments are required by law to produce tax expenditure reports. Other governments lack such requirements but choose to do so anyway. The relationship between tax expenditure

reports and other official financial documents also varies among countries. Some include tax expenditure reports as a part of budgetary documentation, but others do not.

A few countries try to set the budget ceiling for spending by means of tax expenditures. These countries use this process to bring spending constraints not only on direct expenditure but also on government spending through tax systems. But not many countries have done so.

Finally, several countries have tried to bring tax expenditures into their government budgetary framework. These countries tend to bind tax expenditures (and contingent liabilities) under the same type of cost ceilings as direct spending. They include tax expenditures in their fiscal analyses, looking at the possible effects of individual tax expenditure programs on future revenues. In the decisionmaking process, countries most advanced in the treatment of tax expenditures also raise the questions of efficiency and equity: Is the proposed tax expenditure program efficient in accomplishing its stated policy priorities? What would be its effect on the distribution of income and wealth in society?

Estimation Methodology

Revenue Forgone, Revenue Gain, and Outlay Equivalent Methods

The costs of tax expenditures are estimated, on either a cash or accrual basis, by three approaches: revenue forgone, revenue gain, and outlay equivalent. The measurements are the main components of a tax expenditure report.

The *revenue forgone method* is an ex post calculation of the loss in revenue incurred by government. It does not take into account taxpayers' behavioral responses. Thus, for example, the cost of a tax credit is simply the amount of the tax credit. Accordingly, the cost of a tax allowance considered as tax expenditure will be the product of the total deduction and the marginal tax rate.

The *revenue gain method* is an ex ante calculation of the additional revenue that would accrue from repealing tax expenditures. Taxpayers' behavioral responses are included. Implementing this method requires a good understanding of taxpayer behavior and data on the critical elasticities. For example, the value added tax (VAT) rate—normally 21 percent—may be reduced to 12 percent on new housing construction. In applying the revenue gain method, we have to consider that 9 percent of the wholesales would have taken place even if the reduced VAT rate had not been introduced. Such estimation is not an easy task.

The third approach is the *outlay equivalent method*. It calculates the outlay that would have resulted in a similar gain for the taxpayer as the considered tax expenditure. For example, perhaps the tax code permits a 150

percent deduction of current research and development expenses, and the corporate income tax rate is 40 percent. The net effect for the corporation is an additional deduction of 50 percent of its current research and development expense. If both the corporate income and current research and development expense are 100, the tax liability is thus lowered by 20. This is the net effect for the taxpayer and equals the cost of the tax expenditure based on the revenue forgone method. The equivalent outlay is 20 if grants are not subject to corporate income tax but increases to $20/(1 - 0.4) = 33.33$ if grants are taxable.[2]

The effect of tax expenditures can also include deferring tax revenue, which is typically the case for depreciation rules that depart from accounting principles. Some countries use a present value approach that computes the revenue effect of such tax expenditures over the whole depreciation period. More generally, the present value approach is used to estimate tax deferral, as it is similar to a government loan with a zero interest rate.

Microsimulation Model and Tax Statistics

The revenue effect of tax expenditures can be estimated by using microsimulation models or by relying on detailed tax statistics. Microsimulation models are used to estimate tax expenditures if full data for estimating the cost of tax expenditures are not available. Such models consist of a set of algorithms and a database. The algorithms, built into software, calculate the cost of tax expenditures on the basis of tax data of a sample of taxpayers in economic and institutional settings. Tax data are available from a tax database, which consists of data from taxpayers' returns. These models are mostly used because the available tax data are not sufficient at the time of calculation. They are usually used in estimating the cost of tax expenditures for projections over several years.

Tax Expenditure Reports among OECD Countries

Developed countries have a relatively long history of compiling tax expenditure reports. The concept of tax expenditures was adopted in these countries in the 1960s and 1970s, with compiling tax expenditure reports occurring at different intervals in these countries.

A comparison of 10 OECD countries' tax expenditure reports illustrates the differences among them and can provide guidance for other countries that are considering adopting the tax expenditure report concept. First, we will compare tax expenditure reports with respect to purpose and usage, legal obligations, relationship to the budget, frequency, and method of estimation; then we will compare the definitions used in tax expenditure reports, the items included, the types of taxes and levels of government covered, and the classifications.

Purpose and Usage, Legal Obligations, Relationship to the Budget, Frequency, and Method of Estimation

Purpose and Usage

Tax expenditure reports generally have the same purposes in all 10 OECD countries: to facilitate budget consultation for better allocatiing resources efficiency and to analyze the effect of tax expenditure schemes in the tax system. In addition, tax expenditure reporting is used to monitor tax expenditure trends and to analyze the effect of tax expenditure schemes on the economy.

Table 1.2 indicates why the 10 countries analyzed produce tax expenditure reports. Australia, Canada, France, Germany, the Netherlands, the United Kingdom, and the United States use tax expenditure reports to facilitate government budgetary considerations. Australia, Austria, Belgium, and the United States associate tax expenditure reports with shaping the tax system and with tax reform. In addition, for the European Union (EU) countries analyzed—Austria, Belgium, France, Germany, Italy, the Netherlands, and the United Kingdom—tax expenditure reports also serve as a monitoring device to keep their tax systems in line with EU tax expenditure policy guidelines.

Legal Obligations

Each country has its own regulations. Table 1.2 points out that the Australia, Austria, Belgium, France, Germany, Italy, and the United States have legally required their governments to produce tax expenditure reports. The other three countries—Canada, the Netherlands, and the United Kingdom—have not established any statutory obligations on the part of the government to produce such reports. However, the appropriate financial authorities of these countries have chosen, in accordance with the recommendations of their respective expenditure committees, to produce tax expenditure reports.

Relationship to the Budget Documents

Germany includes the tax expenditure report as a part of budget document called a subsidy report. Austria, Belgium, France, the Netherlands, and the United States annex tax expenditure reports to budget documents. Australia, Canada, and Italy treat tax expenditure reports as separate government documents that can be used as references to prebudget consultation. The United Kingdom attaches the tax expenditure report as a statistical supplement to its revenue statement.

Frequency

Eight of the 10 OECD countries surveyed compile these reports annually, regardless of their legal obligation. Germany produces one once every 2

Table 1.2. Why Countries Produce Tax Expenditure Reports: A Comparison of 10 OECD Countries

Country	*Purpose and usage*	*Legal requirement*	*Relationship to the budget*	*Frequency*	*Method of estimation*
Australia	Facilitating tax expenditure assessment alongside direct expenditures, contributing to the design of the tax system, and informing the public debate	Legal obligation	Separate government document	Annual	Revenue forgone on an accrual basis
Austria	Shaping tax reform and facilitating the budget process	Legal obligation	Annex as part of a subsidy report to budget documents	Annual	Revenue forgone on an accrual basis
Belgium	Assessing the impact of various tax measures on revenue	Legal obligation	Annex to the budget	Annual	Revenue forgone on a cash basis
Canada	Providing Parliamentarians and the public with information on the estimated cost of tax measures	No statutory obligation	Not directly linked to budget, but provides additional background information	Annual	Revenue forgone on a cash basis
France	Facilitating the budget process	Legal obligation	Annex to the budget bill	Annual	Revenue forgone on a cash basis
Germany	Reducing subsidies and expenditures	Legal obligation	Part of budget called the subsidy report	Every 2 years	Revenue forgone on a cash basis
Italy	Evaluating tax expenditure on the basis of its cost, objective criteria, and its consistency with budget; evaluating its effects for particular sectors and geographical areas compared with its original aims; and being in line with EU tax expenditure policy guidance	Legal requirement	Independent document (not linked to budget process or as annex to budget document)	Sporadic	Revenue forgone on an accrual basis

Netherlands	Providing the parliament with insight into budgetary cost of tax expenditures and possible budgeting	No legal obligation	Annex to the budget memorandum (not directly linked to the budget but serves as additional background information for the parliament)	Annual	Revenue forgone on an accrual basis
United Kingdom	Facilitating annual budget discussion and debate	No statutory obligation, but as a recommendation from the Expenditure Committee	Part of statistical supplement to Autumn Statement (revenue), not linked to budget process or annexed to budget document	Annual	Revenue forgone on an accrual basis
United States	Shaping tax reforms and reducing deficit	Legal obligation	Part of annual budget documents, but not integrated into the budget process	Annual	Revenue forgone, outlay equivalent, and present value on a cash basis

Source: Based on OECD 1996, with recent updates, when available, from the respective countries.

years, and Italy produces one sporadically, perhaps because of the extensive coverage and classification in the tax expenditure report.

Methods of Estimation

All countries studied use the revenue forgone method. The United States also uses the outlay equivalent method for comparison with direct outlay and the present value approach for items such as tax deferral and accelerated depreciation. In addition, Australia, Austria, Italy, the Netherlands, and the United Kingdom use accrual accounting for their budget expenditures, as well as for estimating the cost of tax expenditures. Other countries apply the cash accounting method.

Measuring tax expenditures can be labor intensive because some items, although small, require time to estimate. Therefore, not every single tax expenditure can be estimated, especially for countries that produce an annual report.

Definitions and Inclusions, Coverage, and Classification in Tax Expenditure Reports

Table 1.3 provides a comparison of the tax expenditure reports within the 10 OECD countries surveyed in terms of the definition of tax expenditures and items included in the report; the coverage, including type of taxes and level of government; and the classification of the report. There are both similarities and differences in these reports.

Definitions and Inclusions

Australia, France, and the United States define tax expenditures in accordance with formal definitions and tax norms, so their tax expenditure reports include those items that deviate from tax norms. Canada uses a very narrow definition of tax norm, in which only the most fundamental structural elements of the tax system are considered to be part of the tax norm. Austria, Italy, the Netherlands, and the United Kingdom have tax expenditure reports consisting of all tax preferences, including structural, nonstructural, and borderline. Instead of a tax expenditure report, Germany uses a subsidy report that embraces both direct subsidies and tax concessions. Belgium defines a tax expenditure as a loss of revenue resulting from a departure from a benchmark tax system; therefore, all elements of the tax system that affect government revenue are included in its report.

Coverage

All countries surveyed report personal and corporate income taxes; they also include VAT, except the United States, which has no VAT. Australia,

Table 1.3. What Countries Include in Tax Expenditures Reports: A Comparison of 10 OECD Countries

Country	*Definitions and inclusion*	*Coverage*		*Classification*
		Types of taxes	*Levels of government*	
Australia	Uses a formal definition of a tax expenditure and applies the norm	Personal income tax, retirement benefits tax, fringe benefits tax, business tax, and excise tax	Commonwealth government (central government)	By broad economic function, by type of taxpayer affected, and by the particular benchmark to which they relate
Austria	Uses tax norm to define tax expenditures or indirect subsidies uses three-way classification in tax expenditures, relief in benchmarks, and some in-between classification or combination of the two	Direct and indirect taxes	All levels of government	By type of tax and by beneficiary
Belgium	Defines tax expenditure as a deviation from the benchmark system resulting in a loss of revenue; includes all exemptions, deductions, and allowances that affect government revenues	Personal income tax, corporate income tax, excise taxes, mortgage registry fees, VAT, and annual tax on insurance policies	Federal government	By whether the treatment constitutes a tax expenditure, by type of tax, and by intended purpose
Canada	Uses a very narrow definition of the norm in which only the most fundamental structural elements of the tax system are considered to be part of the benchmark; includes structural and nonstructural tax preferences	Personal income tax, corporate income tax, and goods and services tax	Federal government	Personal income tax by budgetary functional category; corporate income tax and VAT by type of tax provision: for example, rate reductions, exemptions, deductions, deferrals, rebates and credits

(*Table continues on the following page.*)

Table 1.3. (continued)

Country	*Definitions and inclusion*	*Coverage*		*Classification*
		Types of taxes	*Levels of government*	
France	Uses a formal definition of a tax expenditure and applies the norm	Personal income tax, corporate income tax, registry fees and stamp duty, VAT, payroll tax, and internal tax on the consumption of petroleum products	Central government	By type of the tax, by main purpose, and by beneficiary
Germany	Uses a subsidy report, which includes both direct subsidies and tax concessions	Personal income tax, corporate income tax, net worth tax, business tax, turnover tax, insurance tax, motor vehicle tax, excise taxes, betting and lottery tax, property tax, and inheritance tax	Federal government	By industrial sector and, within these sectors, by type of tax
Italy	Uses all favorable tax treatment provisions—structural and nonstructural	Personal and corporate direct taxes, VAT, excise taxes, customs duties, and other indirect taxes	Both federal and local governments	By type of tax, by main sector involved, by aim, by beneficiaries, and by locality
Netherlands	Uses formal definition of a loss or deferment of tax revenue resulting from a tax provision insofar the tax provision is not in accordance with the benchmark tax structure; uses a pragmatic approach for defining the benchmark tax structure	Wage and income taxes, corporate income tax, VAT, excise taxes, energy tax, motor vehicle tax, estate and gift tax, and social insurance contributions	Central government	By purpose of tax expenditure (direct taxes) and by type of tax (indirect taxes)

United Kingdom	Includes all tax reliefs according to three categories: structural relief, nonstructural relief, and borderline relief	Personal and corporate income tax, capital gains tax, inheritance tax, stamp duty, national insurance contributions, and VAT	Central government	By tax expenditures, by structural relief, or by relief, with tax expenditures and structural components under each tax if possible
United States	Defines a tax expenditure as a preferential exception to the baseline provisions of the tax structure; includes all tax expenditures according to the definition; baselines include normal tax baseline and reference law baseline	Personal income tax, corporate income tax, estate and gift taxes, and social security contributions	Federal government	By budgetary functional category

Source: Based on OECD 1996, with recent updates, when available, from the respective countries.

Belgium, the Netherlands, and the United Kingdom include additional tax types. Austria, France, Germany, and Italy cover all direct and indirect taxes in their tax expenditure reports. Most countries cover only the central government in tax expenditure reports; however, Austria and Italy cover all levels of government.

Classification

The 10 countries use various classifications in their tax expenditure reports. In principle, classifications pertain to economic development and budget allocation needs. Such classifications may help answer the following questions: (a) Is the favorable tax treatment provision consistent with the country's budget? (b) Is the original objective still valid? (c) Is the tax expenditure needed to favor particular economic sectors and geographical regions? (d) Does the favorable tax treatment have to be applied only for the period of time initially deemed necessary to achieve its aims?

The U.S. government uses the budget functional classification only. By contrast, Canada uses various classifications according to tax type, such as classification by function for personal income tax expenditures and by types of provisions (for example, tax rate reductions, tax exemptions and deductions, tax deferrals, tax rebates, and tax credits) for both corporate income tax and goods and services tax expenditures. Finally, Italy uses various kinds of classifications to evaluate the cost–benefit outcome for intended beneficiaries. Classifications include tax type, main sectors, aim, beneficiaries, and locality.

Conclusions

This chapter illustrated that the use of tax expenditures concept poses a number of unresolved methodological and institutional issues in countries. Tackling these issues, however, is a requirement for governments that seek to optimize the use of tax expenditures and reduce their mostly hidden costs.

The rest of this book illustrates how different countries have approached tax expenditures in terms of their definition, disclosure, analysis, and inclusion in budgetary and broader fiscal management frameworks. In particular, the practices pursued by the five developed countries provide good references for developing countries producing tax expenditure estimates. The last chapter then outlines the emerging policy options toward better management of tax expenditures.

Notes

1. For a detailed discussion of government contingent liabilities, see Brixi and Schick 2002. *Contingent liabilities* are defined as obligations triggered by a discrete but uncertain event. They are explicit or implicit, depending on the nature (legal versus political or moral) of government commitment. Common examples include government credit guarantees, government insurance programs, and government contingent support programs to bail out troubled banks or state-owned enterprises.
2. Equivalent outlay = revenue forgone/(1 – tax rate).

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2
A Framework for Evaluating Tax Measures and Some Methodological Issues

Gordon J. Lenjosek
Department of Finance Canada

Governments use tax measures, including tax expenditures, to raise revenue for financing spending priorities and to achieve economic, social, environmental, and other policy objectives. This chapter outlines an approach for evaluating tax measures and determining how well they are meeting policy objectives.

In the discussion, the term *tax evaluation* refers to a policy review that assesses the performance of tax measures according to the following three criteria.[1]

- *Relevance*. Is the tax measure consistent with policy priorities, and does it realistically address an actual need?
- *Effectiveness*. Is the tax measure meeting its objectives effectively, within budget, and without unwanted outcomes?
- *Efficiency*. Is the tax measure the most appropriate and efficient means to achieve objectives, relative to alternative design and delivery approaches?

Tax evaluations seek to provide objective, fact-based assessments of the effects of tax measures on resource allocation and income distribution by using economic theory and quantitative methods to analyze economy-wide benefits and costs from tax measures. The following sections describe how tax measures can be evaluated in terms of relevance, effectiveness, and efficiency; highlight how different policy objectives can influence the

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manner in which evaluation criteria are addressed; and discuss some methodological issues and challenges prevalent in tax evaluations.

Relevance

Is the tax measure consistent with policy priorities, and does it realistically address an actual need? Careful consideration of the nature, specific objectives, and design of individual tax measures is critical for identifying evaluation methodologies appropriate to a given set of circumstances.

Typically, consideration of the circumstances that led to the implementation of a tax measure is essential for determining if the measure continues to address a real need in a manner consistent with present social and economic conditions, as well as current policy priorities. Objectives of tax measures are set out in policy documents such as budget papers, discussion papers, and news releases; other sources of information, such as the minutes of legislative committee meetings and debates, can assist in delineating their full intent.

Moreover, it is important to determine whether other policy instruments are being used to achieve the same—or similar—objectives. In addressing policy issues, tax and nontax mechanisms may be used simultaneously to achieve different, but complementary, objectives.[2] Alternatively, the nature of the economic or social goals and specific policy objectives may favor one form of instrument over another. To the extent that alternatives exist, it is necessary to ascertain whether the tax measure uniquely achieves some outcome that the alternatives cannot.

Analysis of the basic design of a tax measure, the key elements of its structure, and its operation also permit comments on how effective it could reasonably be expected to be in influencing economic behavior or conditions and in achieving policy objectives as efficiently as possible. Furthermore, design considerations may provide insights into how the tax measure might complement other policy instruments being used for similar purposes. Key design issues include the form of the tax measure, who can access it and under what conditions, the ability of third parties to facilitate its use,[3] its relative generosity and duration, the timing of its benefits, its interaction with other elements of the tax system, and the compliance and administration requirements.

Effectiveness

Is the tax measure meeting objectives effectively, within budget, and without unwanted outcomes? A wide range of questions can be considered when determining what a tax measure is actually achieving. These ques-

tions relate to (a) the target population (for example, characteristics and actual recipients compared with intended recipients); (b) changes in economic behavior or conditions (for example, the extent to which the tax measure is directly responsible for these changes, or whether other factors are responsible); and (c) the cost of the tax measure (for example, the amount of federal tax assistance being provided and its actual cost relative to its expected cost). Unintended or unforeseen effects, either positive or negative, may be important considerations in assessing effectiveness.

Given the varying types and goals of tax measures, a number of methodologies may be used, often in combination, to address questions of effectiveness. These methodologies include analyses of taxation, financial, and economic data; case studies, surveys, questionnaires, and interviews with affected parties (for example, taxpayers, taxpayer associations, tax professionals, and administrators); consultations with policy experts in universities, the private sector, and government; and literature reviews.

Efficiency

Is the tax measure the most appropriate and efficient means of achieving objectives, relative to alternative design and delivery approaches? Evaluation of the efficiency of a tax measure focuses on the allocation of resources in an economy (or the level and mix of goods and services produced). When an economy is operating efficiently, resources are fully employed and producing as much output as possible.[4]

The effects of tax measures on economic efficiency can, in principle, be quantified and summarized in terms of an overall change in real income. By influencing prices or costs, tax measures reallocate resources and real income among markets. They also impose compliance costs on taxpayers, as well as administration and financing costs on government. The net effect of these various influences on overall real income, which may be termed the *change in the excess burden of taxation*, signals an improvement or reduction in economic efficiency and can only be determined empirically.[5]

Cost-effectiveness calculations are often reported in research studies dealing with tax measures. The concept of cost-effectiveness and the concept of excess burden are discussed in the following two sections.

Cost-Effectiveness

Cost-effectiveness calculations are a first step in evaluating economic efficiency, because they provide a perspective on the ability of a tax measure to enhance overall real income.[6] Cost-effectiveness is determined as the value of the change in economic behavior that is directly attributable to the tax measure (that is, its incrementality) per dollar of federal tax revenue forgone.

A tax measure may be considered to be cost-effective if one dollar of tax revenue forgone generates at least one dollar of incremental spending in the targeted activity. In other words, the cost–benefit ratio must be greater than or equal to unity.[7] If this is the case, a gain in economic efficiency is possible, because the value of the activity being targeted increases by more than the loss in government tax revenue.[8] However, to determine whether an efficiency gain actually does result, further analysis is needed of real income change in the market directly affected, the size of any market failure (or potential economic benefit from correcting it), policy-induced spillover effects on other markets, economic and social costs associated with raising revenues to finance the tax measure, and administration and compliance costs.[9] In other words, cost-effectiveness is, in and of itself, not a sufficient indicator of efficiency, because it does not account for all of the benefits and costs associated with providing a tax measure.

But not all tax measures are implemented primarily to improve economic efficiency. The principal objective of some, for example, is to obtain a more equitable distribution of resources.[10] Unfortunately, although changes in the distribution of income can be measured, there is no objective way to value such changes. This fact influences the orientation of tax evaluations, the methodologies used to address the efficiency criterion, and the choice of performance indicators to encapsulate key evaluation findings. Efficiency remains important in the recognition that there may be more efficient and less efficient ways of redistributing real income. Tax measures that are designed to improve equity also affect economic efficiency, in that they influence behavior, they must be financed and administered, and it is costly for recipients to access them.

Instead of assigning a value to the change in equity in these situations, tax evaluations focus (a) on the cost of the tax measure in attaining the desired income redistribution and (b) on how design improvements and alternative delivery mechanisms might either enhance income redistribution for the same cost or achieve the same income distribution at a reduced cost, to better achieve the specific objectives of the tax measure being considered. The issue then becomes how to design the policy instrument to achieve the desired outcome with the smallest possible loss in economic efficiency. Key evaluation findings may be expressed using summary indicators of the distributional effects per dollar of cost.[11]

Excess Burden of Taxation

Evaluations of efficiency-related tax measures assess performance by quantifying the change in real income

- In the market targeted by the tax measure

- From correcting a market failure, if applicable
- From spillover effects on other markets caused by the tax measure, if these effects are significant
- From costs of financing and administering the tax measure
- From costs of complying with it

Because the effects of the separate components are offsetting, it is important to adopt evaluation methodologies that can take account of each type of benefit and cost while recognizing the specific objectives of the tax measure being considered. The net effect is a monetary measure of the overall change in economic efficiency induced by a tax measure.

A negative change in excess burden signifies a net economic benefit, an improvement in efficiency, and a particular income distribution. Examination of the income distribution provides perspective on potential equity issues associated with the tax measure. A positive change in excess burden, signifying a net economic loss, would increase the importance of examining alternative ways to achieve the objectives specific to the tax measure. A positive change also could raise the profile of the equity aspects of the tax measure. For example, a tax measure could be found to be inefficient but also to have redistributed income in a desirable manner. In such a situation, the effects on income distribution would be weighed against the net loss in economic efficiency, and the tax measure would be evaluated in terms of its ability to achieve its objective at the lowest cost possible.

Whether the net effect is positive or negative, the design of the delivery vehicle is crucial. Evaluations must produce answers to two questions:

- Is the delivery vehicle as efficient as possible? Design improvements may, for example, reduce compliance and administration costs, spillover costs in other markets, and the excess burden of taxation.
- Are there alternative delivery vehicles, existing or theoretical, that could provide the same level of benefits at a lower cost?[12]

Methodological Issues

Some common methodological issues and difficulties that arise in evaluating the performance of tax measures are discussed in this section.

Data Availability

Informational deficiencies are a fairly common problem. They affect not only the ability to assess performance but also the consideration of alternative delivery mechanisms.

Administrative databases are an important source of tax data. However, information necessary for the effective administration of a tax measure

is typically, and understandably, not entirely the same as that required for an evaluation of all aspects of the measure's performance (see, for example, the discussion below of the incrementality of the tax measure). Furthermore, administrative tax data are, at times, limited in their usefulness because of the type and scope of information collected, its timeliness, and changes made over time to what is collected.

Consequently, complementary or additional information must be obtained. Publicly available financial and tax information may be used to supplement administrative data. So too may information collected through case studies, surveys, questionnaires, and interviews. The latter, more direct forms of information gathering can provide insights (a) on the degree to which a tax measure is meeting its specific objectives (for example, incrementality in terms of investment or labor force participation or poverty reduction); (b) on the target population (for example, characteristics and the decision criteria and key factors affecting choices); and (c) on the design and use of the tax measure (for example, experience with compliance and administration authorities or how the measure is perceived, operates, and might be improved). The information obtained may be of relevance to all three aspects of performance—relevance, effectiveness, and efficiency. Studies published by experts in universities and in public and private sector institutions may also help address these issues and provide a useful perspective for comparing and explaining results.

Incrementality

Because government tax policies are designed to affect the economic behavior or conditions of individuals and firms, determining the incrementality of a tax measure—the extent to which it is directly responsible for these changes—is a central evaluation objective. For tax measures that are aimed primarily at improving efficiency, methodologies used to estimate incrementality can be grouped into three categories: econometric analyses, surveys, and case studies.[13] Each has its advantages and disadvantages. The choice of one methodology over another depends (a) on the questions subject to investigation and the desired depth and detail of the answers required; (b) on feasibility, given data quality and availability; and (c) on timing.

Econometric analyses use economic theory and statistical techniques to attempt to isolate the effects of a tax measure from other key influences on economic behavior. Depending on how the measure is structured, information exogenous to the econometric model may be required in order to determine incremental effects. This additional information may not be readily available, or alternative possibilities may exist. A range of possible behavioral effects that are generated by altering underlying key assumptions may be reported to address these problems. However, these

sensitivity analyses can provide only indications of potential effects. Other approaches seek to obtain the missing information from, for example, surveys or case studies and to incorporate it into the economic framework to enhance the credibility of the incrementality results.[14]

It is becoming increasingly popular to undertake econometric analyses in the context of a quasi experiment. Quasi experiments compare the economic behavior of one group that receives a tax measure with that of another group that closely resembles the recipient group in available observed characteristics but does not receive the tax measure. The similarity between the two groups allows econometric analysis to distinguish between the behavioral effects of shared influences that are not explicitly modeled and the behavioral effects of the tax measure. However, selection of an appropriate comparison group can be difficult, and the results depend on the magnitude of the tax measure being considered. The choice of the econometric estimation technique also can lead to different results.

Surveys and interviews with key decisionmakers may be used in conjunction with econometric analysis. By contacting the individuals directly involved, surveys provide direct insights into decisionmaking processes and policy-induced behavioral changes that are due to the tax measure. The use of statistical tools, in contrast, allows evaluators only to draw inferences. The main advantage of surveys over econometric analyses is the greater level of detail and understanding that can be obtained. Their main disadvantages are their relatively high cost and the difficulty of distinguishing random from nonrandom patterns of behavior. The identification of behavioral trends and their causes is of key importance from a policy perspective; econometric analysis of survey results can help assess their validity.[15] Another disadvantage of the survey methodology, especially with respect to questions of a more qualitative nature, is the natural tendency of respondents to overestimate the effect of policies that are beneficial to them. The inclusion of questions that can be corroborated with objective data (for example, from administrative sources) can enhance the overall credibility of all responses. Another disadvantage is that substantial resources must be dedicated to preparing the survey questionnaire, identifying a representative survey sample, and choosing a survey instrument.

Case studies can provide substantial detail on specific target groups or subpopulations, specific economic activities, or specific aspects of policy. They are often complemented by interviews with key decisionmakers within the target population. Because of their detailed nature, case studies are more appropriate for analyzing, for example, a policy through which benefits are provided to a relatively small number of taxpayers in similar circumstances. The main drawback of case studies is that they cannot identify patterns of behavior that are representative of the population as a whole. As such, case studies are not particularly well suited for evaluating

the effectiveness of broadly based tax measures that provide assistance to relatively large numbers of taxpayers in different situations. Another disadvantage is that case studies, like surveys, are costly to undertake. Thus, case studies are generally narrower in focus than surveys and econometric analyses. The latter methodologies are better suited to examining broader issues, such as the overall responsiveness of demand to tax changes (elasticities) or the overall increase in spending induced by a tax incentive.

The Cost of Tax Measures

The reporting of tax expenditures has become a common practice among governments. A *tax expenditure* is the cost of a tax measure that is intended to advance economic, social, environmental, or other policy objectives. Although differentiating these tax measures from the normal parts of a tax system can be controversial, the cost is typically calculated as the difference between total tax revenue in the presence and absence of the particular tax measure, assuming everything else remains unchanged.[16] No allowance is made for behavioral responses by taxpayers, consequential government policy changes, or changes in tax collections due to altered levels of aggregate economic activity that might result from the measure's elimination.

Precise methodologies used to determine the costs of individual tax measures vary according to the measure being considered. No single methodology is appropriate in all situations, and some methodologies can be quite complex and subject to debate.[17] Approaches used in evaluations of individual tax measures often include behavioral effects in order to enhance the precision of the cost estimates.

The Excess Burden of Taxation

Empirical estimates of each of the components of the change in the excess burden of taxation are needed to determine the overall net effect of the tax measure on real income.

Ease of administration and compliance are important considerations that can affect the efficiency and success of any tax measure. It may be possible to obtain estimates of compliance burden and costs through direct communication with taxpayers and accounting professionals. Information on administrative burden and costs may be available from tax administrators. However, in neither case is success certain. Although taxpayers and accounting professionals may track the total time they spend preparing tax returns, it is very difficult to allocate that time to individual tax items. Similarly, tax administrators tend to have broader responsibilities, thereby making it difficult to separately identify and partition costs among items.

Tax measures must be financed. The necessary revenues can come from reduced spending, increased debt, or higher taxes. Regardless of how the measure is financed, there will be implications for the economy as a whole. Much work has been done in examining how different types of taxes affect behavior, efficient use of resources, and economic growth. Results are often presented in terms of the marginal efficiency cost of alternative tax bases per dollar of tax revenue raised, but the cost varies significantly, depending on the tax base used. Consumption taxes (broadly based sales taxes) are generally found to have the least distortionary effects on economic efficiency and growth; taxes on capital income (savings) have the most distortionary impacts. A broadly based tax change (including consumption, payroll, income, and capital taxes) will have an intermediate effect. This work and these findings can be useful in determining the effect on real income associated with the financing component of the change in excess burden. However, the exact manner in which tax revenues are raised remains a crucial consideration. Tax evaluations typically assume revenue-neutral tax financing through a general increase in all taxes.

Estimating the gain in real income for society as a whole in cases where a tax measure corrects a market failure is no less difficult. The nature of the market failure must first be identified. Alternative viewpoints on what is or is not a market failure can generate considerable debate. If agreement is reached on this issue, the size of the market failure then must be determined.[18] The availability of data to make this determination is often a problem. Literature estimates of market failure of a particular type—or the extent of the distortion in a particular market—often do not exist. Even when estimates are available, as in the case of research and development, they have been calculated only for certain sectors of an economy, and the methodology used may be controversial.

Two approaches can be used to estimate the net effect on real income of the two remaining components of the change in the excess burden of taxation: the net improvement in real income in the market directly affected (essentially equal to the gain in consumer's surplus minus the loss in tax revenues), and the loss in real income from altered economic activity in other markets. One approach seeks to approximate the change in excess burden from these sources, per dollar of tax expenditure, using what might be termed a *partial general-equilibrium methodology*; the second approach uses computable general-equilibrium (CGE) modeling.

Approximating the Net Change in Real Income among Markets

An individual tax measure typically will have a negligible effect on overall prices and nominal income. Appendix A outlines an approach for approximating the net change in excess burden caused by tax-induced changes in real income among markets in such a situation. The net effect

is expressed per dollar of tax expenditure. The approach is relatively simple to use, provides a consistent framework for capturing market interactions in analyzing how the tax changes affect real income, and highlights the importance of doing so when cross-price effects are significant.

The basic intuition underlying the approach is as follows. A concessionary tax measure increases the demand for the favored commodity and real income in that market.[19] However, reduced tax revenue caused by the tax preference partly offsets this increase. The resulting net gain reduces real income in all other markets by an equal amount and, consequently, reduces the demands for other commodities and the tax revenue derived from those commodities on the basis of compensated demands. The combination of these direct and spillover effects is captured in a summary indicator that measures the performance of the tax provision in enhancing efficiency per dollar of tax revenue forgone. To the extent that demand is diverted to the favored market from markets subject to lower levels of taxation, there will be a smaller reduction in overall tax revenue and a more favorable effect on economic efficiency.

CGE Modeling

Computable general-equilibrium tax models, which allow for both price and income changes, can be used to provide another perspective on how a tax measure that has significant effects on markets can affect overall real income.[20] In doing so, CGE tax models use the incrementality and cost-effectiveness results of a tax measure; the estimate of the size of the market failure; and other relevant information, including costs of financing, administration, and compliance.

A CGE tax model is simulated first in the absence of the tax measure. In this case, relative prices reflect the market failure and the loss in economic efficiency from a misallocation of resources among markets. The model is then simulated in the presence of the tax measure and modified to incorporate any spillover benefits associated with removing the externality. In this case, relative price changes shift the same overall supply of resources to a more efficient use. All things being equal, total factor productivity and real income rise as a result of this shift in resources. However, the tax measure imposes economic costs, because the overall level of taxation must increase to fund it. Broadly based tax changes can raise the revenues required in various ways; for example, all tax rates can be raised by either the same percentage-point amount or the same percentage to obtain an increase in tax revenues equal to the cost of the tax incentive. More narrowly based tax increases can lead to wide variations in cost estimates. More than one financing option may be used. If a comparison of simulation results reveals that the economic benefits exceed the economic costs, then the tax measure has succeeded in improving real income.

Summary

This chapter presents an approach for assessing the performance of tax measures, including tax expenditures, in terms of relevance, effectiveness, and efficiency in meeting their stated policy objectives. Tax evaluations involve a rigorous analysis of economy-wide benefits and costs associated with tax measures, using economic theory and quantitative methods.

All tax measures affect both the allocation and the distribution of resources in an economy. They must also be financed and administered, and it is costly for recipients to access them. The overall nature of tax measures influences the orientation of the tax evaluation; the specific objectives of individual tax measures modify it further. Differences in the rationale and design of tax measures, informational deficiencies, and methodological questions associated with determining and summarizing effects combine to make each tax evaluation unique and challenging.

Notes

1. These criteria are consistent with the approach for evaluations in Treasury Board of Canada Secretariat 2001.

2. Tax measures may take a variety of forms, including accelerated or bonus deductions, refundable or nonrefundable tax credits, incremental tax deductions or tax credits, tax rate reductions, or subsidies provided through the tax system. Nontax instruments may take the form of information, regulation, grants, loans, government contracts, and direct government involvement in the market.

3. For example, a 1994 evaluation by the Department of Finance Canada, titled *Flow-Through Shares: An Evaluation Report*, found that the use of the tax-assisted flow-through share financing mechanism for exploration and development was facilitated significantly by the participation of limited partnerships in the transaction. (A portion of that evaluation appears in Jog and others 1996).

4. Such an allocation of resources is said to be *Pareto optimal*; the economy is operating efficiently, and there is no scope for further improvements in anyone's well-being without compromising the welfare of someone else. But many efficient allocations are possible, each one corresponding to a different distribution of real income.

5. This term is used to underscore the notion that, in general, taxes impose a burden both on the persons who must pay the tax and on society as a whole in the form of lower output.

6. Although differences in tax systems and economic circumstances will affect comparability, cost-effectiveness calculations relating to policy instruments used in subnational and foreign jurisdictions to achieve similar objectives may provide insights on relative efficiency effects and their potential as alternative delivery approaches.

7. This ratio can also be expressed in terms of the price elasticity for the targeted activity,

$$\eta \equiv -\frac{\partial x}{\partial p}\frac{p_1}{x_1}.$$

The increase in spending on the targeted activity is $p_1\Delta x \approx -\eta x_1 \Delta t$, where $\Delta t = \Delta p$. Taking account of behavioral effects, the tax expenditure is

$$-\left(t_1\Delta x + x_0\Delta t\right) \approx -x_1\Delta t\left[1-\eta\left(\frac{t_0}{1+t_1}\right)\right].$$

In this situation, a tax measure will be cost-effective if

$$\eta \geq \frac{1+t_1}{1+t_0+t_1}.$$

If behavioral effects are ignored, then the tax expenditure is $-x_1\Delta t$ and the tax measure will be cost-effective if

$$-\frac{p_1\Delta x}{x_1\Delta t} \approx \eta \geq 1.$$

8. If the cost–benefit ratio is less than unity, then the loss in government tax revenue exceeds the increase in the value of the activity being targeted, and a portion of the forgone tax revenue is being used for purposes other than intended.

9. Although competitive markets can produce an efficient allocation of resources through the workings of the price system, they do not always do so. Reasons for market failure may include the presence of externalities or imperfect information.

10. Regardless, all tax measures affect both the allocation and the distribution of resources. A Pareto-improving tax measure, for example, is one that enhances economic efficiency in a manner that makes someone better off without making anyone else worse off. Such an objective may command wide acceptance, but it also embodies a value judgment as to how income should be redistributed.

11. Such performance indicators for key evaluation findings typically need to be tailored to the methodologies chosen and may be neither straightforward nor simple to establish.

12. The 1994 evaluation of flow-through shares by the Department of Finance Canada (see note 3) considered a theoretical equity-based alternative for financing petroleum and mining exploration and development.

13. Randomized social experiments, which typically do not apply to tax measures, are another method that is sometimes used to gauge how economic behavior may change in response to a government policy. In essence, this methodology compares the behavioral responses of two randomized subsets of the eligible

population, one of which receives an incentive while the other serves as the control group. The difference between the behavioral responses of the two groups is attributed to the incentive.

14. This approach was used in a 1990 evaluation by the Department of Finance Canada, titled *Economic Effects of the Cape Breton Investment Tax Credit: An Evaluation Report*, and is also described in Daly and others 1993. In essence, estimates of the incrementality of the tax credit on capital investment in manufacturing were obtained from case studies of firms operating in the region. Econometric analysis and economic modeling produced a range of capital incrementality estimates for the entire industry, depending on how the demand for the region's manufactured products might respond to the tax-induced change in their price. The information needed to establish an overall incrementality result, and a benchmark for analysis, was obtained by using the demand response implicit in the incrementality estimates of the case studies.

15. A 1997 evaluation by the Department of Finance Canada, titled *The Federal System of Income Tax Incentives for Scientific Research and Experimental Development: Evaluation Report*, combined survey findings and econometric analysis in this way. Econometric analysis allowed comment on the statistical significance of the incrementality results from a survey of the types and characteristics of research and development performers.

16. A range of alternative approaches exists internationally; some are restrictive, others very broad. Each can be criticized as applying some degree of value judgment. The broadest of the available options identifies tax expenditures as all deviations from a narrowly defined benchmark tax system. This approach is used by the Department of Finance Canada in its annual tax expenditure publications, in an attempt to provide as much information as possible on the actual and projected costs of individual tax measures without getting into a controversy as to whether or not a particular item is, or is not, a tax expenditure. (See, for example, Department of Finance Canada 2002.)

17. For example, there has been considerable discussion of the appropriate method for calculating the cost of tax measures that contain a deferral component. (See Department of Finance Canada 2001 for a discussion of this issue with respect to tax-assisted retirement savings.) A review of the procedures and techniques used to estimate tax expenditures in Canada is provided in chapter 5 by Marc Seguin and Simon Gurr.

18. If the market failure is small, then the costs associated with the tax measure will likely exceed its benefits, so that the policy will not enhance overall real income.

19. Specifically, compensating variation or Hicksian consumer's surplus.

20. CGE tax models are a standard methodology for estimating the economic effects of a policy change once the economy has fully adjusted to the new policy environment. They capture the economic behavior of consumers and producers both within an economy and through trade with other countries, by focusing on

the allocation of an economy's limited resources among competing uses. A variety of taxes can be modeled, such as personal and corporate income taxes, payroll taxes, and commodity taxes. Taxes affect relative prices, which, in turn, affect (a) demands for labor and capital and (b) the production of all commodities. Resources are assumed to be fully used and all markets are assumed to be in equilibrium (that is, demands equal supplies) at all times. Economic impacts are assessed by simulating the models both with and without the policy change. Impacts on key economic variables, such as real income and real gross domestic product, are measured by comparing values generated with and without the tax incentive in place.

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Appendix A
Estimating the Change in Excess Burden per Dollar of Tax Expenditure

This appendix outlines an approach for approximating the change in excess burden per dollar of tax expenditure, which, in turn, highlights the importance of accounting for market interactions in welfare analyses. For the purposes of this appendix, the *change in excess burden* is defined as the net change in real income among markets as a result of taxation and represents the net loss in economic efficiency caused by the distorting effects of taxation on prices and economic behavior.[1] A *tax expenditure* is the tax revenue forgone as a result of using a tax measure to achieve an economic, social, environmental, or other policy objective.

The next section develops an algebraic representation of excess burden as the difference between compensating variation and compensated tax revenue in a market economy subject to taxation. A tax change in one market, for example, caused by a concessionary tax measure, lowers the tax-inclusive price of the favored commodity, stimulates its demand, and improves consumer welfare. However, this increase in real income, or compensating variation, is offset by reduced (compensated) tax revenues in all markets. The loss of tax revenue in the market for the favored commodity, which equals the cost of the tax measure, is less than the real income gain in that market. The resulting net gain in real income reduces real income in other markets by an equal amount. This effect causes the (compensated) demands for other goods to fall, and because they are subject to tax, it further reduces tax revenue. The combination of the net effects on the favored market and the spillover effects on other markets can be captured as a change in excess burden per dollar of tax expenditure.

The third section develops a summary indicator to measure the performance of a tax measure in enhancing economic efficiency per dollar of tax revenue forgone. Conditions are outlined under which this performance indicator, calculated using observable demand and taxation data, can be expected to yield a reasonable approximation of the true change in excess burden per dollar of tax expenditure.[2]

The final section considers a special case to illustrate how the responsiveness of demand can affect the ability of a tax measure to improve efficiency. Higher demand in the market for the preferred commodity occurs

at the expense of demand in other markets. To the extent that demand is diverted from markets subject to lower levels of taxation, there will be a smaller reduction in tax revenue and a more favorable effect on economic efficiency.

Excess Burden of Taxation

To focus on efficiency issues, we consider an economy with a single consumer. The consumer's demand for commodities, net of endowments, is denoted by the vector $x = (x_0, x_1, \ldots, x_N), x \in \Re$, where x_0 is the net demand for the numeraire commodity. Commodities that are in net supply to the market, such as leisure, are measured as negative numbers.

Pretax prices (or producer prices and gross wages) of each of the $N + 1$ commodities are assumed fixed and equal to unity by choice of units. Income taxes apply to all commodities at initial rates τ_k, where $k = 0, \ldots, N$; sales taxes apply at initial rates v_k, where $k = 0, \ldots, N$. Consumer prices are thus denoted as $\pi_k = (1 + \tau_k)(1 + v_k)$, where $k = 0, \ldots, N$.

The consumer's budget constraint is

$$x_0 + \sum_{j=1}^{N} p_j x_j = \sum_{k=0}^{N} \left(\frac{\pi_k}{\pi_0} \right) x_k \leq 0 \tag{2.1}$$

where $p_j = 1 + t_j = \pi_j / \pi_0$, $j = 1, \ldots, N$ is the relative price of commodity j, and t_j is the effective tax rate on commodity j.

The consumer's preferences are represented by the continuous utility function $u(x)$. The associated indirect utility and expenditure functions are

$$v(p) = \max_x \left\{ u(x) : x_0 + \sum_{j=1}^{N} p_j x_j \leq 0 \right\} \tag{2.2}$$

$$e(p, u) = \min_x \left\{ x_0 + \sum_{j=1}^{N} p_j x_j : u(x) \geq u \right\} \tag{2.3}$$

The uncompensated net demand functions associated with equation 2.2 are denoted as $x(p)$; the compensated net demand functions associated with equation 2.3, as $x(p, u)$.

Let $v(1) = u^0$ denote the consumer's maximum level of utility at undistorted relative prices, or, equivalently

$$e\left(1, u^0\right) = x_0^0 + \sum_{j=1}^{N} x_j^0 = 0 \tag{2.4}$$

This equilibrium is represented by point A in figure 2.1 for the case of two commodities.

Taxes distort consumer prices and reduce the level of utility attainable by the consumer. Let $v(p) = u^1 < u^0$ denote the consumer's utility at distorted prices. Since producer prices are held constant, the consumer's expenditure is unchanged; that is,

$$e\left(p, u^1\right) = x_0^1 + \sum_{j=1}^{N} p_j x_j^1 = x_0^1 + \sum_{j=1}^{N} x_j^1 + \sum_{j=1}^{N} t_j x_j^1 = e\left(1, u^0\right) \tag{2.5}$$

or

$$e\left(p, u^1\right) - e\left(1, u^0\right) = \Delta x_0 + \sum_{j=1}^{N} \Delta x_j + \sum_{j=1}^{N} t_j x_j^1 = 0 \tag{2.6}$$

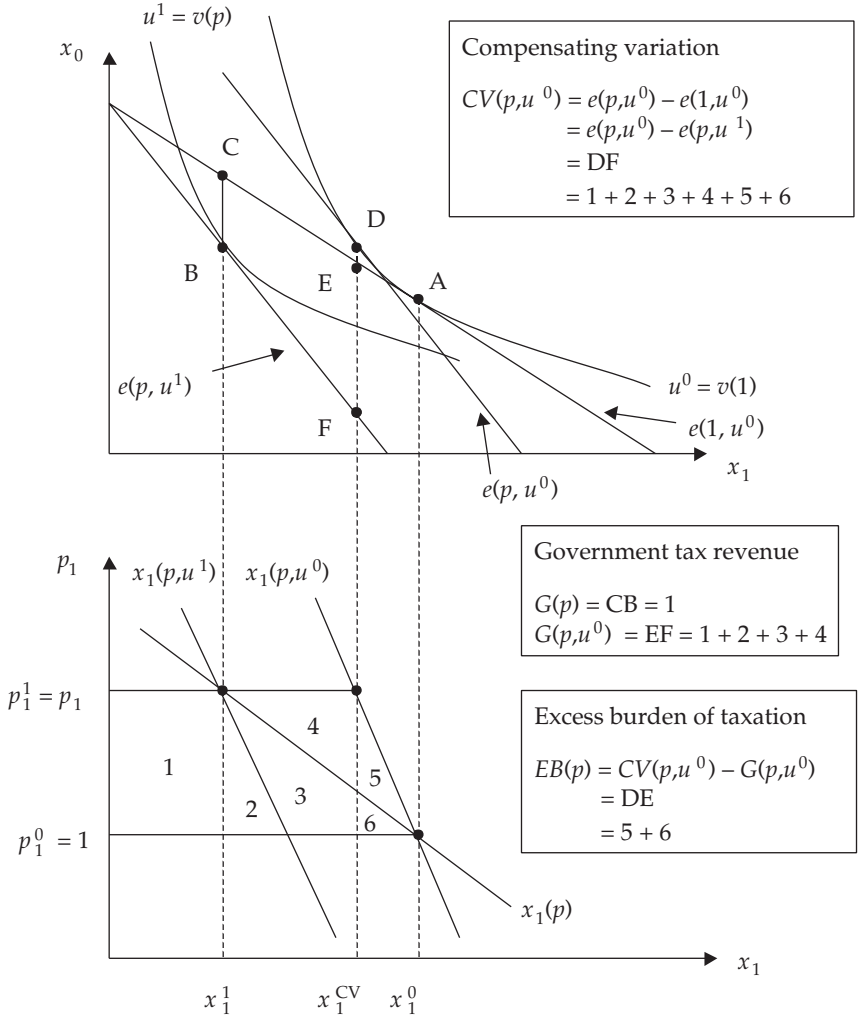
However, because consumer prices are now higher as a result of taxation, the consumer cannot obtain the same quantity of goods; part of the consumer's expenditure goes to government in taxes,

$$G(p) = \sum_{j=1}^{N} t_j x_j^1.$$

The new equilibrium is represented by point B in figure 2.1. The net demand for good 1 falls to $x_1^1 = x_1(p) = x_1(p,u^1)$ from $x_1^0 = x_1(1) = x_1(1,u^0)$. The amount of tax revenue actually collected by government, $G(p) = t_1 x^1{}_1$, is represented as the distance CB (measured in terms of the numeraire)[3] and by area 1.

The reduction in the consumer's utility, or welfare, caused by taxation can be measured properly as the additional expenditure the consumer would have to make at distorted prices to obtain the same level of utility attainable at undistorted prices. This additional expenditure, which is also referred to as *compensating variation*,[4] $CV(p,u^0, u^1)$, can be defined as

Figure 2.1, Excess Burden of Taxation: Two Good Cases



$$CV\left(p,u^0,u^1\right) = e\left(p,u^0\right) - e\left(p,u^1\right) = e\left(p,u^0\right)$$
$$= \left(x_0^{CV} + \sum_{j=1}^{N} x_j^{CV}\right) + \sum_{j=1}^{N} t_j x_j^{CV} \tag{2.7}$$

where $x_k^{CV} = x_k\,(p,u^0) = \delta e(p,u^0)/\delta p_k = x_k^1 + \Delta x_k^{CV}$, and $k = 0, \ldots, N$. For normal goods, $\Delta x_k^{CV} > 0$, where $k = 0, \ldots, N$.

The additional expenditure would move the consumer to an equilibrium at point D in figure 2.1. The compensated net demand for good 1 would increase to $x_1^{CV} = x_1\,(p,u^0) > x_1^1$. Compensating variation is represented as the distance DF (measured in terms of the numeraire)[5] or the sum of areas 1 through 6.

It is evident from equation 2.7 that compensating variation is composed of two basic components, one of which is compensated government tax revenue,

$$G(p,u^0) = \sum_{j=1}^{N} t_j x_j\left(p,u^0\right) = \sum_{j=1}^{N} t_j x_j^{CV} = G(p) + \sum_{j=1}^{N} t_j \Delta x_j^{CV} \tag{2.8}$$

If the consumer were able to realize the additional expenditure $e(p,u^0)$ needed to fully offset the reduction in utility as a result of taxation, then a portion of that additional expenditure would accrue to the government as additional tax revenue. Government tax revenue (compensated or uncompensated) offsets the decline in the consumer's welfare by an equal amount. In figure 2.1, compensated tax revenue associated with an equilibrium at point D is represented as the distance EF > CB (measured in terms of the numeraire)[6] or the sum of areas 1 through 4.

The remaining component of compensating variation is referred to as the excess burden of the tax system, which is a theoretically correct measure of the net loss in economic efficiency, or in the consumer's welfare, caused by taxation. As measured using compensating variation net of compensated tax revenue (holding pretax prices fixed), excess burden, $EB(p,u^0)$, is given as

$$EB\left(p,u^0\right) = x_0^{CV} + \sum_{j=1}^{N} x_j^{CV} = CV\left(p,u^0,u^1\right) - G\left(p,u^0\right)$$
$$= e\left(p,u^0\right) - \sum_{j=1}^{N}\left(p_j - 1\right)x_j\left(p,u^0\right) \tag{2.9}$$

In figure 2.1, the net reduction in the consumer's welfare is represented as the distance DE (measured in terms of the numeraire)[7] or the sum of areas 5 and 6.

Change in Excess Burden per Dollar of Tax Expenditure

The total change in excess burden from small changes in tax rates is given by the total differential of equation 2.9. Because $dt_j \equiv dp_j$,

$$\begin{aligned} dEB\left(p,u^0\right) &= \sum_{j=1}^{N} \frac{\partial e\left(p,u^0\right)}{\partial p_j} dp_j - \sum_{j=1}^{N} x_j\left(p,u^0\right) dp_j - \sum_{j=1}^{N} t_j dx_j\left(p,u^0\right) \\ &= -\sum_{j=1}^{N} t_j dx_j\left(p,u^0\right) \end{aligned} \tag{2.10}$$

Thus, the change in excess burden can be determined from the net change in compensated tax revenue.

Single Tax Rate Change

When there is a change only in tax base i, $dt_m = dp_m = 0$, $\forall m \neq i$, and the change in excess burden may be expressed as[8]

$$dEB^i\left(p,u^0\right) = -\sum_{j=1}^{N} t_j \sum_{m=1}^{N} \frac{\partial x_j\left(p,u^0\right)}{\partial p_m} dp_m = -\sum_{j=1}^{N} t_j \frac{\partial x_j\left(p,u^0\right)}{\partial p_i} dp_i \tag{2.11}$$

The change in excess burden corresponding to a large change in tax base i can be approximated using average tax rates,

$$\bar{t}_j = t_j + \frac{\Delta t_j}{2} = \begin{cases} t_j, j \neq i \\ \bar{t}_i, j = i \end{cases}.^9$$

$$\Delta EB^i\left(p,u^0\right) \approx -\sum_{j=1}^{N} \bar{t}_j \Delta x_j\left(p,u^0\right) = -\bar{t}_i \Delta x_i\left(p,u^0\right) - \sum_{j \neq i} t_j \Delta x_j\left(p,u^0\right) \tag{2.12}$$

This expression depends on unobservable changes in compensated demands. Of course, the change in compensated demand equals the change in uncompensated demand when the income elasticity of demand is zero. More generally, Hausman (1981) outlines an approach that can be used to calculate the change in compensated demand for any demand function that satisfies the Slutsky conditions. Willig (1976) shows that, for a single price change, the change in uncompensated demand provides a good approximation to the change in compensated demand when expenditure shares are small. In this case, changes in uncompensated demands replace the changes in compensated demands in equation 2.12.

$$\Delta EB^i\left(p,u^0\right) \approx \Delta EB^i\left(p\right) \approx -\bar{t}_i \Delta x_i\left(p\right) - \sum_{j \neq i} t_j \Delta x_j\left(p\right) \tag{2.13}$$

Tax Expenditure

If the cost of a tax measure is calculated as the difference between tax revenue in the absence and in the presence of a particular tax measure, assuming no changes in economic behavior or circumstances, then the cost of a tax expenditure with respect to tax base i, TE^i, may be denoted

$$TE^i = -x_i \Delta t_i \tag{2.14}$$

where x_i is the demand for good i in the presence of the tax expenditure. Equation 2.13 may then be expressed in terms of the tax expenditure with respect to tax base i.

$$\frac{\Delta EB^i\left(p,u^0\right)}{TE^i} \approx \frac{1}{2}\frac{\Delta x_i\left(p\right)}{x_i} + \frac{\sum_{j=1}^{N} t_j \Delta x_j\left(p\right)}{x_i \Delta t_i} \tag{2.15}$$

Consumer Expenditure

Since pretax prices are assumed to be fixed, consumer expenditure remains unchanged before and after any tax change; that is,

$$e\left(p^2,u^2\right) = e\left(p,u^1\right) \text{ or } x_0^2 + \sum_{j=1}^{N} p_j^2 x_j^2 = x_0^1 + \sum_{j=1}^{N} p_j x_j^1.$$

Thus, a change in tax base i will affect the demand for all goods.

$$\Delta x_0 + \Delta p_i x_i^1 + p_i^2 \Delta x_i + \sum_{j \neq i} p_j \Delta x_j = 0 \tag{2.16}$$

Market Diversion

To see the importance of market diversion for equation 2.15, consider an economy in which there are three commodities: the numeraire, x_0, and two other goods, x_1 and x_2. Initially, the same rate of sales tax applies to all goods ($v_j = v, j = 0, 1, 2$), the numeraire is not subject to income tax ($\tau_0 = 0$), and the same rate of income tax applies to x_1 and x_2 ($\tau = t_1 = t_2$). For simplicity, it is also assumed that the demand for the second good is initially negligible, so that $x_0^1 > 0$, $x_1^1 > 0$, $x_2^1 = 0$.[10]

An income tax incentive is then introduced to encourage consumption of the second good. The incentive reduces the income tax rate applicable to the sheltered commodity ($\Delta\tau_2 = \Delta\tau_2 < 0$) and results in a net demand of x_2 ($= x_2^2 = \Delta x_2$). The tax expenditure on good 2 is $TE^2 = -x_2\Delta\tau_2$.

In such an economy, the change in excess burden per dollar of tax expenditure on good 2 is

$$\frac{\Delta EB^2\left(p, u^0\right)}{TE^2} \approx \frac{1}{2} + \frac{\tau\left(\Delta x_1 + x_2\right)}{x_2 \Delta\tau_2} \tag{2.17}$$

100 Percent Diversion from the Numeraire

If there is no change in the demand for good 1, then the increase in demand for good 2 comes entirely from substitution away from the numeraire. In this case, $\Delta x_1 = 0$.[11] Consequently, equation 2.17 may be written

$$\frac{\Delta EB_0^2\left(p, u^0\right)}{TE^2} \approx \frac{1}{2} + \frac{\tau}{\Delta\tau_2} \tag{2.18}$$

If $\tau > 0$ and $-\Delta\tau_2 < 2\tau$, then $\frac{1}{2} + \tau/\Delta\tau_2 < 0$ and the change in excess burden per dollar of tax expenditure will be negative. Hence, the change in the welfare per dollar of tax expenditure will be positive; that is, $\Delta W = -\Delta EB(p,u^0) > 0$. For any given $\tau > 0$ and $-\Delta\tau_2 < 2\tau$, equation 2.18 provides

the maximum net decrease in excess burden (maximum net gain in welfare) per dollar of tax expenditure.

If the tax incentive were to produce a zero rate of tax for the sheltered asset[12]—that is, if $\Delta\tau_2 = -\tau < 2\tau$—the overall change in welfare would be positive; net welfare would increase by, at most, 50 cents per dollar of tax expenditure: $\Delta W_0^2 / TE^2 \approx 0.5$. Because the numeraire is not subject to income tax, there is no change in compensated government tax revenue; that is, $\Delta G_0^2 (p,u^0)/TE^2 \approx 0$. There is only a shift in resource allocation away from the numeraire in response to the increase in demand for good 2. This result thus approximates the increase in compensating variation per dollar of tax expenditure in the market for good 2; that is, $\Delta CV_2^2 (p,u^0,u^1)/TE^2 \approx 0.5$.

100 Percent Diversion from Good 1

If there is no change in the demand for the numeraire, then the increase in demand for good 2 comes entirely from substitution away from good 1. In this case, $\Delta x_0 = 0$ and, from equation 2.16, $\Delta x_1 = -x_2 (p_2^2 / p_1) = -x_2 [1 + \Delta\tau_2/(1 + \tau)]$. Consequently, equation 2.17 may be expressed

$$\frac{\Delta EB_1^2\left(p, u^0\right)}{TE^2} \approx \frac{1}{2} - \frac{\tau}{1+\tau} \tag{2.19}$$

If $\tau < 1$, then $0 < \frac{1}{2} - \tau/(1 + \tau) \leq 0.5$ and the change in excess burden per dollar of tax expenditure will be positive. Thus, the change in welfare per dollar of tax expenditure will be negative; that is, $\Delta W = -\Delta EB(p,u^0) < 0$.

For any given $\tau > 0$, equation 2.19 provides the maximum net increase in excess burden (maximum net loss in welfare) per dollar of tax expenditure. This efficiency effect is independent of the size of the tax incentive. If, for example, $\tau = 0.38$,[13] the overall change in welfare would be negative; net welfare would decrease by, at most, 22 cents per dollar of tax expenditure; that is, $\Delta W_2^1/TE^2 \approx -0.22$. This result approximates the increase in compensating variation per dollar of tax expenditure in the market for good 2, $\Delta CV_2^2 (p,u^0,u^1)/TE^2 \approx 0.50$, minus the larger loss in compensated government tax revenue in the market for good 1, $\Delta G_1^2(p,u^0)/TE^2 \approx -1/(1 + \tau) = -0.72$. There is not only a shift in resource allocation from good 1 to good 2, but also a welfare-reducing fall in compensated tax revenue, because good 1 is subject to income tax.

Intermediate Cases

If the increase in demand for the sheltered commodity comes partly from substitution away from the numeraire and partly from substitution away

from the first good, then $\Delta x_1 = -\alpha x_2$, where $0 \le \alpha \le 1 + \Delta\tau_2/(1 + \tau)$. In this situation, $\alpha = 0$ signifies 100 percent diversion from the numeraire, and $\alpha = 1 + \Delta\tau_2/(1 + \tau)$ signifies 100 percent diversion from good 1.[14] The change in excess burden per dollar of tax expenditure on good 2 can be approximated by substituting $\Delta x_1 = -\alpha x_2$ into equation 2.17.

$$\frac{\Delta EB^2\left(p,u^0\right)}{TE^2} \approx \frac{1}{2} + \left(1-\alpha\right)\frac{\tau}{\Delta\tau_2} \tag{2.20}$$

If $\alpha = 0$, then equation 2.20 equals equation 2.18, the maximum net gain in welfare. Conversely, if $\alpha = 1 + \Delta\tau_2/(1 + \tau)$, then equation 2.20 equals equation 2.19, the maximum net loss in welfare.

Notes

1. Efficiency effects associated with market failure and costs of financing, administration, and compliance are not considered.

2. It may be possible to extend the approach to include efficiency costs associated with, for example, revenue-neutral tax financing. Alternatively, conventional estimates of the marginal efficiency cost of raising revenues through taxation could be used. Such estimates are provided, for example, in Browning 1987, p. 22; Jorgenson and Yun, 1996, p. 424; and Kesselman 2000, p. 49.

3. At, $x_1^1 e\left(1,u^0\right) - e\left(p,u^1\right) = \left(x_0^C + x_1^1\right) - \left(x_0^B + p_1 x_1^1\right) = x_0\Big|_B^C - t_1 x_1^1 = 0 \Rightarrow x_0\Big|_B^C = G(p\,.$

4. Hicks (1946) defines compensating variation as "the increase in income that would just offset the increase in price, and leave the consumer no better off than before." If producer prices and wages were not fixed by assumption, then introducing a tax would reduce expenditure (or income) and welfare even further. In this framework, $e(p,u^N) \equiv y < e(p,u^1) = 0$, $u^N \equiv v(p,y) < u^1$, and compensating variation could be defined as

$$CV\left(p,u^0,u^N\right) = e\left(p,u^0\right) - e\left(p,u^N\right) = CV\left(p,u^0,u^1\right) - y\ .$$

5. At x_1^{CV}, $e\left(p,u^0\right) - e\left(p,u^1\right)$

$$= \left(x_0^D + p_1 x_1^{CV}\right) - \left(x_0^F + p_1 x_1^{CV}\right) \Rightarrow x_0\Big|_F^D = CV\left(p,u^0,u^1\right)\ .$$

6. At x_1^{CV}, $e\left(1,u^0\right)-e\left(p,u^1\right)=\left(x_0^E+x_1^{CV}\right)-\left(x_0^F+p_1x_1^{CV}\right)$

$$=x_0\Big|_F^E-t_1x_1^{CV}=0\Rightarrow x_0\Big|_F^E=G\left(p,u^0\right).$$

7. At x_1^{CV}, $e\left(p,u^0\right)-e\left(1,u^0\right)$

$$=\left(x_0^D+p_1x_1^{CV}\right)-\left(x_0^E+p_1x_1^{CV}\right)\Rightarrow x_0\Big|_E^D=EB\left(p,u^0\right).$$

8. It may also be expressed in terms of elasticities; that is,

$$dEB^i\left(p,u^0\right)=-\sum_{j=1}^{N}t_jx_j\left(p,u^0\right)\eta_{ji}^C\frac{dt_i}{1+t_i}$$

where η_{ji}^C are compensated price elasticities of demand.

9. The mean value of a linear function of one variable multiplied by the change in that variable provides an exact measure of the area under the corresponding curve. Thus, for the linear demand curve

$$x=x\left(p\right)=a-bp;\ \ a,b>0,\ \int_{p^0}^{p^1}x\left(p\right)dp=-\bar{x}\Delta p$$

where $\bar{x}=(x^0+x^1)/2$. If $p=1+t$ and taxes change, then $\Delta p=\Delta t$, the change in Marshallian or Hicksian consumer's surplus is $-\bar{x}\Delta t$, the change in uncompensated or compensated tax revenue is $t_1\Delta x+x_0\Delta t$, the "triangular area" is $(\bar{t}-t^1)\Delta x$, and the change in efficiency is $\bar{t}\Delta x$.

10. For example, before the introduction of tax preferences for registered retirement savings plans (RRSPs) in Canada, this type of savings did not exist. Contributions to an RRSP are tax deductible, the investment income in it is tax deferred, and payments from it are taxable.

11. From equation 2.16, $\Delta x_0=-p_2^2x_2=-(1+\tau_2)x_2$.

12. This situation is equivalent to that of life-cycle savings in which the numeraire represents consumption, good 1 represents a traditional unsheltered savings vehicle, and good 2 represents savings in the form of an RRSP. The (normalized) price of savings is given generally by $\pi_j=1+\tau_j=(1+r)^M/(1+r_j)^M$, $j=1,2$, where r_j is the after-tax rate of return, r is the pretax rate of return, and M is the period over which the investment is held. For an RRSP, $(1+r_2)^M=(1+r)^M\Rightarrow\tau_2=0$; that is, the effective rate of tax on income from savings in this form is zero.

13. Continuing with the example from the previous note, it is assumed that savings in the unsheltered vehicle is in the form of debt and that the interest earned is subject to income tax only at maturity. The effective rate of income tax on this

savings is then $\tau = \{t[(1 + r)^M - 1]\}/(1 + r)^M (1 - t) + t = 0.38$, if $r = 0.12$, $M = 8$ years, and the statutory income tax rate, t, is 46.2 percent.

14. It is, of course, a simple matter to normalize α to lie between zero and unity; that is, $0 \leq \alpha = \alpha(1 + \tau)/(1 + \tau + \Delta\tau_2) \leq 1$.

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3
Tax Expenditures in Australia

Colin Brown
Treasury of Australia

The commonwealth government in Australia has published estimates of tax expenditures annually since 1980, when they were first included in an appendix to the 1980–81 Budget Statements. The first separate Tax Expenditures Statement (TES), providing detailed estimates of tax expenditures and the associated benchmarks, was published in October 1986. In 1998, the publication of annual tax expenditure estimates became a legislative requirement for the government under the Charter of Budget Honesty Act 1998.

The 2002 TES identifies 260 tax expenditures for 7 years, from 1998/99 to 2005/06. It provides estimates of tax expenditures based on actual data for the first 3 years of this period, and projections for the current year (that is, the year in which the TES is published) and the 3 subsequent years.

The TES is published annually, usually with or soon after the Mid-Year Economic and Fiscal Outlook statement. The list of tax expenditures encompasses both individuals and businesses. In Australia, there are three levels of government: the commonwealth, state and territory governments, and local government. The commonwealth TES details tax expenditures of the commonwealth government only.

What Is a Tax Expenditure?

Tax expenditures are tax concessions designed to provide a benefit for a specific activity or class of taxpayer. Negative tax expenditures occur when concessions impose a higher cost than benefit. Nearly all tax expenditures in the Australian TES are positive. They are delivered in several

The views expressed in this paper are those of the author and do not necessarily reflect the view of the Commonwealth of Australia Treasury or the Australian government.

ways: by granting a tax exemption, tax deduction, tax offset, or reduced tax rate or by deferring a tax liability.

The benefits of most tax expenditures can be delivered equally by direct expenditures. Hence, tax expenditures provide an alternative mechanism to direct expenditures for delivering government assistance or meeting government objectives. This explains the use of the term *tax expenditures*—they are substitutes for expenditure, delivered through the tax system. Accordingly, tax expenditures have an effect on the budget position like that of direct expenditures.

Estimating the value of a tax expenditure requires identifying tax arrangements that would normally apply, so that the nature and extent of the concession can be established. The tax treatment that otherwise applies becomes the *benchmark*. Benchmark tax treatment should neither favor nor disadvantage similarly placed activities or classes of taxpayer. Tax expenditures are then defined as deviations from the benchmark.

Not all tax concessions are necessarily classified as tax expenditures in Australia. Some concessions are viewed as structural features of the tax system and thus are incorporated into the benchmark. For example, people who have lower incomes pay a lower marginal rate of income tax than people who have higher incomes. Although this lower rate could be interpreted as a concessional, progressive marginal tax rates are considered an integral design feature of the Australian tax system. On that basis, lower marginal tax rates are not identified as tax expenditures.

There is an element of judgment involved in identifying which elements of the tax system are tax expenditures and which are structural features, given the diversity of tax arrangements. This fact makes international comparisons of tax expenditures difficult to interpret.

Purpose of the Tax Expenditures Statement

The Australian TES serves two broad objectives:

1. To describe the benchmarks of the tax system and the extent to which the tax system deviates from these benchmarks so as to inform the public debate and contribute to the discussion of the design of the tax system
2. To facilitate the assessment of tax expenditures alongside direct expenditures

With respect to the second objective, the publication of tax expenditure data makes it possible to review expenditures and assess whether objectives are being met at reasonable cost. It also facilitates a comparable degree of scrutiny of tax expenditures and direct expenditures.

The importance of reviewing tax expenditures can be seen by looking at the proportion of total government assistance provided through such expenditures relative to direct outlays. In Australia, tax expenditures account for about 15 percent of total government assistance (that is, tax expenditures plus direct expenditures of government).

Direct government expenditures are generally subject to considerable scrutiny by the public sector (during the annual budget process) and by Parliament and parliamentary committees, the media, and the general public. In part, this scrutiny stems from the need to gain parliamentary approval each year for the level and composition of a substantial proportion of government expenditure. In contrast, concessional arrangements that give rise to tax expenditures usually require approval from Parliament only when they are introduced. Furthermore, the cost of tax expenditures is generally not directly observable because the government does not receive the forgone tax revenue from concessionally taxed activities.

Preparing estimates of tax expenditures makes it possible to monitor trends in tax expenditures and to analyze the reasons for any changes or growth. This information can be critical for budget planning. For instance, table 3.1 (reproduced from the 2002 TES) shows tax expenditures, as a proportion of gross domestic product (GDP), are projected to fall from 4.5 percent in 2000/01 to 3.7 percent in 2004/05. This decline largely reflects the policy decision to remove accelerated depreciation for plant and equipment for businesses that have an annual turnover of AUD 1 million or more, beginning in September 1999. This decision was a major element in the Review of Business Tax reform measures announced in 1999. This example illustrates the utility of a tax expenditures statement for monitoring the effect of major tax changes.

Finally, publishing tax expenditure data facilitates a more comprehensive assessment of commonwealth government activity. As noted, tax expenditures often substitute for direct expenditures. Accordingly, unless both direct expenditures and tax expenditures are considered, the apparent size of government could be reduced simply by replacing direct expenditure by tax expenditures.

Measuring Tax Expenditures

The Revenue Forgone Approach

Tax expenditures can be measured in three principal ways: revenue forgone, revenue gain, and outlay equivalence (described in chapter 1). Australia uses the revenue forgone approach to calculate tax expenditures, as that method provides the most reliable estimation for calculating the level of taxpayer assistance provided through the tax system. The

Table 3.1. Total Measured Tax Expenditures

Year	*Retirement (AUD million)*	*Other tax expenditures (AUD million)*	*Total (AUD million)*	*Tax expenditures as a proportion of GDP (%)*
1998/99 (estimate)	10,100	16,091	26,191	4.4
1999/2000 (estimate)	10,410	17,258	27,668	4.4
2000/01 (estimate)	9,820	20,497	30,317	4.5
2001/02 (estimate)	9,770	20,132	29,902	4.2
2002/03 (projected)	10,590	19,681	30,271	4.0
2003/04 (projected)	11,210	18,756	29,966	3.8
2004/05 (projected)	11,890	19,413	31,303	3.7
2005/06 (projected)	12,550	20,346	32,896	3.7

Source: 2002 TES.
Note: Total measured tax expenditures are derived by summing the individual tax expenditure estimates provided in table 5.1 of the 2002 TES, excluding estimates that are less than some number, rounded to zero, or not available.

revenue forgone approach shows tax expenditures as the difference in tax paid by taxpayers receiving a specific concession and tax paid by similar taxpayers not receiving that concession.

Modeling Techniques for Estimating Tax Expenditures

The method used to calculate estimates of individual tax expenditures in Australia varies by item. The approach depends on the nature of the benchmark, the particular concession examined, and the availability of data. Data availability is also a major factor in determining the reliability of the estimates. Broad approaches used to estimate tax expenditures include aggregate modeling, distributional modeling, and microsimulation.

Aggregate Modeling

This approach involves using information on the aggregate volume of transactions to calculate the value of a particular tax concession. This approach is most appropriate where the value of a concession is a simple proportion of the total transactions concerned and in the case of tax exemptions. Data sources that can be used for aggregate modeling include national accounting data, aggregates derived from administrative databases (such as tax records), and trade and production statistics.

This type of modeling is used to estimate tax expenditures in areas such as fuel excise, where exemptions or reduced rates of excise for particular fuels can be estimated from statistics on the volume of those fuels produced.

Distributional Modeling

This approach involves using more detailed distributional data to calculate the effect of tax concessions for particular segments of the population identified in that data. It is most appropriate where concessions are directed toward particular taxpayer groups and where levels of assistance change according to variables used to analyze the data. Data sources that could be used for distributional modeling include survey data and data derived from administrative databases.

Distributional modeling is used to estimate tax expenditures in areas such as personal income tax concessions, the costs of which are related to the taxable income level of taxpayers. In this case, data on income distribution and tax concessions by grade of taxable income can be used to estimate the cost of the tax expenditure on those concessions. In Australia, such information is available from administrative datasets.

Microsimulation

Microsimulation involves examining detailed taxpayer records (for example, administrative datasets from tax records) to determine the value of the taxable transactions for each taxpayer and the amount of tax paid on those transactions. This information is used to calculate how much tax would apply to those transactions under the benchmark tax treatment and then to calculate the value of the tax expenditure by subtracting the actual tax from the benchmark amount. This approach requires a comprehensive database for all taxpayers that contains sufficiently detailed information on the value of transactions affecting the calculation of tax liabilities.

The approach is especially useful for evaluating concessions that are closely targeted to particular groups of taxpayers (for instance, benefits that are subject to detailed eligibility tests) and for which the payment rate varies considerably according to taxpayer behavior or circumstance. Microsimulation modeling also can be used to derive data for use with other, more aggregated data. This approach uses the microsimulation model to derive key information, such as the average effective tax rates, to use in other models. This approach may be necessary if the microsimulation data are available only for some periods but aggregate data on transactions are available for (usually) more recent periods.

This approach is also useful in cases in which an estimate of a tax expenditure can be calculated using an aggregate or distributional model approach if the appropriate values for key variables can be obtained. For instance, in Australia, farmers are able to make tax concessional savings through farm management deposits (FMDs), which are tax deductible. Data for the aggregate value of these deductible contributions are available from administrative data derived from financial institutions, and

these data are available well before tax administrative data become available. Deriving the value of the total tax expenditure on FMDs for the most recent period requires knowing the average marginal tax rate of depositors to FMDs, which can be estimated by a microsimulation analysis of tax data for previous years.

Interpretation of Tax Expenditure Estimates

Some caution is needed when using tax expenditure estimates for broader purposes, such as estimating the amount of tax revenue forgone as a result of tax provisions. Under the revenue forgone approach used by Australia, tax expenditure estimates identify the financial benefits derived by individuals or businesses that receive concessions. However, because of behavioral responses by the recipients of tax expenditures, it does not necessarily follow that there would be an equivalent increase in commonwealth revenue from the abolition of a tax expenditure.

Concessionally taxed activities tend to expand in response to the introduction of a concession. Accordingly, the same activity would be expected to contract if the related tax expenditure was abolished, with consequent implications for potential revenue flows from the taxation of this activity. Other responses may follow, in that

- The removal of one concession may result in increased use of other concessionally taxed activities, lowering tax revenue elsewhere.
- Under a progressive income tax system, the removal of a tax expenditure may result in some taxpayers moving into a higher marginal tax bracket—providing a boost to tax revenue.

In most cases, the net effect of these influences on revenue is likely to be unclear. Furthermore, in cases where the level of activity is highly sensitive to the existence of the concession, the increase in revenue from removing this tax expenditure could be very small. In these cases, reporting tax expenditure estimates as the cost to revenue would give the impression that the tax expenditure has little material effect, when in fact the financial benefits derived by the recipients could be quite large. Therefore, for the purposes of the TES, it is neither practical nor desirable to incorporate potential responses to the removal of a tax expenditure into the estimates.

Finally, tax expenditure estimates may, in some cases, differ from budget estimates of the cost of a provision, because tax expenditures are estimated relative to designated benchmarks, whereas budget costs are measured relative to the government's forward estimates of revenue. For example, the tax expenditures for the capital gains tax (CGT) discounts

applying to individuals are measured relative to a benchmark of full taxation of capital gains. The estimates reflect the projected level of capital gains realization following the introduction of the concession on October 1, 1999. In contrast, the budget estimates for implementing these measures take into account the offsetting effects on revenue of removing CGT indexation and averaging, as well as the revenue dividend arising from increased realizations.

Defining Tax Expenditure Benchmarks

What Is a Tax Expenditure Benchmark?

A basic requirement in any analysis of tax expenditures is to identify the regular tax arrangements that apply to similar classes of taxpayers or types of activity. These arrangements—referred to as the benchmark—represent a reference point against which to establish the nature and extent of any concession. Tax expenditures are defined as deviations from the benchmark.

Establishing an appropriate benchmark for determining tax expenditures often involves an element of judgment: benchmarks may vary across countries and within countries over time. The principal criterion of benchmark design is that the benchmark should represent a consistent tax treatment of similar activities or classes of taxpayers. That is, a benchmark tax treatment should neither favor nor disadvantage similarly placed activities or classes of taxpayers. For example, the ability of Australian primary producers to average their yearly incomes over time is a tax benefit not available to all income taxpayers. In this case, the estimated benefit to primary producers is measured by comparing the income tax they pay with the income tax paid by other taxpayers who have similar incomes but are ineligible to access this concession. The benchmark is the income tax rate structure that would generally apply to yearly income.

Since most Australian taxes are imposed on income (as opposed to consumption), the definition of income is important when determining what constitutes a tax expenditure. The Australian TES uses the Schanz-Haig-Simons (SHS) definition, which is the increase in economic wealth between two points in time, plus consumption in that period. In this definition of income, *consumption* includes all expenditures except those incurred in earning or producing income.

The SHS definition is very broad; it measures income by its effect on a person's wealth and the level of consumption in a given period. As such, it has the advantage of not depending on legislative definitions, which often may include implicit tax concessions (or tax penalties) that need to be measured in a tax expenditure statement. In practice, the SHS

definition provides guidance as to what a comprehensive definition of income should encompass. It should include all types of income paid to a person, such as wages, interest, dividends, royalties, other investment income, and business profits, as well as the increase in value of the person's assets, such as increases in property values and the value of shares and other investments.

The SHS definition of income does not correspond to the definition of income used in legislation, which generally seeks to identify particular payment flows or transactions as income and sum those to determine taxable income. However, the SHS definition does provide a good basis for determining which flows should be treated as income for the purposes of the benchmark.

Box 3.1 shows that the theoretical SHS definition and a definition of income based on measuring particular flows can give the same level of income. Income is not the only tax base covered by tax expenditures. Other tax bases include consumption taxes of various types and taxes on particular transactions.

The Australian Approach to Benchmarking

The Australian TES adopts a practical approach to defining benchmarks, because the adoption of an ideal benchmark based on the pure SHS definition would result in many additional tax expenditures of little policy relevance. In particular, provisions considered to be intrinsic to the operation of the tax system have been incorporated into the benchmarks, rather than being classified as tax expenditures themselves. However, where the inclusion of a feature of the tax system in the benchmark is questionable, that feature has generally been reported as a tax expenditure.

Some features of the tax system have been incorporated into the benchmark as a practical necessity. For example, taxing unrealized gains on a large range of assets and taxing the imputed rent from consumer durables would not be practical. Hence, these features form part of the benchmark.

For the purpose of providing a clear structure for the reporting of tax expenditures, five major components of the benchmark have been identified:

1. Personal income tax
2. Retirement benefits
3. Fringe benefits tax
4. Business tax
5. Excise duty

Although the association of some tax expenditures with a particular benchmark may be arbitrary, it does not affect the measurement or exis-

Box 3.1. How the SHS Definition of Income Works: An Example

Assume person X

- Starts the year with a bank balance of AUD 10,000 and other assets with a value of AUD 50,000
- Earns wage income of AUD 15,000
- Has assets that increase in value by AUD 3,000
- Consumes goods and services worth AUD 20,000
- Sells AUD 4,000 of assets
- Withdraws AUD 1,000 from the bank

Under the SHS definition of income, this person's income would be calculated based on the change in assets:

Bank	–1,000
Other assets: AUD 3,000 – AUD 4,000 =	–1,000
Consumption	20,000
Total	18,000

Alternatively (assuming capital gains are fully taxed on accrual), the person's income could be calculated as being equal to

Wages	15,000
Capital gains	3,000
Total	18,000

tence of a tax expenditure. The business tax benchmark and the personal income tax benchmark are not mutually exclusive. The distinction is that income derived from investment and production-based activities for all types of taxpayers is reported against the business tax benchmark. The key exception is investment related to retirement benefits, which is treated under the retirement benefits benchmark.

General Features of the Taxation Benchmark

The following features are common to all major components of the benchmark:

- The accounting period is the single financial year. Averaging provisions, available only to selected classes of taxpayers (such as primary producers), are regarded as tax expenditures; however, carryforward loss provisions are considered part of the benchmark.

- A nominal, rather than real, income benchmark is adopted, with some ad hoc adjustments for inflation.
- Income is assessed on an accrual basis using a tax liability method (see appendix A). However, those provisions under which income is assessed on a realization basis are considered intrinsic features of the tax system and, hence, are incorporated into the benchmark (see appendix A).

Benchmarks Used in the Australian Tax Expenditures Statement

Details of the benchmarks in the Australian TES and the various items included and excluded from them appear in appendix B. In summary, five benchmarks are used:

1. *Personal income tax benchmark*. This benchmark is used to assess the value of tax expenditures provided to individuals that affect the tax paid on individual earnings. Generally, it applies to wage and salary earnings. Tax expenditures associated with business and investment activities as well as retirement savings are assessed under separate benchmarks.
2. *Retirement benefits benchmark*. Particular concessional tax arrangements apply to retirement savings in Australia, so the value of the tax expenditure associated with these concessions is assessed under a separate benchmark to ensure that they are properly identified. Under this benchmark, retirement benefits receive the same tax treatment as that which applies to ordinary remuneration and savings.
3. *Fringe benefits tax benchmark*. Nonsalary or nonwage benefits provided by employers to their employees are subject to a separate tax in the hands of the employer, and they are designed to ensure that such benefits do not receive more favorable tax treatment than an equivalent amount of wage or salary income. The fringe benefits tax benchmark is used to assess the cost of concessions provided under the fringe benefits tax arrangements.
4. *Business tax benchmark*. This benchmark is used to assess the value of tax expenditures provided to business activities, including tax expenditures associated with investment and financing transactions and with the capital gains tax.
5. *Excise duty benchmark*. This benchmark is used to assess the value of tax expenditures associated with excise taxes on fuels, alcohol, and tobacco.

The Australian TES does not include tax expenditures for the goods and services tax (GST). The GST is imposed and collected by the commonwealth government on behalf of the states and territories. As all GST

revenue is paid to the states and territories, the GST is treated as a state tax, and tax expenditures are not reported in the commonwealth TES.

Classification of Tax Expenditures

Tax expenditures in Australia are classified in three ways:

- Broad economic function
- Type of taxpayer affected
- Particular benchmark to which they relate

Classification by Broad Economic Function

The classification of tax expenditures by broad economic function enables the identification of tax expenditures by their general purpose. The functional breakdown can then be compared with direct budget outlays classified by the same functional areas to determine the total level of assistance provided by the government.

For example, table 3.2, reproduced from the 2002 TES, compares the level of tax expenditures in Australia classified by function from 1999/2000 with the projected level expected by 2005/06. Table 3.3 compares aggregate tax expenditures by function with the corresponding direct expenditures for 2001/02. The list of direct expenditures by function in table 3.3 is reproduced from the 2001/02 Final Budget Outcome.

Both tables facilitate analysis of assistance provided through tax expenditures to different functional areas, and, with the incorporation of information on the corresponding direct budget expenditures, table 3.3 allows analysis of the total levels of government support provided to different areas.

For instance, table 3.3 shows that compared with the sum of both total measured tax expenditures and total direct expenditure, 15 percent of total government assistance in Australia is provided through tax expenditures. The proportion of government assistance delivered through tax expenditures, however, varies greatly by functional category. In most cases, the assistance provided by direct expenditure significantly exceeds the benefit provided by tax expenditures. However, analyzing tax expenditures by functional area makes it possible to identify exceptions to this rule.

Care needs to be taken with such analysis. Although comparisons between tax expenditures and direct expenditures are informative in broad terms, the costing is not strictly comparable for the following reasons:

- A tax expenditure tends to provide a higher benefit than a direct expenditure of the same magnitude. Direct expenditures are often

Table 3.2. Aggregate Tax Expenditures by Function (*in AUD millions*)

	Estimates			*Projections*			
	1999/2000	*2000/01*	*2001/02*	*2002/03*	*2003/04*	*2004/05*	*2005/06*
General public services:							
Legislative and executive affairs	3	2	4	4	2	4	4
Financial and fiscal affairs	0	0	0	0	0	0	0
Foreign economic aid	275	245	265	335	360	400	440
General research	0	0	0	0	0	0	0
General services	8	13	12	13	13	13	14
Government retirement benefits	0	0	0	0	0	0	0
Defense	108	95	96	101	101	101	101
Public order and safety	0	0	0	0	0	0	0
Education	8	6	6	6	7	7	7
Health	1,020	1,315	1,535	1,540	1,525	1,615	1,780
Social security and welfare	17,558	18,192	17,900	19,020	19,993	21,119	22,295
Housing and community amenities	210	250	245	260	265	270	280
Recreation and culture	66	62	45	45	74	69	84
Fuel and energy	1,630	1,750	1,670	1,635	1,655	1,685	1,700
Agriculture, fisheries, and forestry	230	310	451	788	150	157	159
Mining and mineral resources (other than fuels), manufacturing, and construction	3,104	2,588	1,728	914	247	–39	–236
Transport and communications	35	40	50	50	50	50	50
Other economic affairs:							
Tourism and area promotion	85	85	70	60	65	65	70
Labor and employment affairs	17	22	21	13	9	9	9

Other economic affairs, not elsewhere included	1,411	3,543	4,072	3,714	3,450	3,745	4,229
Other purposes:							
Public debt interest	0	0	0	0	0	0	0
Nominal retirement interest	0	0	0	0	0	0	0
General purpose intergovernment transactions	0	0	0	0	0	0	0
Natural disaster relief	1	0	0	0	0	0	0
Contingency reserve	0	0	0	0	0	0	0
Asset sales	0	0	0	0	0	0	0
Not allocated to function	1,899	1,799	1,732	1,773	2,000	2,033	1,910
Total	27,668	30,317	29,902	30,271	29,966	31,303	32,896

Source: 2002 TES.

Note: Total tax expenditures by functional category are derived by summing the individual tax expenditure estimates provided in table 5.1 of the 2002 TES, excluding items with estimates listed as being less than AUD *X* million, rounded to zero, or not available. Totals may not sum because of rounding.

Table 3.3. Aggregate Tax Expenditures and Direct Expenditures by Function in 2001/02 (*in AUD millions*)

	Tax expenditures	*Direct expenditures*
General public services:		
Legislative and executive affairs	4	778
Financial and fiscal affairs	0	3,567
Foreign economic aid	265	2,151
General research	0	1,698
General services	12	550
Government retirement benefits	0	1,497
Defense	96	12,017
Public order and safety	0	1,856
Education	6	11,761
Health	1,535	27,614
Social security and welfare	17,900	69,081
Housing and community amenities	245	2,210
Recreation and culture	45	2,036
Fuel and energy	1,670	3,052
Agriculture, fisheries, and forestry	451	1,691
Mining and mineral resources (other than fuels), manufacturing, and construction	1,728	1,686
Transport and communications	50	2,647
Other economic affairs:		
Tourism and area promotion	70	142
Labor and employment affairs	21	3,243
Other economic affairs, not elsewhere included	4,072	513
Other purposes:		
Public debt interest	0	4,995
Nominal retirement interest	0	4,987
General purpose intergovernment transactions	0	6,561
Natural disaster relief	0	87
Contingency reserve	0	0
Asset sales	0	64
Not allocated to function	1,732	0
Total	29,902	166,482

Source: 2002 TES.

Note: Total tax expenditures by functional category are derived by summing the individual tax expenditure estimates provided in table 5.1 of the 2002 TES, excluding items with estimates listed as being less than AUD *X* million, rounded to zero, or not available. Totals may not sum because of rounding.

taxable, whereas tax expenditures are not. Therefore, a direct expenditure will, in some circumstances, have a smaller net budgetary effect than a tax expenditure of equivalent nominal value.
- The removal of a tax expenditure or a direct expenditure of the same magnitude may have different effects on the underlying fiscal balance.

Classification by Type of Taxpayer

Classification by type of taxpayer makes it possible to identify which groups of taxpayers within the Australian community benefit most from tax expenditures. Although many tax expenditures may be accessed by more than one taxpayer group, they are often targeted to specific taxpayer groups. The purpose of this analysis is to provide an overall picture of the direction of tax expenditures, despite the difficulty of determining the ultimate beneficiary of the assistance.

For purpose of this analysis, the classification of taxpayer affected is based on the legal incidence of the tax. Legal incidence should not be confused with the economic incidence of a tax measure. *Legal incidence* refers to the taxpayer on whom the tax is levied. In contrast, the *economic incidence* of a tax relates to the taxpayer bearing the cost of a tax or benefiting from a tax expenditure. Economic incidence will differ from legal incidence if the group bearing the legal incidence is able to pass on some or all of the cost or benefit of the tax and, thus, have it affect prices (including factor prices, such as wages and the return on capital). For instance, the legal incidence of a tax expenditure may be on the manufacturer of a product; however, the economic incidence may actually fall on consumers of the product through a change in price.

The major influences behind changes in taxpayer-affected aggregates are generally the same as those shown in tables 3.2 and 3.3. For instance, tax expenditures shown as directed to agriculture, forestry, and fishing in tables 3.2 and 3.3 correspond closely to the assistance directed to primary producers in table 3.4.

Classification by Tax Expenditure Benchmark

The Australian TES also lists in detail individual tax expenditure items, grouped by the benchmark to which they relate. This list permits a detailed examination of each tax expenditure, and, taking into account the relevant benchmark, the identification of how the specific tax expenditure came about. This list is then used to compile lists of tax expenditures classified by functional area and taxpayer type, as shown in tables 3.2 to 3.4.

Table 3.4. Aggregate Tax Expenditures by Taxpayer Affected (*in AUD millions*)

	Estimates				*Projections*			
Taxpayer	*1998/99*	*1999/2000*	*2000/01*	*2001/02*	*2002/03*	*2003/04*	*2004/05*	*2005/06*
Businesses	4,870	5,219	6,068	4,798	3,517	2,520	2,451	2,658
Defense	407	438	465	476	501	511	531	551
Donors	230	250	300	330	350	380	420	450
Employees	1,550	1,470	1,275	1,225	1,170	1,115	1,065	1,010
Employers	1,098	1,133	1,118	1,128	1,150	1,381	1,421	1,466
Financial institutions	40	35	150	175	155	155	155	20
Government	95	90	95	95	85	90	95	95
Hospitals	145	155	115	120	125	125	130	135
Retirement funds and beneficiaries	10,100	10,410	9,820	9,770	10,590	11,210	11,890	12,550
Nonprofit organizations	540	575	625	725	744	779	799	824
Personal income taxpayers	2,743	3,232	5,930	6,994	7,328	7,643	8,145	8,808
Retirees or allowees	3,335	3,570	3,215	2,762	2,840	2,920	3,020	3,110
Property owners	0	0	0	0	0	0	0	0
Primary producers	219	230	310	451	788	150	157	159
Students	8	8	6	6	6	7	7	7
Nonresidents	800	830	810	830	905	965	1,000	1,035
Miscellaneous[a]	11	23	15	17	17	15	17	18
Total	26,191	27,668	30,317	29,902	30,271	29,966	31,303	32,896

a. Expenditures included in the miscellaneous category are those for which the taxpayer affected does not belong to any of the other identified categories.

Note: Total tax expenditures by taxpayer affected are derived by summing the individual tax expenditure estimates provided in table 5.1 of the 2002 TES, excluding items with estimates listed as being less than AUD *X* million, rounded to zero, or not available. Totals may not sum because of rounding.

Source: 2002 TES.

Conclusion

A comprehensive tax expenditure statement provides important information for determining the total level of assistance provided by governments to particular taxpayers or activities. This information can help governments (a) assess claims for increased assistance from particular groups of taxpayers or (b) determine priorities for allocating further government resources. Identification of tax expenditures and their magnitude also is an important first step in any comprehensive review of tax expenditures as part of tax reform.

The detailed form that a tax expenditure statement takes is shaped by the structure and design of a country's tax system. The most important principle in designing benchmarks is that the benchmark should represent the normal tax treatment of taxpayers. Thus, tax expenditures are identified as departures from normal tax treatment. Most tax systems impose a diversity of taxes and will, therefore, require several benchmarks to accommodate each structural element of the system.

A tax expenditure statement should be as comprehensive as possible, covering all taxes levied by a government. Hence, all forms of tax assistance are accounted for in any assessment of the overall assistance provided by the government to taxpayers.

The most important factor limiting the preparation of tax expenditure estimates will be the availability of sufficiently detailed and reliable data. The best initial source often will be data from tax returns provided by taxpayers. Other sources of data, such as national accounts information, population and industry surveys, and trade and production statistics, provide valuable means of independently calculating tax bases both to estimate the value of tax expenditures and to check such estimates. The data available will be an important determinant of how the estimates are presented. For instance, presenting reliable estimates by industry or region will not be possible unless disaggregated data are also available on that basis and those data include taxpayers whose operations cover more than one industry or region.

Finally, care needs to be taken in interpreting tax expenditure estimates. In particular, the difference between tax expenditures and budget effects should be borne in mind. Tax expenditures are estimates of the level of assistance a concessionally taxed taxpayer receives, relative to a similar taxpayer who is not concessionally taxed. Tax expenditures are not estimates of the budget effect of abolishing a concession, because changes in taxpayer behavior will also be a factor in such estimates.

Appendix A
Cash versus Accrual Estimates

The accounting framework used to measure tax expenditures has an important bearing on the timing and level of tax expenditures.

The commonwealth government has completed a phased transition from cash to accrual budgeting. Historically, cash accounting underpinned the production of public accounts. The 2002 TES was the fourth TES prepared on an accrual basis (the government finance statistics basis) using the tax liability method (TLM) of revenue recognition.

The fundamental distinction between cash and accrual accounting is one of timing—cash accounting records the transaction when the cash is exchanged; accrual accounting records financial flow at the time economic value is created, transformed, exchanged, transferred, or extinguished, whether or not cash is exchanged at the time.

Under the TLM, the commonwealth is deemed to have accrued revenue at the time the taxpayer makes a self-assessment or when an assessment of tax liability is raised by the Australian Taxation Office or the Australian Customs Service. In many instances, this method retains elements of cash revenue recognition, for example, where assessment and payment occur at the same time.

An alternative method of revenue recognition is the economic transaction method (ETM), under which the commonwealth is deemed to have accrued revenue at the time the relevant economic or financial transaction occurs. For example, corporate income tax would be accrued in the year a company earned the income, rather than when the tax assessment is issued and payment is required (which can be up to 18 months later).

In general, ETM is more consistent with accrual accounting principles. With respect to tax revenue, however, the commonwealth considers that at this stage the TLM provides a more robust and reliable basis for forecasting revenue than the ETM.

The introduction of accrual budgeting required a minor modification in the terminology used to describe government expenditures, referred to as *outlays* under cash budgeting. The term *outlays* is generally applied to cash payments. Under accrual accounting, the equivalent concept is called *expenses*. *Expenditure* is a neutral term that does not necessarily apply to one accounting basis or the other.

Appendix B
Details of the Australian Tax Expenditure Benchmarks

The Australian TES is prepared using five principal benchmarks, details of which are delineated below.

The Personal Income Tax Benchmark

The following features are a part of the personal income tax benchmark (and, therefore, are not identified as tax expenditures):

- The legislated progressive rate scale for personal income tax includes the tax-free threshold and Medicare levy. The income tax rebate for low-income earners has been excluded from the benchmark—and, therefore, has been identified as a tax expenditure—on the grounds that it provides assistance to a distinct class of taxpayer and could be replaced by a direct expenditure.
- The individual is the tax unit. Consequently, tax expenditures arise where taxpayers' liabilities are modified according to their dependent care responsibilities (for example, the dependent spouse rebate).
- Imputed rent from owner-occupied housing and the income received from inheritances are not taxable. The expenses incurred in earning imputed rent are not deductible.
- Personal cash transfers (that is, cash payments made by the government to individuals for reasons other than services rendered) including any refundable tax-offset equivalents are taxable. (Unlike an ordinary tax offset, a refundable tax offset is paid even if an individual does not have a tax liability. It is essentially a cash payment from the tax system. Examples include the family tax benefit and the private health insurance tax offset, which can be paid either as an expense or through the tax system.) Therefore, any nonrefundable tax offsets or exemptions from tax are treated as tax expenditures.
- Beginning with the 2002/03 Commonwealth Budget, refundable tax offsets are identified as an expense and are, therefore, no longer treated as tax expenditures. Before that time, they were treated as either expenses or tax expenditures.
- Australian residents are assessed on their worldwide income. Foreign tax credits are provided up to the amount of Australian tax payable on the Australian resident's foreign income. Nonresidents are taxed on

Australian-source income only. Specific rules pertain to arriving and departing residents and intermediate categories such as temporary residents.
- Exemptions are provided for sovereign immunity and some international tax rights.
- Expenses incurred in earning assessable income are deductible. The main exceptions, when they are treated as tax expenditures, are deductions for depreciation if they provide more generous treatment than effective life depreciation; provisions that defer deductions, which are identified as negative tax expenditures; and deductions claimed on the basis of statutory formulas that yield a larger deduction than the actual cost incurred.

The Retirement Benefits Benchmark

The following features are a part of the benchmark for retirement and other employment termination benefits:

- Remuneration for employment is deductible for taxable employers and fully taxable for the employee.
- Additions to savings are financed out of after-tax income.
- Investment income on savings is taxed in the income year it is derived.
- Capital gains are subject to full taxation at the time of realization. This treatment corresponds with that of capital gains earned by companies under the business tax benchmark.
- Savings (including interest) that have already been taxed are not taxed on withdrawal.

The Fringe Benefits Tax Benchmark

The following features are a part of the fringe benefits tax (FBT) benchmark:

- FBT applies to all nonsalary and nonwage benefits provided to employees or associates (unless their wage or salary income is exempt from personal income tax). All employers providing such benefits are liable for FBT.
- FBT is levied at the maximum personal income tax rate, including the Medicare levy. Although potential negative tax expenditures arise where employees who receive fringe benefits face marginal personal income tax rates below the maximum rate, this feature is accepted as part of the benchmark, as the effective administration of FBT requires that it be levied at a single rate.

- The benchmark value of a fringe benefit to an employee is taken to be its market value, less any contribution paid by the employee. In some cases, statutory formulas are available to calculate the taxable value of the benefit. As for the substantiation rules, tax expenditures are deemed to arise if the formulas provide a concession to taxpayers, as in the case of car benefits.

FBT is applied to the tax-inclusive value of the fringe benefits and is deductible for the employer. From July 1, 2000, a grossed-up rate, inclusive of GST, applies to the provision of benefits to an employee where those benefits would attract GST if acquired directly by the employee. A special rebate applies to nongovernmental entities that are exempt from income tax but subject to FBT, and this rebate is treated as a tax expenditure.

The Business Tax Benchmark

The following features are a part of the business tax benchmark:

- Capital gains tax applies to the full consideration of realized nominal gains and losses. (This rule is consistent with the treatment of capital gains and losses of companies for assets acquired after September 21, 1999.) The following exemptions also are considered intrinsic features of the tax system and included as a part of the CGT benchmark:
  - CGT exemption for gains on assets acquired before September 20, 1985
  - CGT exemption for gains received by way of compensation or damages for any wrong or injury suffered by a taxpayer
  - CGT exemption for gains or winnings from gambling
  - CGT rollover relief on the death of a taxpayer or on the transfer of assets between divorcing spouses

  However, capital receipts that are specifically exempt under the CGT provisions are classified as tax expenditures, such as the CGT exemption for cultural bequests and cultural gifts.
- Expenses incurred in earning assessable income are deductible, broadly in accordance with the change in value over the life of the service or asset purchased:
  - Provisions that defer deductions are identified as negative tax expenditures.
  - For depreciable assets, the benchmark is depreciation over the effective life of the asset.
  - The benchmark for advance expenditure (prepayments) on services is generally full apportionment over the service period.

  - If an asset is held for both income-producing and private purposes, deductions should be limited to the portion of expenses relating to the monetary income.
- The benchmark incorporates the imputation system of company taxation.
  - Under imputation, the value of concessions is offset to some degree, as such concessions reduce corporate income tax paid. The subsequent taxation, in the hands of shareholders, of dividends paid out of tax-preferred income (also incurred under the classical system) is not posted because of the practical difficulties in doing so.
  - The tax treatment of cooperative companies departs from that of other companies under the imputation system. Tax expenditures arise if the income and distributions of cooperative companies receive concessional treatment.
- The tax rules that apply to sole traders, partnerships, and trusts, which are not separate taxable entities, are regarded as design features of the tax system.
- From July 1, 2002, wholly owned groups that consolidate are treated as a single entity for income tax purposes. Consolidated groups can transfer assets and tax attributes within the group without any income tax consequences. Beginning July 1, 2002, transitional provisions extend access to the grouping rules for wholly owned company groups that do not consolidate.
- From January 1, 2003, investment income derived by friendly societies that is attributable to income bonds, funeral policies, and scholarship plans is assessable. Friendly societies are entitled to a deduction for the investment component of the benefits paid out to policyholders (other than benefits paid from scholarship plans that are returned to investors rather than being applied for the benefit of nominated students). A deduction also is allowed for benefits applied to nominated students under scholarship plans that are currently subject to tax.
- Separate income tax scales are applicable to nonresident individual taxpayers.
- The dividend withholding tax, interest withholding tax, and royalty withholding tax, to the extent they apply to nonresidents, generally are included in the benchmark. The rights provided in Australia's double tax agreements (other than in the tax-sparing provisions) are also intrinsic to the tax system.
- Foreign dividend accounts, any foreign income account provisions, and the exemption from interest withholding tax for interest paid to nonresidents by an offshore banking trust are included.
- Foreign-source income is assessed for residents on a worldwide basis, with foreign tax credits limited to the amount of Australian tax payable on the foreign income. Tainted income (that is, passive

income, such as interest, royalties, and dividends, and highly mobile forms of active income) is assessed on an accrual basis. Most active foreign-source income is assessed on a repatriation basis, with a credit for any foreign tax paid.
  - An exemption from the operation of the foreign tax credit system is provided for branch income and certain nonportfolio dividends derived in a listed country. There is a tax expenditure for the amount that foreign tax, plus dividend withholding tax, is less than the amount of Australian tax payable.
  - Income derived by controlled foreign companies in broad exemption-listed countries is exempt from accrual taxation because of the presumption that it has been comparably taxed. There is a tax expenditure for the difference between foreign tax paid on a current basis and the tax that would have been payable in Australia.
  - Under the transferor trust rules, the amount of income available for distribution from a trust is taxed on an accrual basis. It is assumed that transferor trusts are used as passive investment vehicles and not for the conduct of active businesses. Most of the income of transferor trusts in broad exemption-listed countries is exempt from accrual taxation because of the presumption that it has been comparably taxed. There is also a tax expenditure if the amount of foreign tax paid on a current basis is less than the tax that would have been payable in Australia.
  - The benchmark for taxing foreign investment fund (FIF) interests is the taxation on an accrual basis of the amount of passive income available for distribution from the FIF to the Australian investor. The active income derived by the FIF and distributed to the Australian investor is taxed on a repatriation basis.
- The mutuality principle, which treats certain receipts as not being income, applies to nonprofit associations and societies. However, the global income tax exemptions for specified nonprofit organizations (for example, trade unions and cultural and sporting societies), which extend, for example, to investment income and income from business activities in competition with taxable entities, are treated as tax expenditures.
- Exemptions are provided for sovereign immunity and some international taxation rights.
- Starting in 1986/87, the benchmark for unprocessed petroleum products (crude oil, condensate, liquefied petroleum gas, and ethane) produced in offshore areas under the commonwealth's jurisdiction is petroleum resource rent tax. The benchmark for petroleum products produced in projects that commenced before July 1, 1986, is crude oil excise, which may continue to apply unless taxpayers elect to pay petroleum resource rent tax.

The Excise Duty Benchmark

The following features are a part of the excise duty benchmark:

- There are no exemptions for classes of taxpayers or activities.
- Imported petroleum, tobacco, beer, spirits, and other excisable alcoholic beverages of an alcohol strength not exceeding 10 percent, are subject to customs duty, which is analogous to excise duty on these items.
- The excise rate on unleaded petrol (which is also the rate for diesel) is the benchmark for petroleum fuels.
  - The higher excise rates on leaded petrol and high sulfur diesel are recognized as negative tax expenditures.
  - The lower excise rates on aviation gasoline, aviation turbine fuel, fuel oil, heating oil, and kerosene are recognized as tax expenditures.
  - The excise exemption for liquefied petroleum gas is recognized as a tax expenditure.
- The current excise rate on tobacco is the benchmark for all tobacco products. Per-stick taxation applies to cigarettes that have up to 0.8 grams of tobacco per stick. The per-stick excise rate on cigarettes that have 0.8 grams of tobacco per stick is recognized as equivalent to the excise rate on loose tobacco; therefore, it is not a tax expenditure. However, the excise rate on cigarettes that have less than 0.8 grams of tobacco per stick represents a negative tax expenditure, compared with the excise rate on other tobacco products.
- There are currently five different benchmarks for alcohol, reflecting alcohol type.
  - Three benchmarks for beer comprise the current excise rates for full-, mid-, and low-strength beer, packaged in individual containers not exceeding 48 liters. The excise-free threshold of 1.15 percent of alcohol, which applies to all beer, is included in all three benchmarks. The excise rate applied to full-strength beer, packaged in individual containers not exceeding 48 liters, is also the benchmark for other excisable beverages of an alcoholic strength not exceeding 10 percent.
  - The current excise rate on spirits is the benchmark for spirits; the lower excise rate on brandy is recognized as a tax expenditure.
  - The wine benchmark, which covers wine, alcoholic cider, and other alcoholic products, is based on the wine equalization tax (because these products are not subject to excise duty). The commonwealth cellar-door rebate on this tax, provided for certain direct sales by producers, either at their premises, by mail order, or over the Internet, is recognized as a tax expenditure.

4
From Tax Expenditure Reporting to Tax Policy Analysis: Some Experience from Belgium

Christian Valenduc
Ministry of Finance, Belgium

Tax expenditures are one of the instruments a government can use to implement specific policies. Governments also can intervene by direct spending or in nonbudgetary ways (price control and market access restrictions). The similarity between tax expenditures and direct expenditures eventually yields to an important difference. For more than two decades, it has been argued that direct expenditures are more transparent: any government intervention by spending requires a specific budget authorization, whereas tax expenditures lower revenue in a nontransparent way. The need for increased transparency is the main reason why many countries belonging to the Organisation for Economic Cooperation and Development (OECD), including Belgium, have developed a practice of reporting tax expenditures.

Tax expenditure reporting focuses on revenue effects, although these effects are only one element of the global evaluation that must be made. It should be kept in mind that the economic consequences of tax expenditures are broader than a revenue loss. By introducing tax expenditures, governments alter the neutrality of the tax system and distort market prices. It should not be forgotten that the main purpose of any tax system is to raise sufficient revenue to finance public outlays in an equitable way, with the lowest administrative and compliance costs.

The first section of this chapter explains the Belgian practice in reporting tax expenditures. The second section highlights how tax expenditures were and are still used in the Belgian approach to tax policy and the main changes that have occurred. The discussion focuses on personal income tax, corporate income tax, and value added tax (VAT). The main trends in the use of tax expenditures in corporate income taxation during the past

The views expressed in this chapter are those of the author and do not necessarily reflect the views of the Ministry of Finance, Belgium, or the Belgian government.

two decades show a change in the tax policy stance, from a greater use of tax expenditures to a more neutral tax system. These trends clearly illustrate that tax expenditures need to be carefully evaluated. The third section turns to an economic evaluation of tax expenditures. It reviews the main tax expenditure provisions and summarizes their economic consequences. It makes the case that the final incidence of tax expenditures can be quite different from the intended tax policy goal.

Tax Expenditure Reporting in Belgium

Origin of Tax Expenditure Reporting

The debate on tax expenditures was initiated in the 1970s. At the early stages of the debate, academics were leading the discussion, advocating increased tax policy transparency. The position that tax expenditure reporting should provide the same level of transparency as public outlays was quickly taken up. In the early 1980s, the High Council for Finance (*Conseil Supérieur des Finances*—a high-level advisory body of tax experts) produced a report suggesting a definition of tax expenditures and initiating an annual report (High Council for Finance 1984). Since 1984, an annual list of tax provisions, exemptions, and credits that lower tax revenue has been assembled by the Ministry of Finance and appears as an annex in the ways and means budget of the Belgian parliament. The list includes, when possible, an estimation of the revenue cost of such provisions and an indication of whether they are considered tax expenditures or a provision of the benchmark tax system. Thus, the coverage is broader than the concept of tax expenditure: any tax relief or tax credit is listed, and the list indicates whether that provision is considered a tax expenditure. The list covers the main categories of taxes: personal income tax, corporate income tax, nonresident taxation, VAT, excise duties, inheritance duties, real estate taxation, registration duties, and vehicle taxes.

There was initially no obligation to establish such a list. The list was an initiative of the Ministry of Finance. However, in 1989, the law on Government Budgeting and Accounting included a provision that makes the production of the annual list of tax deductions, provisions, and tax credits compulsory. More transparency was required, which resulted in a classification of tax expenditures according to the main government spending programs.

Belgian Definition of a Tax Expenditure

According to the influential work of the High Council for Finance (1984), a *tax expenditure* is defined as a provision that

- Lowers tax revenue
- Results in a deviation from the benchmark tax system
- Aims to encourage a specific behavior, favoring economic, social, or cultural activities
- Could be replaced by a direct spending program.

The first element of this definition maintains that tax expenditures lower tax revenue and therefore hamper the revenue-raising function of the tax system. The consequence of introducing tax expenditures is that higher tax rates will have to be imposed on income, consumption, and any other tax base to finance a given level of public outlays.

The benchmark tax system is defined as the base for drawing a line between deductions, exemptions, and credits that are part of the tax system—aiming, for example, to fix the "ability to pay"—and provisions that deviate from this benchmark and have to be considered instead as tax expenditures. Despite the importance of this concept, in the Belgian practice there is no explicit definition of the benchmark tax system in the annual list provided to parliament. One has to work backward, starting from the listing of tax provisions and their classification as tax expenditures or normal tax relief, to find the benchmark tax system.

The third element of the basic definition clearly states that tax expenditures are incentives. They aim to change the behavior of economic agents (namely, consumers, workers, and enterprises hiring a work force); the level or composition of household savings; the pattern of household consumption; the cost of capital for the financing of investments; and so forth.

The fourth element of the basic definition illustrates the similarity between tax expenditures and direct spending. The same policy could be achieved by using another instrument. Assume, for example, that the government wants to promote housing by encouraging taxpayers to build new houses. One option consists of introducing a specific VAT rate for houses—for example, 12 percent instead of 21 percent; however, a spending program with a grant expressed as a percentage of the building price of the house has the same effect.

The Benchmark Tax System

Personal Income Tax

Basic Principles

The three main components of a benchmark tax system are the tax unit, the tax base, and the tax schedule.

The *tax unit* can be the person or a household. The economic criteria should be the unit within which persons living together pool income. In many cases, the choice of the tax unit is a policy choice based on the representation that government perceives in the society. In a society with a high level of solidarity or consolidation within the family, the tax unit would be the household; the person would be the tax unit in a society in which individualism is the reference.

When the tax unit is the household, an additional question must be addressed: Do we have to adjust the ability to pay to take into account how many persons are living together? Assume, for example, two tax units: A is single without children; B consists of a married couple with two children. A earns €25,000 a year, while in B the husband earns €15,000 and the wife €10,000. Do both tax units have the same ability to pay, and, if not, how do they differ in their respective ability to pay? There is no obvious answer to this question. On the one hand, it might be considered that having children is a deliberate choice that the tax system should not affect. The consequence is that any tax credit for children would be considered a tax expenditure. On the other hand, tax unit B, consisting of four persons, has a lower ability to pay than tax unit A, as A is single with the same level of income. In such a situation, the tax system would include a provision to reduce the tax liability of tax unit B, which would not be considered a tax expenditure. The definition of the tax unit is clearly a component of the benchmark tax system.

The *tax base* for personal income taxation should fit with the "ability-to-pay" concept. The economic literature provides two definitions for the tax base: comprehensive income taxation and expenditure taxation.

According to *comprehensive income taxation*, ability to pay—and consequently the tax base—can be defined as the sum of any income and the net accumulation of wealth. This definition fits in with the amount a household could have spent without reducing the value of its assets. Implementing this definition is straightforward for income from work: ability to pay equals income, net of the expenses incurred to obtain that income. It is also very easy to implement this concept for social security benefits and any other transfer received from a government, from enterprises, or from households: such income received by a person should reflect what could be spent without reducing the value of the person's assets. Implementing this definition is not straightforward in the case of income from capital: only the real rate of return can be considered as "ability to pay." The rate of return includes current income and capital gains, minus losses. According to a strict interpretation of this definition, any type of return should be included: dividends, interest, and capital gains, even if not realized (and commensurately, capital losses should be deducted even if not actually incurred).

According to *expenditure taxation*, ability to pay is defined as the amount that a household effectively devotes to spending. Starting from income, ability to pay is defined by deducting gross savings and adding withdrawals from savings to consumption.

The main difference between comprehensive income taxation and expenditure taxation is the treatment of savings. In comprehensive income taxation, any amount devoted to savings is subject to tax, as is the real rate of return of assets, while in expenditure taxation, the net accumulation of assets (savings, minus withdrawals from savings) is subtracted from taxation.

The *tax schedule* is the third main component of any personal income tax system. A tax system can be linear or progressive. Progressivity is a necessary condition for redistribution: an income tax system that has a single tax rate of 10 percent and no zero-rate band or basic exemption does not redistribute income. Most tax systems in OECD countries are progressive: their tax schedule consists of a number of brackets in which the marginal tax rate increases with income. Redistribution does not, however, require an increase in marginal tax rates: progressivity and redistribution can also be achieved by a combination of a zero-rate band and a single positive tax rate for any income above the ceiling of the zero-rate band.

An increasing number of OECD countries, including Belgium, have departed from progressive taxation on global income to a dual income tax system or similar arrangements. In a dual income tax system, taxable income is divided into two categories, earned income (from work and social security benefits) and income from capital. Although the former is still subject to global and progressive taxation, a flat rate, usually lower than the top marginal tax rate, is imposed on income from capital. Such systems have been implemented in the countries of northern Europe: Denmark, Finland, Norway, and Sweden (see Muten and others 1996). Similar arrangements, based on final withholding taxes on financial income, are in force in Austria, Belgium, France, Portugal, and other European countries.

There are two basic reasons for the departure from comprehensive and progressive income taxation:

- The growing mobility of the tax base resulting from the liberalization of capital movements around the world has resulted in increasing tax evasion in many OECD countries. Governments have responded by lowering the tax rate on income from capital to prevent the flight of savings abroad. They are also trying to act collectively to promote the exchange of information on financial income.
- A reduced tax rate on nominal income from capital is a convenient way of dealing with the issue of inflation. It can approximate the marginal tax rate on real income.

The selection of the tax schedule, including the choice of global or dual taxation, is clearly a component of the benchmark tax system.

Benchmark Tax System in Practice

As noted above, the choice of the tax unit is a policy option and a component of the benchmark tax system. This choice is usually driven by historical and cultural factors; however, there has been a certain shift from family taxation to individual taxation.

The choice made in Belgium is a mix of family taxation and individual taxation. The tax unit is defined as an adult, single or married, including dependent children and any other dependent person. Thus, adults living together without being married are considered separate tax units. This choice, which may appear inconsistent using economic criteria (that is, pooling of resources by persons living together), is justified on the basis of the right to privacy—checking whether people live together is not the job of the tax administration, which thus relies only on civil arrangements to identify families. Taxable income of the various persons composing the tax unit is not pooled: according to the tax code, earned income of each spouse is taxed separately, and beginning in 2004, this rule will also apply to any type of income.

In Belgium, as in many OECD countries, the reference for the tax base is clearly comprehensive income taxation. The main provisions resulting in exemptions of various types of income (for example, student grants and capital gains) are considered tax expenditures.

The benchmark tax system allows some deductions on gross income: the deduction of social security contributions, professional expenses, losses on earned income, and interest from mortgage debt[1] are considered part of the benchmark tax system. Other deductions on gross income, such as deductible gifts or deductible payments for domestic servants, are considered tax expenditures. This is also the case for pension savings, life insurance, and mortgage capital repayments, which entitle a person to tax credits.

The rationale for the dividing line between provisions included in the benchmark tax system and tax expenditures can be explained as follows: any deduction that consists of a reduction of the ability to pay is considered part of the benchmark tax system; any deduction that reflects a deliberate use of the ability to pay is considered a tax expenditure. Assume, for example, that a person pays €100 each month for commuting expenses. This cost reduces the person's ability to pay taxes. On the other hand, assume that the person gives a gift of €50 to a nongovernmental organization acting in developing countries or saves €200 for retirement. These are both deliberate uses of the person's ability to pay taxes, and consequently, the deduction of such expenses is considered a tax expenditure.

The remaining characteristics of the benchmark tax system are as follows:

- Progressivity is part of the benchmark tax system.
- The zero-rate band is not considered a tax expenditure and, thus, is considered part of the benchmark.
- The main provisions of family taxation—that is, the splitting system and child tax credits—are considered part of the benchmark.
- The final withholding tax on dividends and interest is considered part of the benchmark.

In summary, the definition of the benchmark tax system encompasses the following: taxable income is considered as comprehensive income, net of any expense incurred with a view to acquiring or preserving taxable income. Taxable income is subject to progressive taxation, except for financial income, and the amount of the tax due is adjusted to take into account the composition of the family.

Corporate Income Tax

Basic Principles

Incorporated enterprises differ from households in a key way: they are not "final economic agents" but act only as an intermediary. Any income earned by a corporation is ultimately attributed to workers, executives, lenders, or shareholders. This fundamental characteristic of a corporation has important implications for the definition of the benchmark for corporate income tax.

Income distributed by corporations consists mainly of wages, interest, and dividends. Profit also can be retained in the corporation and not distributed. It should be noted that if the personal income tax system had a tax base corresponding perfectly to comprehensive income, no corporate income tax would be needed. Under such a system, wages, interest, and dividends would be included in personal income, as would retained profits, because retained profits would result in unrealized capital gain for the shareholder.

This observation highlights the two main reasons for a separate corporate income tax base and sets the guidelines for the benchmark tax base:

- Any income earned by corporations that is not included in the personal income tax base must be included in the corporate income tax base. Typically, therefore, retained earnings are included in the corporate income tax base, as no OECD country includes unrealized capital gains in the personal income tax base.

- Corporate income tax also has a withholding function, which justifies the inclusion of dividends in the tax base. It is easier to subject dividends to tax where they are attributed than where they are received, as there are more shareholders than corporations. The withholding function of corporate income tax has an important consequence: any subsequent taxation could result in double taxation. That is why provisions to prevent double taxation are needed and are included in the tax systems of OECD countries (see box 4.1).

According to these principles, the benchmark tax system for corporate income tax should be the sum of retained and distributed profits. In this sense, the withholding argument would justify a tax base before deduction of interest. A tax base of this kind indeed has been suggested in academic circles and by government-mandated expert commissions, but it has never been implemented.

Source taxation is another reason for a separate corporate income tax. It ensures that any income earned in a given jurisdiction is subject to tax, and it is up to the resident country to decide whether double taxation should be alleviated.

Box 4.1. Methods to Prevent Double Taxation of Distributed Profits

Assume a corporation makes a profit of 100. The corporate income tax rate is 30 percent, and the top marginal tax rate for personal income tax is 40 percent. Also assume that shareholders have a high earned income, so that dividends should be taxed at the top marginal tax rate.

- In an *imputation system*, dividends are subject to corporate income tax; however, corporate income tax is credited against personal income tax. The final tax liability is 30 + (40 – 30) = 40, so that there is no double taxation.
- In an *exemption system*, dividends are subject to corporate income tax but exempt from personal income tax, so that the final tax liability is 30. No double taxation occurs.
- In a *classical system*, dividends are subject to corporate income tax and to personal income tax as well. The final tax liability is 30 + 0.40 × (100 – 30) = 58. Hence, there is double taxation.
- A *dual income tax system* works like a classical system, except that personal income tax is raised at a lower rate. Assume, for example, that under dual income tax, the linear tax rate for income from capital is 15 percent. The final tax liability is 30 + 0.15 × (100 – 30) = 40.5. The final tax liability thus approximates the imputation system.

Depreciation of assets is part of the benchmark tax system if the depreciation rate fits with economic depreciation on a replacement basis; under such a system, taxable profit fits with economic profit. However, any accelerated depreciation resulting in a depreciation rate higher than economic depreciation on a replacement basis must be considered a tax expenditure. Any extra cost deduction also has to be considered as a tax expenditure; the same is true for any exemption on retained or distributed profits. This tax base should be subject to a single tax rate. Income redistribution and progressivity are to take place between households, not between corporations. Any tax rate reduction depending on the size of the company or the type of activity has to be considered a tax expenditure.

Benchmark Tax System in Practice

In the Belgian tax system, the definition of taxable profit of incorporated enterprises relies on accounting standards. The usual definition of profits in accounting can be understood as the benchmark definition of the tax base. Thus, straight-line and declining-balance depreciation are considered part of the benchmark tax system.

Any provision eliminating double taxation is also considered part of the benchmark tax system. For example, Belgium applies the exemption method, according to which profits are exempted by the parent company if they were subject to tax by the subsidiary. The deduction of dividends and capital gains exempted from taxation in the hands of the parent company is considered part of the benchmark. The same logic prevails for foreign tax credits on interest from abroad; therefore, allowing withholding taxes levied at source to be credited against corporate income tax in the residence country is not considered a tax expenditure.

The deduction of losses carried forward is considered part of the benchmark tax system. There is no carryback provision in the Belgian tax legislation.

The corporate income tax system departs substantially from the benchmark tax system. There are two main reasons for this: the use of tax expenditures and a list of disallowed expenses (expenses that are deductible for accounting but not for tax purposes). Preferential tax regimes (mainly for coordination centers) form the largest part of tax expenditures. Disallowed expenses, which are a kind of tax penalty, are not considered negative tax expenditures.

Value Added Tax

Basic Principles

In principle, VAT is a comprehensive tax on final consumption of households and on intermediate consumption of economic agents (such as the

government) that are not subject to VAT and, consequently, are not allowed to credit VAT paid on inputs against VAT due on outputs. The base of VAT is territorial: according to the basic principles of VAT, imports are subject to VAT, whereas exported goods are zero-rated. Thus, any exemption from VAT or any reduced rate introduced as an incentive has to be considered a tax expenditure.

A special case is the reduced rate for basic goods (mainly food). In a large number of OECD countries, VAT is built as a two-rate system, with a normal rate and a reduced rate for such basic goods. For example, the European Union (EU) basic rule for VAT (the 6th EU Directive) allows EU countries to have a two-rate system, with a common agreement on the list of products that may benefit from the reduced rate. The main reason for this provision is redistribution: with a reduced rate for food, for example, the poor will pay proportionally less VAT than the rich, because the poor devote a larger part of their income to food than the rich. Such reduced rates could be considered part of the benchmark: they operate similarly (though imperfectly) to progressive income taxation.

Benchmark Tax System in Practice

The annual list of tax expenditures does not generally consider reduced rates to be tax expenditures. Any exemption is listed as a tax expenditure, however, as are reduced rates that are not justified by redistribution but by support for some type of economic activity.

Revenue Cost Estimation Method

A large number of OECD countries, including Belgium, use the revenue forgone method when estimating the cost of tax expenditures, even though the outlay equivalent method would ensure more transparency by allowing a direct comparison of the costs of incentives by tax expenditures and by outlays. The main justification for the choice of the revenue forgone method is its easy implementation and the fact that the calculated costs are not sensitive to questionable assumptions about the taxpayer's behavior.

Revenue Cost from Tax Expenditures

Table 4.1 provides a first insight into the revenue cost of tax expenditures. This table is based on the most recent list of tax expenditures and indicates, for the main categories of taxes, the revenue forgone because of the use of tax expenditures, the net revenue from the corresponding taxes, and the ratio of revenue forgone to net revenue.

Table 4.1. Tax Expenditures, 2000

	Net revenue (€ millions)	*Revenue forgone (€ millions)*	*Revenue forgone as percent of net revenue*
Personal income tax	23,288.7	3,684.8	15.8
Corporate income tax	6,684.1	2,261.0	33.8
Withholding tax on financial income	2,769.4	308.7	11.1
Vehicle taxes	859.2	13.8	1.6
Excise duties	5,309.1	208.0	3.9
Registration duties	1,873.7	287.1	15.3
Inheritance duties	833.6	31.9	3.8
VAT	16,808.4	1,094.1	6.5
Miscellaneous	451.5	0.0	0.0
Total	58,877.7	7,889.3	13.4

Source: Ministry of Finance, Belgium.

Tax expenditures on personal income tax, corporate income tax, and VAT make up the bulk of the revenue forgone (see figure 4.1). Among these three categories, corporate income tax is the one with the highest ratio of revenue forgone from tax expenditures to net revenue assessed. In this discussion, the focus is on these three taxes and the corresponding tax expenditures.

Personal Income Taxation

The revenue forgone from tax expenditures amounts to €3.68 billion, which represents 16 percent of the net revenue assessed. Because the annual list of provisions, exemptions, and credits lowering tax revenue also includes the revenue cost of provisions that are considered part of the benchmark tax system, their cost can easily be compared with the cost of tax expenditures.

Figure 4.2 illustrates the relative importance of tax expenditures compared with the provisions that are part of the benchmark tax system. Benchmark provisions account for the largest part of revenue forgone (€14.6 billion), as shown in table 4.2.

Looking more closely at tax expenditures (see figure 4.3), we can see that the three main categories are tax credit on social security benefits (€1.8 billion), tax expenditures for long-term savings and housing (€1.4 billion), and the exempt savings accounts (€370 million).

Figure 4.1. Tax Expenditures and Tax Revenue

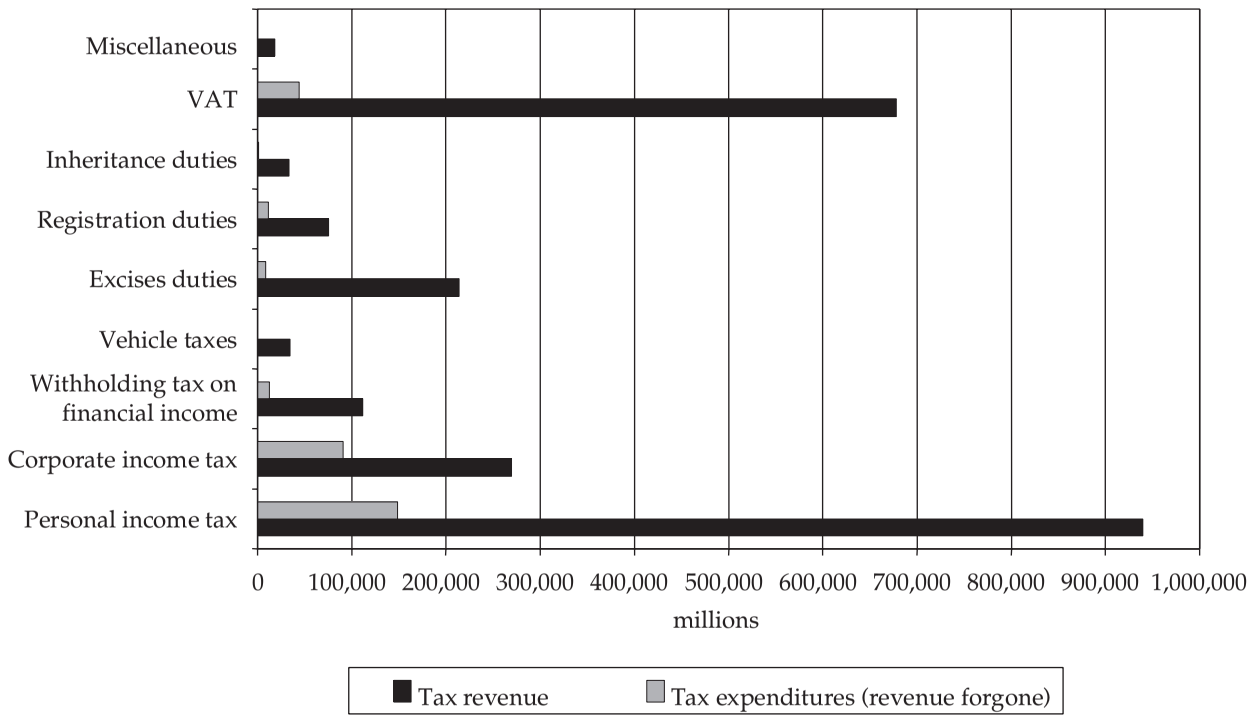


Figure 4.2. Personal Income Tax: Revenue Cost of Tax Expenditures and of Provisions Considered Part of the Benchmark Tax System

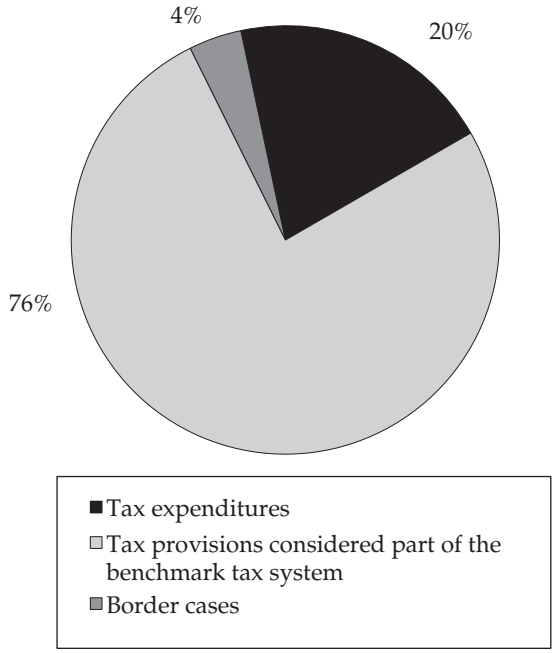
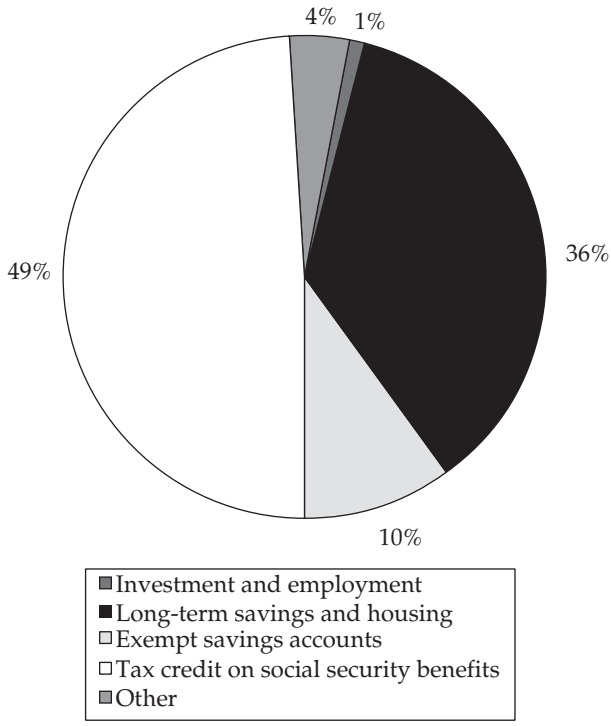


Table 4.2. Revenue Cost of Personal Income Tax Provisions Considered Part of the Benchmark Tax System (*revenue cost, in millions—2000 list*)

Provision	*Revenue forgone*
Exempted income (child benefits, special benefits for people injured at work)	1,989.1
Interest deduction (housing only)	671.7
Professional expenses	2,336.8
Zero-rate band	8,342.7
Exemption for foreign-source income	348.0
Separate taxation	748.4
Other	183.5
Total	14,620.2

Source: Ministry of Finance, Belgium.

Figure 4.3. Personal Income Tax: Revenue Forgone from Tax Expenditures



The tax credit on social security benefits has a long history.[2] At the early stage of the social security system, just after World War II, it was decided that pensions, unemployment insurance, disability payments, and other social security benefits should be tax exempt. Their very low level was the main reason: they were considered basic income, which ought not to be subject to tax. As the replacement ratio rose over time, the initial tax regime was reconsidered on several occasions. In the 1960s, the system moved from a total to a limited exemption, and in the early 1980s, it changed from a tax allowance to a tax credit, adding a phase-out range for tax credits in the mid-1980s. Despite these changes, social security benefits are not yet fully taxable.

Tax expenditures for long-term savings and housing constitute the second important part of tax expenditures for personal income taxation. Tax expenditures for housing consist of a tax credit for repayments of

mortgage loans and a special deduction for interest.[3] The tax regime of private pensions (second and third pillar arrangements) is an EET regime,[4] and the tax credit related to premiums is considered a tax expenditure.

The final tax expenditure category consists of the tax treatment of savings accounts. Interest on these accounts is tax free up to limit of €1,500 per year.

Discussed below is the effect of these tax expenditures, as they provide good illustrations of the difference between a revenue cost and an economic cost.

Corporate Income Taxation: Tax Expenditures and Effective Taxation

In the early 1990s, when a new tax policy was being formulated, tax expenditures were a key element in the debate (Valenduc 1999c and 2000). As table 4.1 indicates, corporate income tax is the category in which tax expenditures are largest compared with tax revenue (33.8 percent).

The effect of tax expenditures is to lower the effective tax rate below what it would be in a benchmark system. If there were no tax expenditures, corporate income tax revenue would be equal to the product of the nominal tax rate multiplied by the benchmark tax base. Any tax expenditure pushes the effective tax rate below the nominal tax rate, so that the gap between the nominal and the effective rate shows the magnitude of tax expenditures.

An indicator has been developed to illustrate this gap. The implicit tax rate (ITR) is calculated using the following principle: the amount of tax effectively payable by companies is divided by a concept of profit that disregards the effect of deductions that are considered tax expenditures. The aim is thus to relate the effective tax liability to a concept of profits that is as close as possible to a benchmark tax system without any tax expenditures (see box 4.2).

In the early 1990s, the main tax expenditures consisted of preferential tax regimes resulting in exempt dividends or exempt profits, a large investment allowance (13 percent of the amount of qualifying investments), an extra cost deduction for additional staff hired by small and medium-size enterprises (SMEs), reduced rates for SMEs, notional withholding taxes, and the foreign tax credit. Most of these tax expenditures were repealed or put on hold in the early 1990s. The main exception is the preferential regime for the coordination centers, which is still in force.

In the early stages of the reform, the main concerns were the small amount of revenue from corporate income tax, the high level of revenue forgone from tax expenditures, and the resulting gap between the

Box 4.2. Computation of the Implicit Tax Rate: Methodology

The *numerator* can be determined straightforwardly: it is the tax actually due—that is, the total tax less notional withholding taxes. It takes into account the effect of reduced rates for small and medium-size enterprises. All else being equal, the higher the tax base at these reduced rates, the lower the effective tax rate will be.

Determining the *denominator* is not so straightforward. It is necessary to work backward from the net tax base to what should be the tax base in a benchmark system with no tax expenditures. Deductions that are tax expenditures must be added to the net tax base. They include the investment allowance; exempt gifts; tax relief for additional staff; profits exempted under special regimes (such as the regimes applying to coordination centers, distribution centers, and service centers); and exempt dividends.

In contrast, any benchmark system should eliminate double taxation and should allow the deduction of losses carried forward. These two categories of deductions, therefore, should not be added to the net tax base to compute the implicit tax rate.

The second adjustment concerns disallowed expenses. These are charges that should be deductible in a benchmark system but that have not been deducted in calculating the tax base and are, thus, included in the net tax base. They must, therefore, be subtracted to give an approximation of the benchmark system.

nominal corporate income tax rate and the effective one. The reform that was implemented step by step in the early 1990s consisted of broadening the base and lowering the tax rate from 43 percent to 39 percent.

Figures 4.4 to 4.6 illustrate the effect of the corporate income tax reform. It is clear from figure 4.4 that the magnitude of tax expenditures consisting of allowances or exemptions decreased during the 1990s, with the exception of the exempt profits of coordination centers. The same is true for the second category of tax expenditures, notional withholding taxes, and tax credits: they now account for 1 percent of taxable profits, whereas in the early 1990s they represented 6 percent. Reduced rates for SMEs were not repealed but were more strictly targeted.

Figure 4.6 illustrates the effect of these tax expenditures on effective taxation. It compares them with trends in the ITR (computed from tax statistics) and nominal rates for companies over the past 20 years. Before 1990, the gap between nominal tax rates and effective tax rates widened because of an increased use of tax expenditures. This trend was reversed at the start of the 1990s. The incremental tax reforms brought the implicit tax rate much closer to the nominal one. Moreover, at the end of the period, the tax rate less notional withholding tax was practically the same as

Figure 4.4. Corporate Income Tax Expenditures: Deductions from the Tax Base

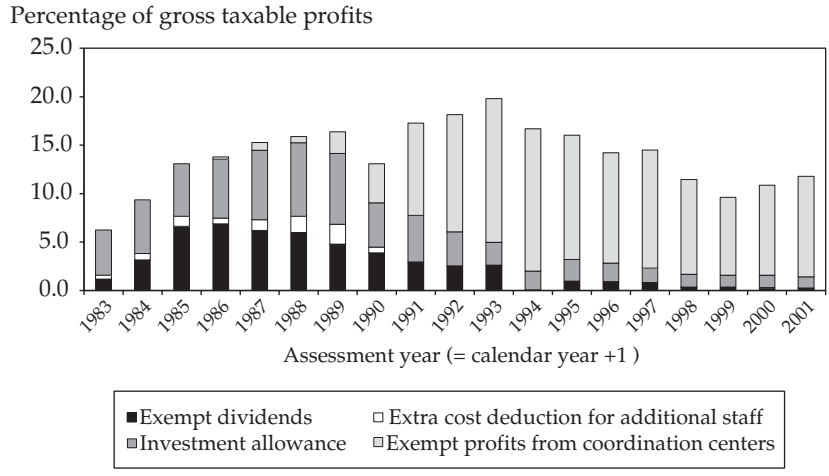


Figure 4.5. Corporate Income Tax Expenditures: Notional Withholding Taxes and Tax Credits

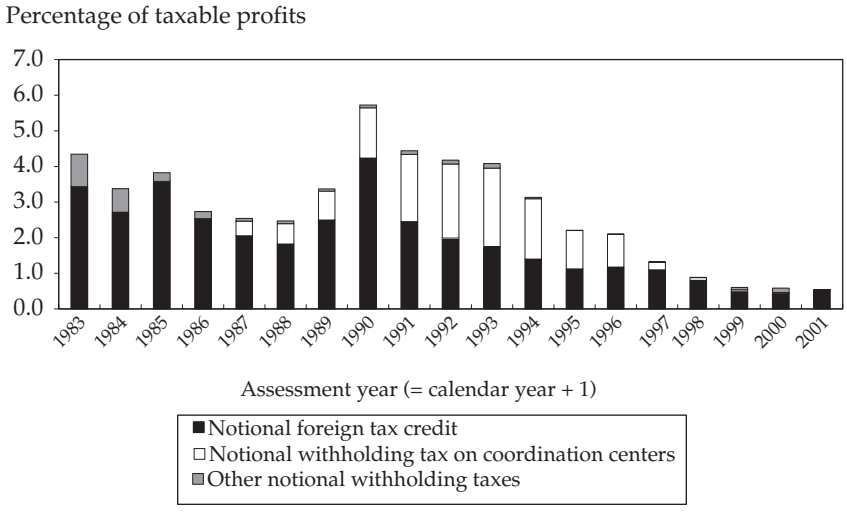
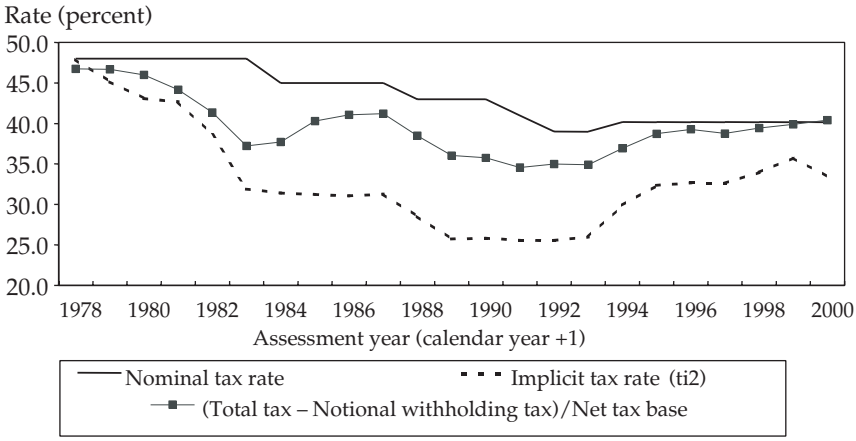


Figure 4.6. Corporate Income Tax from Nominal to Implicit Tax Rates



the nominal rate. Thus, the remaining gap between the ITR and the nominal tax rate can be attributed chiefly to tax expenditures, which effectively reduce the tax base. A large part of these tax expenditures can be attributed to the coordination center and other preferential tax regimes (for example, the distribution center and services center regimes).

VAT

The largest part of the tax expenditures in VAT consists of sectoral reduced rates. Newspapers and certain weekly periodicals are zero-rated (revenue forgone: €60 million) and in conformity to EU agreements, some labor-intensive activities enjoy a reduced rate (6 percent against 21 percent for the normal rate; revenue cost: €670 million).

From the Revenue Cost to the Economic Cost of Tax Expenditures

The revenue cost that a tax expenditure report can highlight is only one element in the evaluation of tax expenditures. Proceeding from reflections on the economic consequences of the main tax expenditures listed earlier, a more general discussion ensues below about the tax policy choice between neutrality and incentives.

Economic Consequences of Tax Expenditures: Some Examples

Tax Credits on Social Security Benefits

The actual tax credits originate in a policy decision in the early 1960s to exempt social security benefits because they were considered basic income support. The Belgian social security system is Bismarckian in nature, in that it is based on the concept of social insurance. The welfare state has been growing for five decades, and replacement ratios of the main social security benefits are now far above the level reached in the 1960s. They may be in some respects equivalent to, or even higher than, low wages that are subject to tax, whereas social security benefits continue to enjoy tax credits. This problem is a typical example of the political difficulties of repealing tax expenditures. Ideally, exemption of basic income should be ensured by a zero-rate band and not relate to type of income.

Belgium now faces a situation in which net replacement ratios of people out of work are substantially above gross replacement rates. Such a situation can lead to perverse incentives. Unemployed people face a so-called unemployment trap: in some cases, it is not in their interest to find or take a job because the net wage is close to or even lower than the net unemployment benefit. This situation will lower the supply of labor and potential economic growth. But keeping people out of work generates growing inequality and undermines social cohesion. Long-term unemployment reduces human capital, as people who are out of work for a long time lose their skills, knowledge, and productivity.

Policymakers have responded by introducing earned-income tax credits targeted to low-wage earners. Such a provision is included in the recent Belgian personal income tax reform. This is a typical case in which a tax expenditure is introduced to counteract the effect of another tax expenditure.

Tax credits on pensions can also lead to perverse incentives. They raise the replacement ratio for pensioners and, combined with other features of the pension system, may result in an incentive for early retirement. This situation could lower the employment rate and make the cost of aging (the "grandpappy boom") higher.

Moreover, tax credits for pensions, unemployment, or illness benefits violate horizontal equity: the tax system does not treat equals equally any more.

Tax Expenditures for Long-Term Savings and Housing

The tax expenditures for long-term savings and housing result in a departure from a uniform taxation of household savings and investments: the tax system is not neutral anymore and the effective tax rate of savings

depends on the assets in which savings have been invested. In the Belgian system, the effective taxation of various assets can be summarized as follows: equity faces the highest effective tax rate, followed by interest-bearing assets (High Council for Finance 2002, pp. 28–35). These two types of investment face effective tax rates lower than the marginal tax rate because of the 15 percent final withholding tax on dividends and interest. The effective tax rate on pension savings is negative for the third-pillar arrangements and close to zero for the second pillar. Effective taxation of owner-occupied housing is close to zero if local real estate tax is not taken into account[5] (registration duties on VAT paid on acquisition compensate for the mortgage interest and repayments tax credits), but it is positive and higher than the one for interest-bearing assets when local taxes are included.

The key question is whether incentives for some forms of savings raise the level of household savings or result only in a change in the mix of assets. In the first case, potential economic growth could benefit from additional savings, which would increase the capital stock of the economy. If incentives affect only the composition of household savings, economic consequences are far from favorable: overall savings will be reduced because of the revenue forgone from tax expenditures that lower government savings, while private savings will remain unchanged.

Empirical economic evidence suggests that tax incentives rarely result in additional savings (see, for example, OECD 1994). They merely change the composition of the household savings. Although the global amount of households savings is inelastic (that is, it does not react to changes in the net real rate of return), the decision of households to select assets for investment is highly dependent on their respective real net rates of return, which are affected by tax expenditures.

Tax Exemption for Savings Accounts

The tax exemption for savings accounts is a good example of a situation in which the incidence of the tax expenditure is oriented away from the original motivation. Income redistribution is the main reason for the exemption of savings accounts. Such a provision exempts an asset that is widely held and well known as "the savings of the poor." However, because of the combined effects of regulation and tax expenditures, the final incidence of the withholding tax exemption raises the profitability of the banking sector or reduces capital for investment. This effect is quite different from protecting the savings of the poor.

The final withholding tax exemption has been designed so that it is granted only if the interest rate does not exceed a prescribed limit, which is fixed by royal decree. Such a regulation restricts competition and lowers the rate of return of savings accounts.

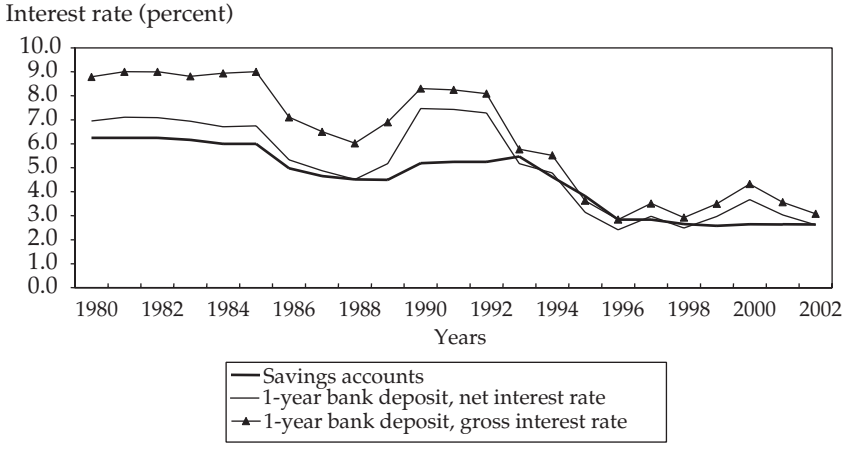
Figure 4.7 compares the regulated and tax-exempt rate of return of savings accounts with the gross and net interest rate for a 1-year bank deposit, which is subject to tax. If the regulation aims to protect the savings of the poor, the regulated rate of return of savings accounts should equal the gross 1-year interest rate of bank deposits. In that case, withholding exemption would benefit the saver. If the regulated rate of return of savings accounts were to equal the net 1-year interest rate of bank deposits, the withholding tax exemption would not benefit the saver but the banking sector, as it lowers the cost of resources.

Figure 4.7 clearly shows that the regulated rate of return of savings accounts is closer to the 1-year interest rate than to the corresponding gross rate. Hence, the final effect of the withholding tax exemption is to reduce the cost of resources for the banking sector. Depending on competition on the demand side of the capital market, the ultimate effect will be higher profits for the banking sector (imperfect competition) or a lower cost of capital. Whatever the case, it is clear that, because of the combined effect of regulation and preferential tax treatment, the tax expenditure has deviated from its initial goal of redistribution.

Economic Consequences of Preferential Tax Regimes

The corporate income tax reform conducted in the early 1990s resulted in the repeal of tax expenditures, with a major exception: the preferential tax

Figure 4.7. Tax Expenditures and Regulation: The Case of Savings Accounts



Source: Ministry of Finance, Belgium.

regime of the Belgian coordination centers, which is still in force, accounts for a large part of the remaining gap between the implicit and nominal tax rates.

This situation raises an interesting question: Are preferential tax regimes—which implement tax expenditures policy—an important option, taking into account not only their revenue effect stemming from extensive tax expenditure reporting but also their economic consequences? This question matters not only for OECD countries, which have decided to repeal their harmful preferential tax regimes (OECD 1998), but also for non-OECD economies where tax holidays or similar arrangements are widely used.

The main reason for a preferential tax regime is to attract foreign direct investment and, more generally, economic activity from abroad (Valenduc 2000). In a global economy, nations have to compete to attract economic activity. If capital moves freely around the world, investors will look for the best location for their investment, and savers will look for the highest return. Enterprises will look for the lowest wage costs. Nations compete in two ways:

- Offering higher labor productivity and low interest rates, resulting in a low cost of capital for investors or other nontax advantages
- Lowering taxes, mostly on mobile activities (mainly capital), to attract foreign investors: all things being equal, the lower the effective tax rate, the higher the net effect on economic activity

Governments can lower the corporate income tax rate or arrange a favorable treatment of depreciation allowances, provisions, or losses. They can also offer tax incentives or preferential tax regimes for highly mobile services, holding companies, headquarters services, banking, insurance and reinsurance activities, and shipping, among others. They can also offer tax holidays. There is growing empirical evidence that capital flows respond to the spread of preferential tax regimes (Valenduc 2002 and Weichenrieder 1996).

In this environment, there is clearly a risk of tax competition. Even if governments are reluctant to enter such a process, they will face pressure from the business community to compete by offering tax incentives. If they respond positively, they will look at their neighbors and try to be more attractive. Such competition generally has several negative consequences.

Tax competition will considerably reduce the advantages of globalization. Borders have been removed to ensure a better allocation of resources; however, preferential tax rates create distortions. Resources may be allocated on the basis of lower effective tax rates and not on the

intrinsic merits of alternative locations, thus creating a misallocation of resources and rent-seeking behavior: tax advantages can be locked in by a higher pretax price.

The next step in the process of tax competition will be a downward pressure on the taxation of mobile activities (mainly capital) in the host country. A lower tax pressure will result in a loss of revenue. For transition economies, the domestic sector will have to finance public outlays needed to conduct the transition. This situation will result in higher tax rates, which could hamper the growth of the domestic sector of the economy.

Tanzi and Zee (2000) summarize the economic consequences of tax incentives for transition economies. They conclude:

> The cost effectiveness of providing tax incentives for investment promotion is generally questionable. The first best strategy for sustained investment promotion consists invariably of providing stable and transparent legal and regulatory frameworks as well as adequate supporting institutions and facilities, and of putting in place a tax system that is in line with international norms. Some objectives, such as those associated with regional development needs of a country, are more justifiable than others as a basis for granting tax incentives. Not all incentives are however, equally effective. Accelerated depreciation has the most comparative merits, followed by investment allowances or tax credits; tax holidays and investment subsidies are among the least meritorious.

Tax holidays indeed have numerous shortcomings. Exemption of profits tends to benefit investors who expect high profits and who would have made the investment even if there were no tax incentive. Tax holidays also provide strong incentives for tax evasion through transfer pricing. Being limited in time, they tend to favor short-term investment, whereas the country is interested in attracting mainly long-term investment. Moreover, granting tax holidays for foreign direct investment means that public spending will need to be financed by the domestic sector of the economy, which will face a higher tax burden that could dampen growth prospects.

Neutrality or Incentives?

An analysis of the economic cost of tax expenditures reveals that introducing tax expenditure reporting is a first and important step in addressing the debate on the usefulness of tax incentives.

Introducing tax expenditures is a deliberate policy choice. The decision to introduce them ideally should be based on an assessment of the costs

and benefits of such a decision and on the merits of tax expenditures versus direct spending. Two questions need to be answered: Should we intervene? And if so, should we use tax expenditures or direct spending?

Should We Intervene: The Choice between Neutrality and Incentives

This fundamental tax policy question is a choice between neutrality and incentives. Choosing neutrality as the primary goal of the tax system will result in a tax system with a broad base, no tax expenditures, and uniform taxation. The tax system should be neutral, for example, in the choice between the use of labor and the use of capital as production factors, in the choice between equity and debt for financing investment, in the location decisions of firms, in the allocation of household savings between assets, and so forth. If the tax system is neutral, resources are allocated according to relative prices; under perfect competition, such an allocation of resources is optimal.

From this perspective, the single reason for tax expenditures should be the case of externalities: when market prices do not fully valuate the benefits and the drawbacks of economic activities. For example:

- Pollution generates negative externalities when the cost of polluting is not included in market prices. Such a situation is a case for imposing taxes to introduce the cost of pollution into market prices.
- The social return of investment in research and development (R&D) is far above the private return. Therefore, without any government intervention, firms would underinvest in R&D, as they would only select projects with a sufficient private rate of return, neglecting those with a high social rate of return. Such a situation is a case for government support of R&D.

Tax expenditures also could be justified in the case of market imperfection. Market imperfection could occur if SMEs have no or restricted access to financial markets, which results in a higher cost of capital for financing their investments. It could also be the case for pension savings if long-term interest rates do not sufficiently valuate long-term investments or if households do not sufficiently perceive the benefits of long-term investment. Using tax expenditures to counteract market imperfections, however, is a second-best policy. The best policy should be to tackle the market imperfection.

The choice of neutrality as the primary goal of the tax system leaves little room for tax expenditures.

Opting for incentives is a deliberate policy choice. When governments introduce tax incentives, they take the position that their views must prevail in market prices:

- When governments introduce preferential tax regimes to attract foreign direct investment, they believe that leaving market conditions unchanged would lead to underinvestment in their country.
- When governments introduce tax expenditures to support pension savings, they believe that households do not sufficiently invest in long-term savings because of the "myopia" of the saver or an undervaluation of long-term investment by the capital market.
- When governments introduce tax expenditures to support economic activity in a given sector, they believe that society will gain something from that activity.

A problem exists when private firms lobby governments. For example, multinational firms may make tax incentives a precondition for their investment in a country. Firms of any given sector may advocate for preferential tax treatment, arguing that such incentives will benefit society as a whole. In such situations, it is often difficult for governments to reject enterprise demands, even though the benefit to society is unclear.

From the point of view of a country that is competing for international capital granting a tax holiday should in any case be considered a profitable option. From a global perspective, however, tax holidays do not necessarily generate additional investments, although they affect the location of investment. This situation is typically a zero-sum game for investment, with a revenue cost for the candidate countries. Thus, it will finally result in a negative-sum game. It should be conceded that no country has an interest in rejecting or repealing its tax holidays. Countries are in a "prisoner dilemma," in which no welfare gain is possible without collective action.

Introducing tax expenditures to support activity in a given sector will divert resources and activity from other sectors of the economy. Firms or sector representatives advocate only for their affiliates, so the government must bear in mind that global welfare can suffer from preferential tax treatment of some activities. The main reason is that the introduction of tax expenditures requires an increase in tax rates for the remaining tax base. The problem for many governments is that a targeted advantage is more visible than a widely diffused cost.

Tax Incentives versus Direct Spending

Once the decision to intervene is made, the choice between tax incentives and direct spending remains. The following issues should be considered.

- Direct spending is more transparent. Even when tax expenditures are reported, such reporting in most cases occurs after the fact, whereas budgeting is ex ante. A government that agrees on a tax expenditure

program does not have a clear idea of the cost; however, a government that decides on a spending program has a clear idea of the cost, because the budget will impose a ceiling.

- The main advantage of tax expenditures is that, within the subgroups of tax-supported activities, the allocation of resources will depend on market prices and not on government decisions. Consider, for example, investments in R&D. The job of the government is to ensure that investment in R&D will be sufficient not to choose which project should be selected. A tax credit will raise the return for R&D investment, thereby ensuring more investment, but will not interfere in the choice of projects. Conversely, direct funding, in many cases, will interfere with the choice of projects.
- The administrative and compliance cost of a tax expenditure program in many cases will be lower than the cost of direct spending. Tax expenditure is typically a viable instrument when the target group is large and the grant relatively small. It is not a good option when the target group of taxpayers is very small and when the advantage is conditional on a large number of criteria.

Notes

1. Up to the amount of taxable income from real estate. Deduction of mortgage interest against earned income is considered a tax expenditure.
2. Delcourt (1979) describes the original tax regime and the main changes introduced during the 1960s and the 1970s. More recent changes are described in Valenduc (1999), which also discusses the effect of this tax expenditure.
3. Interest on a mortgage is not considered a tax expenditure when deducted from income from real estate. It is, however, considered a tax expenditure when deducted from earned income.
4. EET refers to a situation in which contributions are tax exempt (E), income accrued in the fund is tax exempt (E), and payments made on retirement are taxable (T).
5. Such a view can be justified if it is understood that local real estate taxes work like a benefit tax (payments for services provided by the municipalities).

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5
Federal Tax Expenditures in Canada

Marc Seguin and Simon Gurr
Department of Finance Canada

Although there is broad agreement internationally on the conceptual definition of tax expenditures, there is no widely accepted operational methodology for estimating them. A range of methodologies exists internationally: some are restrictive; others are very broad. The broadest of the available options is to estimate all tax expenditures as deviations from a benchmark tax system. Typically, these deviations, which are designed to achieve a variety of social and economic objectives, take the form of exemptions, deductions, rate reductions, rebates, credits, deferrals, and carryovers.

As this chapter will demonstrate, the approach used in Canada is to provide as much information as possible by reporting any deviation from a basic benchmark system. This approach allows the reader of the tax expenditure report to decide whether a particular item qualifies as a tax expenditure. The Canadian report also includes measures that would not generally be considered as tax expenditures and that would, therefore, be included in the benchmark tax system. These measures are shown as memorandum items.

Although this approach has the benefit of providing the maximum possible information, it does have a potential downside. Specifically, the user of the tax expenditure report may be tempted to simply consider all reported deviations as tax expenditures without considering what really constitutes a tax expenditure. For example, it can be argued that any fair

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tax system would make some provision for the additional expenses related to disability on the basis that these expenses reduce the taxpayer's ability to pay tax. Thus, for example, a disability tax credit, such as we have in the Canadian tax system, would be part of the benchmark, and, therefore, would not be a tax expenditure. Nevertheless, the approach used in Canada is to report this tax measure as a tax expenditure and to allow the reader to decide whether it should be considered a tax expenditure or simply a part of the benchmark tax system. Moreover, the interaction among various tax expenditures implies that the estimates cannot be aggregated to determine a total cost.

The discussion is presented as follows. First, we discuss tax expenditures and the benchmark tax system. Next we describe the Canadian federal tax expenditures and how they are estimated. We do not examine provincial tax expenditures. We begin with a description of the overall framework as well as the methodology used to define tax expenditures at the federal level. We then present details of the estimation methods and data sources used for tax expenditures associated with the personal and corporate income taxes as well as the goods and services tax (GST) systems. Finally, we offer some concluding remarks.

Defining Tax Expenditures

Framework and Methodology

To identify tax expenditures, one must establish a benchmark tax structure that does not contain any preferential tax provisions. Tax expenditures are then defined as deviations from this benchmark. Reasonable differences of opinion exist about how the define the benchmark tax system and, hence, about what to consider a tax expenditure. For example, some might consider childcare expenses a cost of earning income and, therefore, part of the benchmark tax system; others would consider tax assistance for childcare expenses a tax expenditure.

The Canadian *Tax Expenditures and Evaluations* report (see, for example, Department of Finance 2002) takes a broad approach—only the most fundamental structural elements of each tax system are considered part of the benchmark. By defining the benchmark in this manner, Canada treats many tax provisions as tax expenditures. This approach provides information on a full range of measures and so allows readers who take a different position as to the appropriate benchmark system to construct their own list of tax expenditures.

In keeping with this objective of providing as much information as possible, the *Tax Expenditures and Evaluations* report identifies several tax provisions that are generally not considered to be tax expenditures even

though they reduce the amount of revenue collected. These measures are denoted as memorandum items and are included simply to provide additional information. Three types of memorandum items are included.

- Measures that are considered to be part of the benchmark system. The dividend tax credit, for example, reduces or eliminates the double taxation of income earned by corporations and distributed to individuals through dividends.
- Measures for which there may be some debate about whether they should be considered tax expenditures. The cost of business-related meals and entertainment, for example, may be considered an expense incurred by the taxpayer in order to earn income (and therefore part of the benchmark), or it may be considered a benefit (and therefore a tax expenditure).
- Measures for which the available data do not permit separation of the tax expenditure component from the portion that is essentially part of the benchmark tax system. For example, employees generally cannot deduct work-related expenses. However, specific employment expenses (such as automobile expenses, cost of meals and lodging for certain transportation employees, and legal expenses paid to collect salary) are deductible in certain circumstances in the computation of income. This provision is a memorandum item because it is not possible to distinguish the proportion of these expenses that is used for personal consumption and the proportion that is incurred in order to earn income.

The remainder of this section discusses the tax expenditure concept in order to facilitate understanding of the numerical estimates. It also discusses the calculation and interpretation of the tax expenditures, including the key assumptions used in the analysis of Canadian tax expenditures.

Benchmark for Income Taxes

The benchmark for the personal and corporate income tax systems includes the existing tax rates and brackets, the unit of taxation, the time frame of taxation, the treatment of inflation in calculating income, and those measures designed to reduce or eliminate double taxation.

The definition of income is crucial to determining what is a tax expenditure. Tax provisions that provide for the deduction of current expenses incurred to earn income are considered to be part of the benchmark system and, therefore, are not considered tax expenditures. For example, the deductibility of labor costs or economic depreciation of business assets in determining business income would not be considered a tax expenditure.

It is important to emphasize that the definition of the benchmark tax structure (and, hence, the identification of tax expenditures), is subjective (see box 5.1). Reasonable differences of opinion may exist as to the interpretation and categorization of tax measures. For example, employment insurance (EI) premiums paid by an employee could be viewed either as an expense of earning income or as a tax used to finance an income transfer to the unemployed. From the first perspective, the current system of providing employees a tax credit for contributions would not be a tax expenditure. The credit for EI premiums merely recognizes an expense of earning income and, hence, is part of the benchmark tax structure. Conversely, one could argue that the tax credit for EI contributions represents a tax expenditure because the taxes paid by tax filers are generally not deductible against personal income taxes. For this reason, the tax treatment of EI premiums is reported as a memorandum item.

A more detailed discussion of the features of the benchmark for both the personal and corporate income tax systems follows.

Box 5.1. Benchmark for the Income Tax System

The definition of the benchmark tax structure (and, hence, the identification of tax expenditures) is subjective. A broad-based system is used as the benchmark for income taxes in the Canadian *Tax Expenditures and Evaluations* report.

The essential features for personal income tax are

- The existing tax rates and income brackets are taken as given.
- The tax unit is the individual.
- Taxation is imposed on a calendar-year basis.
- The tax base is partially adjusted for inflation.
- The benchmark incorporates structural features of the overall tax system that reduce or eliminate double taxation, such as the dividend gross-up and credit.

The essential features for corporate income tax are

- The existing general tax rate is taken as given.
- The tax unit is the corporation.
- Taxation is imposed on a fiscal-year basis.
- Nominal income (that is, no adjustment for inflation) is used in defining income.
- The benchmark incorporates structural features of the overall tax system that reduce or eliminate double taxation, such as the nontaxation of intercorporate dividends.

Tax Rates and Income Brackets

For the personal income tax system, the existing rate structure, including surtaxes when applicable, is taken to be part of the benchmark system.[1] The basic personal credit is also treated as part of this structure, as it is universal in its application and can be viewed as providing a zero tax rate up to an initial level of income. However, the cost of this credit is included as a memorandum item.

With respect to the corporate income tax system, the benchmark is the basic federal corporate income tax rate, including the surtax and the provincial abatement. Provisions that reduce this tax rate for certain types of activities or corporations are regarded as tax expenditures. These rates include the reduced tax rate for small business profits and the reduced tax rate for manufacturing and processing profits. The federal capital gains tax, when levied at the existing rate, is also considered part of the benchmark tax system.

Tax Unit

Personal income taxes in Canada are based on an individual's income. Consequently, the individual is taken as the benchmark tax unit for the purpose of identifying tax expenditures. This choice leads to the classification of the various provisions related to dependents, such as the spousal credit, as tax expenditures. This classification may differ in other countries where a family's income is the tax unit and where provisions such as the spousal credit would not be considered a tax expenditure.

The choice of the appropriate unit for the corporate income tax benchmark system raises a number of conceptual issues. There is a wide range of possible tax units, including the establishment or activity unit within a corporation, the single legal corporate entity, and the consolidated group of related corporations. The Canadian income tax system contains elements of all these approaches. For example, the view that the activity unit is the appropriate unit of taxation is consistent with the "at-risk" rules, which restrict the amount of investment tax credits and business losses that may be flowed out to limited partners. The view that the single legal corporate entity is the relevant tax unit is supported by the fact that income from one part of a business can be offset by other business losses within the same corporation, whereas losses by one corporation may not generally be used against the income of another corporation in the group. Other provisions in the current Canadian federal tax system allow corporate groups to reorganize their corporate structures without triggering any capital gains or recaptured depreciation. These rollover provisions lead to a deferral of capital gains and to recaptured depreciation, which would be appropriate if the tax unit is the consolidated group of related corporations. On balance, the view most closely related to the existing

system is that of the single legal corporate entity. For this reason, the single corporation is adopted as the benchmark tax unit, together with the availability of various rollover provisions that permit the deferral of capital gains when a corporate structure is changed.

Tax Period

The benchmark tax period for the personal income tax system is the calendar year. Accordingly, any measure that provides deferrals of taxable income to a subsequent year is considered a tax expenditure. For example, farmers are permitted to defer the receipt of income from the sale of grain through the use of special cash purchase tickets, and this deferral is listed as a tax expenditure.

The benchmark tax period for the corporate income tax system is the fiscal year. As with the personal income tax system, deferrals, such as the accelerated write-off of capital assets, are considered tax expenditures.

A strict application of the annual tax period would imply that measures that provide for the carryover of losses to other years would be tax expenditures. However, the relatively cyclical nature of business and investment income suggests that such income should be viewed over a number of years. Consequently, carryovers of losses are treated as part of the benchmark tax system. These provisions are provided in the memorandum items section of the tables produced in the Canadian *Tax Expenditures and Evaluations* report.

Treatment of Inflation

The corporate income tax system is based on nominal income, making nominal income the appropriate basis for the benchmark. The benchmark measure of income for personal income tax purposes is less precise. Although the thresholds for personal income tax brackets and the key credits are indexed, investment income is not fully adjusted for the effects of inflation. Canada uses the current partially indexed approach to define income for the personal income tax benchmark.

Avoidance of Double Taxation

Conceptual difficulties arise in deciding whether certain provisions that reduce or eliminate double taxation should be considered tax expenditures. For example, regarding the personal and corporate income tax systems as completely separate would suggest that such provisions are tax expenditures. However, double taxation provisions are an essential feature of the overall (that is, both corporate and personal) income tax structure. Without these provisions, income earned through corporations would be taxed twice: once at the corporate level and once at the personal level. For this reason, the dividend tax credit—one of the specific mea-

sures that provides relief from double taxation—is not considered a tax expenditure.

Similarly, another measure, the nontaxation of intercorporate dividends, is designed to ensure that income already taxed in one corporation is not taxed again upon receipt of a dividend by another corporation. Without this exemption, double taxation would occur, and the corporate income tax system would not be neutral across organizational structures. For example, consider a single corporation that currently operates as a number of divisions. Now suppose it reorganizes into a holding company with wholly owned subsidiaries instead of divisions. The profits from the subsidiaries flow to the holding company through intercorporate dividends. If these dividends were subject to taxation at both the subsidiary and the holding company levels, double taxation would occur. Consequently, the exemption of intercorporate dividends is not considered a tax expenditure.

Similar reasoning applies to the tax exemption of income of foreign affiliates of Canadian corporations. Canada either exempts certain dividend income paid by foreign affiliates from Canadian corporate income tax or provides a foreign tax credit for income tax paid in the other country. In either case, the intention is to ensure that income is not subject to double taxation (that is, once in the country of residence of the foreign affiliate and again in Canada when the dividends are paid).

Information on some of the measures that provide relief from double taxation is provided in the appropriate memorandum sections of the *Tax Expenditures and Evaluations* report.

Benchmark for the Goods and Services Tax

The GST is a broad-based, multistage, value added tax that is collected according to the destination principle and that features a tax credit mechanism to relieve the tax in the case of business inputs (see box 5.2). A more detailed discussion of the features of the GST benchmark follows.

Box 5.2. Benchmark for the Goods and Services Tax

The essential features for the goods and services tax (GST) are

- Basic structural features of a broad-based, multistage tax system
- Destination approach
- Single tax rate
- Calendar-year basis for the tax period
- Recognition of constitutional provisions for government sectors

GST as a Multistage Consumption Tax

The main structural elements of a multistage consumption tax are taken to be part of the benchmark. Under the multistage system, tax is applied to the sales of goods and services at all stages of the production, distribution, and marketing chain. At each stage, however, businesses are able to claim tax credits to recover the tax they paid on their business inputs. In this way, the tax system has the effect of applying the tax only to the value added by each business. Since the only tax that is not refunded is the tax collected on sales to final consumers, the tax rests ultimately on final consumption.

GST as a Destination-Based Tax

The benchmark system applies tax only to goods and services consumed in Canada. Accordingly, the tax applies to imports as well as domestically produced goods and services. Exports are not subject to the tax.

Single Tax Rate

The benchmark system has only one tax rate: the statutory rate of 7 percent. As a result, GST provisions that depart from this single rate are considered tax expenditures.

Tax Period

The benchmark tax period for GST purposes is the calendar year.

Constitutional Provisions for Government Sectors

Section 125 of the Constitution Act, 1867, provides that "no land or property belonging to Canada or any province shall be liable to taxation." This means that neither the federal nor the provincial governments (or their Crown agents) are liable to taxation by the other. Accordingly, constitutional immunity from taxation is recognized as part of the benchmark system for the GST.

The benchmark also recognizes that the federal and provincial governments have taken steps to simplify the operation of the tax for transactions involving government sectors.

The federal government decided to apply the GST to purchases by federal departments and Crown corporations to keep the tax as simple as possible for vendors. As a result, the GST and the benchmark system treat federal Crown corporations in the same manner as they do any other business entity.

By virtue of section 125, provincial governments and Crown agents are not liable for the GST on their purchases. However, the federal government and most provinces have entered into reciprocal tax agreements. These agreements specify situations in which each level of government

agrees to pay the sales taxes of the other; generally these situations involve applying tax to purchases made by Crown corporations. As a result, provincial Crown corporations are treated like any other business entity in the benchmark system.

Unlike provincial governments, however, municipalities, universities, public colleges, schools, and public hospitals are liable for the GST. In some instances, they receive partial rebates. Therefore, the benchmark system considers these sectors as paying tax on their purchases. The GST and the benchmark generally treat these sectors as final consumers—that is, they pay GST on their purchases, do not claim input tax credits, and do not collect GST on their sales.

The only exception to this benchmark treatment arises from the fact that municipalities, universities, public colleges, schools, and public hospitals engage in certain commercial activities analogous to those provided by the private sector. For example, some municipalities operate golf courses. Such commercial activities are taxable under the GST, and the GST paid on associated inputs can be claimed as input tax credits.

Types of GST Expenditures

By comparing the actual structure of the GST to the benchmark system, we can identify four types of tax expenditure:

1. *Zero-rated goods and services*. Under the GST, in addition to exports, certain categories of goods and services are taxed at a zero rate rather than at the general tax rate of 7 percent. Vendors do not charge GST on their sales of zero-rated goods and services (whether these sales are to other businesses or to final consumers). However, they are entitled to claim input tax credits to recover the GST they paid on inputs used to produce zero-rated products. As a result, zero-rated goods and services are tax free. One category of zero-rated sales is basic groceries (foods intended to be prepared and consumed at home). Other categories include prescription drugs, medical devices, and most agricultural and fish products.
2. *Tax-exempt goods and services*. Some types of goods and services are exempt under the GST. This means that the GST is not applied to these sales. Unlike zero-rated goods and services, however, vendors of exempt products are not entitled to claim input tax credits to recover the GST they paid on inputs used to produce these items. Examples of tax-exempt goods and services include long-term residential rents, most health and dental care services, daycare services, most sales by charities, most domestic financial services, municipal transit, and legal aid services.
3. *Tax rebates*. Certain sectors are eligible for rebates on a portion of the GST paid on inputs. For example, there are rebates for municipalities,

universities, public colleges, schools, and public hospitals. To the extent that these sectors make taxable sales, they can claim input tax credits to recover the tax they paid on inputs to those sales. If they provide tax-exempt services, however, they are eligible to receive rebates for only a portion of the GST paid on their inputs to those services. These rebates ensure that these sectors do not bear a greater tax burden on their purchases under the GST than they would have under the manufacturers' sales tax, which the GST replaced on January 1, 1991. This treatment is considered a tax expenditure because, under the benchmark system, these sectors are considered final consumers.

Other examples of tax rebates include those for charities, for substantially government-funded nonprofit organizations, for newly built housing, for new residential rental property, and for book purchases made by qualifying institutions. Also, foreign visitors to Canada are able to claim a rebate for the GST they pay on hotel accommodations and on goods they take home. Only the rebate for hotel accommodations is considered a tax expenditure, however, because goods taken home by foreign visitors are effectively exports, which are not taxable under the benchmark system.

4. *GST credit*. To ensure that the GST system is fair, Canada provides a GST credit through the personal income tax system to single individuals and families with low and moderate incomes. The credit is paid by check four times a year in equal installments. The total amount of the credit depends on family size and income and is calculated annually on the basis of information provided in personal income tax returns.

Memorandum Items for the GST

As previously indicated, some tax measures are presented as memorandum items even though they are not generally considered tax expenditures. For example, the refund of GST for certain expenses of employees is included as a memorandum item.

Many employees, such as commission salespeople, incur significant expenses in the course of carrying out their duties. Examples include restaurant meals and automobile expenses. Often, employers do not reimburse such expenses, except indirectly through salaries and commissions paid to employees. Since employees are not considered to be carrying on a commercial activity, they are not able to claim input tax credits for the GST they paid on these expenses. However, employees can receive a refund of the GST paid on those employment expenses that are deductible for income tax purposes. The refund of GST paid on employees' personal consumption expenses is a tax expenditure. However, it is not possible to determine exactly what portion of these expenses should

be considered personal consumption. Therefore, the refunds of GST paid on employees' expenses are reported as memorandum items.

Calculation and Interpretation of the Tax Expenditure Estimates

The various methods for the estimation of the budgetary effects of tax expenditures are described in chapter 1 of this book. Canada uses the revenue forgone method. Each estimate in the *Tax Expenditures and Evaluations* report represents the amount by which federal tax revenues were reduced because of the tax expenditure, assuming that all other factors remain unchanged. The estimates do not take into account changes in taxpayer behavior, consequential government actions, or feedback on aggregate tax collections through induced changes in economic activity. The estimates indicate the annual cash flow impact of each measure to the government, not its long-run or steady state revenue cost, subject to the following limitations:

- All measures are evaluated independently.
- All other factors remain unchanged.

Accordingly, the elimination of a tax expenditure would not necessarily yield the full tax revenues shown in the *Tax Expenditures and Evaluations* report. These methodological distinctions are important and have implications on the interpretation of the estimates. These concepts are discussed in more detail below.

Independent Estimates

The estimate of the cost of each tax expenditure is undertaken separately, assuming that all other tax provisions remain unchanged. An important implication of this principle is that the estimates cannot be meaningfully aggregated to determine the total cost of a particular group of tax expenditures or of all tax expenditures combined. As explained in more detail in the following paragraphs, this restriction arises from the fact that the income tax rate structure is progressive and that tax measures interact with one another.

Progressive Income Tax Rates

The combined effect of claiming a number of income tax exemptions and deductions may be to move an individual to a lower tax bracket than would have applied had none of the tax measures existed. To the extent that this movement occurs, aggregation of the individual estimates may

underrepresent the true cost to the federal government of maintaining all of them. For example, consider a taxpayer whose taxable income was $Cdn 1,000 below the threshold for the 22 percent tax bracket, placing her in the 16 percent bracket. Imagine that the taxpayer arrives at this level of taxable income by using two tax deductions of $Cdn 1,000 each: the deduction for home relocation loans and for registered retirement savings plan (RRSP) contributions. Eliminating either deduction by itself would increase her taxable income by $Cdn 1,000 and her federal tax liability by $Cdn 160. Eliminating both measures simultaneously, however, would not raise the tax liability by $Cdn 160 + $Cdn 160, but rather by $Cdn 160 + $Cdn 220 because the 22 percent tax rate would apply to $Cdn 1,000 of her income.

Aggregating the individual estimates for these two items would provide a misleading impression of the revenue impact of eliminating both of them. Therefore, the estimates cannot be meaningfully aggregated to determine the total cost of a particular group of tax expenditures or of all tax expenditures combined.

Although there is only one statutory tax rate for corporations, the various tax rate reductions create a de facto progressive tax rate schedule for some corporations. In this way, the same argument is valid for the corporate income tax system as well, although the effect is not as great as for the personal income tax system.

Interaction of Tax Measures

As noted above, the estimates are computed one at a time, assuming all other provisions remain unchanged. Given that tax provisions sometimes interact, the total cost of a group of tax expenditures calculated individually may differ from the dollar value of calculating the cost of the same group of tax expenditures concurrently. This difference occurs because adding the independently estimated costs of the tax provisions would result in double counting and so would not provide an accurate measure of the revenue that would be generated by simultaneously altering a group of measures.

For example, the nontaxation of veterans' allowances reduces the recipient's net income. Many measures, such as the medical expense tax credit, are calculated on the basis of net income. Thus, the reported estimate for the nontaxation of veterans' allowances represents not only the direct effect on government receipts of not taxing the allowances but also the indirect effect of the change on the cost of other tax measures (such as the medical expense tax credit) that depend on net income.

Since estimates for GST expenditures are made using the same methodological approach as estimates for income tax expenditures, they too cannot be aggregated because they may interact. The following dis-

cussion of hospital rebates and zero-rating of prescription drugs illustrates the differences between independent and concurrent estimates for these two provisions:

- *Eliminating hospital rebates*. If hospital rebates were eliminated, hospitals would no longer be able to recover 83 percent of the GST they pay on their purchases. However, they could continue to purchase prescription drugs on a tax-free basis because such drugs are zero-rated. The estimate for hospital rebates recognizes that the rebate would not have been claimed on zero-rated prescription drugs.
- *Eliminating the zero-rating of prescription drugs*. If prescription drugs were taxed at the GST rate of 7 percent, hospitals would pay the tax on their drug purchases but would still recover 83 percent of the tax through the rebate system. Therefore, the estimate for the zero-rating of prescription drugs is calculated net of the expected increase in the payment of hospital rebates.
- *Eliminating the two measures concurrently*. If both measures are eliminated, the effect on revenue is greater than the sum of the independent estimates because the GST would be payable on prescription drugs and hospitals would be unable to claim a rebate for these purchases.

Other Factors that Remain Unchanged

The estimates in the *Tax Expenditures and Evaluations* report show the amount by which federal tax revenues have been reduced as a result of the existence of each preference, assuming that all other factors remain unchanged. To evaluate the extent of the revenue reduction, the *Tax Expenditures and Evaluations* report recalculates federal revenues assuming that the measure in question has been eliminated. The difference between this recalculated figure and actual revenues provides the quantitative estimate of the cost of the tax expenditure.

The assumption that all other things remain the same means that no allowance is made for (a) behavioral responses by taxpayers, (b) consequential government policy changes, or (c) changes in tax collections because of altered levels of aggregate economic activity that might result from the elimination of a particular tax measure (see below). Incorporating these factors would add a large subjective element to the calculations.

Behavioral Response by Taxpayers

In many instances, removing a tax expenditure would cause taxpayers to rearrange their affairs to minimize the amount of extra tax they would have to pay, perhaps by making greater use of other tax

measures. Therefore, the omission of behavioral responses in the estimating methodology generates cost estimates that may exceed the revenue increases that would have resulted had a particular provision been eliminated.

As one example, consider the case of the deduction for RRSP contributions. Eliminating this provision would result in the amount of additional federal revenue indicated in the report only if the contributions were not directed to an alternative tax-preferred form of saving. However, the absence of the RRSP deduction might encourage individuals to place their funds instead in some other tax-favored instrument, such as shares in a labor-sponsored venture capital corporation. If such a response did occur, eliminating the RRSP deduction would result in a smaller increase in revenues than that indicated.

Consequential Government Policy Changes

The estimates ignore transitional provisions that might accompany the elimination of a particular measure and take no account of other consequential changes in government policy. For example, if the government were to eliminate a particular tax deferral, it could require the deferred amount to be brought into income immediately. Alternatively, the government might prohibit new deferrals but allow existing amounts to continue to be deferred, perhaps for a specified period of time. The estimates in the *Tax Expenditures and Evaluations* report do not provide for any such transitional relief.

Similarly, the estimates make no allowance for consequential government policy changes. For example, if capital gains on owner-occupied housing were made taxable under the personal income tax system, an argument could be made that the cost of maintenance should be deductible in the same way that other investment expenses are.

Effect on Economic Activity

The estimates do not take into account the potential effect of a particular tax provision on the overall level of economic activity and, thus, on aggregate tax revenues. For example, although eliminating the low corporate income tax rate for manufacturing and processing could generate a significant amount of revenue for the government, the amount of manufacturing activity could decline. That, in turn, could cause job losses, a reduction in the taxable income of many taxpayers, and, hence, a reduction in the aggregate amount of tax revenue collected. Furthermore, the *Tax Expenditures and Evaluations* report does not speculate about how the government might use the additional funds available to it and what effect these funds could have on other tax revenues.

Estimation Methods Used in Canada

Since 1994, the government of Canada has published annual estimates and projections of the various tax expenditures where data are available.[2] The latest publication, released in October 2002, covers the 1997 to 2004 period. The following section provides a description of the data sources and methodology used to estimate personal and corporate income tax, and GST expenditures.

General Description

Most personal and corporate income tax estimates are computed with personal and corporate income tax models. These two models simulate changes to the personal and corporate income tax systems by using statistical samples of tax returns. These data are collected by the Canada Customs and Revenue Agency (CCRA) for its annual publication *Tax Statistics on Individuals* and for a corporate sample file (CSF). The CSF data set is developed solely for the use of the Department of Finance.

Basic Principles of the Models

The models compare the estimated effect on revenue of possible tax changes by recalculating the taxes paid under a default tax system (control) with those calculated under a changed tax system (shock). For personal income tax, the tax model can simulate changes to any number of calculations, from total income subject to tax, to the credits used to reduce tax owed, including provincial tax payable. Targeted low-income benefit programs are also computed in the model, so that revenue effects contain both tax and benefit effects. For example, removing the deduction for moving expenses would affect both tax payable, because of the increase in income subject to tax, and the level of the Canada child tax benefit entitlement and the GST credit, as a result of the change in net income. At the corporate level, the recomputation of taxes takes into account the availability of unused tax credits, tax reductions, deductions, and losses that corporations would use to minimize their tax liability.

For those tax expenditures whose costs cannot be estimated using these models, supplementary data are acquired from a variety of sources, including Statistics Canada, Human Resources Development Canada, and various provincial departments among others.[3]

Estimating the cost of tax deferrals presents a number of methodological difficulties, in that even though the tax is not currently received, it may be collected at some point in the future. It is therefore necessary to derive estimates of the cost of providing such a tax deferral while at the

same time ensuring comparability with the other estimates presented. In the *Tax Expenditures and Evaluations* report, income tax deferrals are estimated on a current cash flow basis. Specifically, the cost is computed as the forgone tax revenue associated with the additional net deferral in the year (deductions for the current year minus the income inclusion from previous deferrals). The computed estimates thus provide a reasonably accurate picture of the ongoing costs of maintaining a particular tax provision in a mature tax system. They can be aggregated over time without double counting and are comparable to estimates of the costs associated with tax credits and deductions.

The costs of the majority of the GST expenditures are estimated using a national GST base tax model constructed using Statistics Canada's input–output tables and the national income and expenditure accounts. In cases where estimates are not derived using this model, supplementary data from a variety of sources are used, including CCRA administrative data.

Developing Future Projections

In contrast to the estimates of tax expenditures for the historical period, where values of the tax expenditures can generally be obtained from tax statistics or other historical data, projections of tax expenditures must rely on estimated relationships between tax expenditures and explanatory economic variables. Using these relationships, the *Tax Expenditures and Evaluations* report projects the values for the explanatory variables, including announced tax policy changes, thus permitting an estimation of the future expected values of tax expenditures.

Projections for the explanatory variables are based on either the latest available budget forecasts—for example, gross domestic product (GDP), population, employment, corporate profits, inflation, and consumer spending—or on past trends in the tax expenditure. Where projected tax expenditures were not obtained using these approaches, information on the alternative methodology is provided in the *Tax Expenditures and Evaluations* report. It is also important to note that the projections would take into account the effect of policy changes announced by the federal government.

Caveat with Projections

Any projections are inherently subject to forecast error. Analysts familiar with forecasts recognize that forecasting is not an exact science. Future values for key explanatory variables are based on best judgments, and actual and announced policies are assumed for the forecast period. Furthermore, the relationships between the variables that are being explained and the explanatory variables may not be robust and could

quickly change over time. For all these reasons, the projected values of tax expenditures published in the Canadian *Tax Expenditures and Evaluations* report should be treated as best efforts that do not have any greater degree of reliability than the variables that explain them.

For example, if the level of GDP explains a tax expenditure, one could not expect the projected level of that tax expenditure to materialize if the expected level of GDP is not observed. Even if the expected level of GDP did materialize, the level of the tax expenditure may still vary if, in the future, the relationship between the tax expenditure and GDP turns out to be different from that estimated on average in the past. Therefore, in general, one should expect the degree of reliability of the projected tax expenditures to be at best equal to that of the underlying explanatory variables.

Comparison with Direct Expenditures

In comparing the cost of the tax expenditures in the *Tax Expenditures and Evaluations* report with direct spending estimates, one must note that a dollar of tax preference is often worth substantially more to the taxpayer than a dollar of direct spending. In most cases, government grants (that is, direct spending) are taxable to the recipients. For example, consider an individual facing a marginal tax rate of 29 percent. A deduction of $Cdn 100 would be worth $Cdn 29. If, instead, the government were to provide the individual with a taxable grant of $Cdn 29, after-tax income would increase by only $Cdn 20.59, because the individual would face an income tax liability of $Cdn 8.41 ($Cdn 29 × 29 percent).

The same conclusions do not always apply to all tax expenditures. Consider, for example, an investment tax credit to a corporation with respect to capital equipment acquired to carry out scientific research and experimental development in Canada. The cost to the government of providing a 20 percent tax credit would, in most circumstances, be the same as it would be if the government had provided a direct grant of 20 percent. Because investment tax credits are considered to be assistance, they are treated in the same manner as direct government grants or subsidies. Either the 20 percent tax credit, like a direct grant, is included in income and is subject to corporate income tax, or it reduces the capital or other costs deductible by the taxpayer.

Personal Income Tax

Data Sources

As outlined previously, the main data source used to estimate personal tax expenditures is a statistical sample of tax returns collected by CCRA for its production of *Tax Statistics on Individuals*, which is available

through the CCRA Web site.[4] Using a sample facilitates the analysis of returns and reduces the cost of collecting data. It also provides time and resources for additional data verification, thereby ensuring higher data quality.

In the sample, one tax filer may represent as many as 1,000 other tax filers with similar characteristics. The more unique the attributes, the lower the rate of representation will be. The last sample available (covering the 1999 tax year) was derived from the following characteristics. The entire population was divided into 1,274 socioeconomic levels (strata) developed from the possible combinations of the following: primary source of income, place of residence, tax status, and total income range. An additional six strata covering filers with unusual characteristics included earners with total income greater than $Cdn 250,000, outliers (tax filers with exceptional claims and deductions), and nonresidents. The total number of strata is, therefore, 1,280.

For the 1999 tax year, 466,520 returns were selected for the sample. Each observation was assigned a weight that represented the ratio of the number of filers in each of the strata on the universe population to the number of filers selected in the comparable strata on the sampled population. The weighted values for all tax and economic variables contained in the sample provide a good representation of the 21,882,200 returns that were filed for the 1999 tax year.

The 1999 sample included 160,080 returns (34.3 percent of the total) that were filed electronically. The use of electronically filed returns reduces the data capture cost.

Section 241(4) of the Income Tax Act allows the Personal Income Tax (PIT) Division of the Department of Finance to have access to this annual sample. The PIT Division also uses other sources of data to produce the tax expenditures. In particular, the department has access to the T1 universe data produced by the CCRA. Data produced by Statistics Canada are also used in some estimates (such as estimates of the nontaxation of employer-paid insurance premiums for private health plans, the deferral on income from destruction of livestock, or the deferral on income from grain sold through cash purchase tickets). Other data sources include the annual public accounts of Canada, data from the Canada Housing Mortgage Corporation, and data provided by the Department of Human Resources Development Canada (see Department of Finance 2000).

T1 Microsimulation Model

The T1 microsimulation tax model is a personal computer–based system developed and maintained exclusively by the PIT's Quantitative Analysis Group. It has been designed to simulate the assessment of taxes for individuals who file T1 tax returns. The model uses income tax return

data collected by CCRA for its statistical file, augmented with additional tax items required to complete the tax calculation. The purpose of the system is to allow users to simulate changes to any part of the income tax system. For example, the user can redefine some components of income in the calculation of total income, modify the exemptions and deductions included in the determination of both net and taxable income, or modify any other government-controlled parameters (such as tax rates) in the assessment of taxes. Although the model cannot predict behavior, it is possible for the user to impute additional characteristics to a filer to simulate an expected behavioral response.

Before 1990, all tax simulations and cross-tabulation requests were run using a tax model designed and maintained by CCRA. This model was based on information gathered from the tax assessment database for a stratified sample of approximately 350,000 to 450,000 records, which were weighted to represent all tax filers in Canada. A control tax base was then created by recomputing all forms in the tax system for that tax filer using available tax data. The simulation request (shock) would then be run and compared against this controlled base. Although the model structure provided a high level of functionality, the turnaround of requests was slow, and operator coverage during peak budget periods was inadequate. These problems prompted the move toward achieving greater autonomy over our information-processing capabilities.

PIT's T1 tax model was created in the early 1990s as an internal tool for providing rapid responses to queries for cross-tabulated tax information and for simple tax simulations. Using data files extracted from the CCRA model database, rudimentary tax calculators were developed to simulate mainly broad structural changes, such as changes to tax rates, taxable income brackets, and refundable tax credits. Over the next several years, the functionality of the model was expanded to include full provincial and family-based tax calculations. During this time, the CCRA tax model was still the official tax model for such purposes as the *Tax Expenditures and Evaluations* report. However, in 1997 the current T1 tax model was developed to satisfy the increasing demands within the division and the department as a whole. Since then, all requests for T1 information have been processed using this model.

The primary purpose of the model is to allow simulations of the revenue effect of potential tax policy changes being considered for the annual federal budget and of the effect of such changes on Canadians (that is, by identifying the winners and losers), as well as allowing the simulations required for the *Tax Expenditures and Evaluations* report.

Because most budget estimates are announced to take place sometime in the future, and because the latest tax data are always representative of a past tax year, mechanisms were designed to grow the model to

represent future tax years. The projection process affects several main components of the model: population, income and deductions, and tax system structure and parameters. The projection is done at the micro level, that is, for each observation in the sample. With this capability, estimates can be produced for any year over a 10-year time horizon, from the latest available tax year.

The calculations performed within the model use parameter variables, which are initialized each time the model is run to the appropriate values for the tax year being simulated. For example, the basic personal amount would be initialized to $Cdn 6,456 for a 1998 simulation, but for a 2001 simulation, it would automatically be set to $Cdn 7,412. The calculation code in both cases is the same, except for the value contained in the parameter variable. Parameterization makes the programs more generic, allowing them to be used for any given tax year simulation. The parameters are maintained in a separate external file, which contains both federal and provincial tax parameters for tax years from 1950 to 2025.

The production of tax expenditures requires that each of the tax measures available in the T1 model be simulated for each tax year presented in the *Tax Expenditures and Evaluations* report. For example, to measure the cost of the disability tax credit, the user would set the value of the *disability tax credit* to zero for each of the years presented in the *Tax Expenditures and Evaluations* report, run the T1 model, and compare the value of federal revenues under this scenario with the status quo. The difference between the option run and the status quo run would provide the estimated value of forgone federal revenues by providing a disability tax credit. A list of all the tax expenditures estimated using the T1 model is provided in appendix A.

Projections

Because personal income tax data for a given year are obtained 1.5 years after the end of that tax year, the T1 model produces tax expenditure estimates with a 3-year lag (for example, for the 2003 publication, the most recent income tax data are from 2000). Projections of tax expenditures rely on estimated historical relationships between the tax expenditures and the explanatory economic variables (generally those reflecting the state of the economy). Projections also take into consideration the effect of announced tax changes; projected growth in other explanatory variables (for example, GDP, population, employment, wages and salaries, corporate profits, inflation, and consumer spending); and past trends in tax expenditures. As with the historical estimates, future projections represent the estimated amount by which the federal tax revenues would be reduced because of the tax expenditure, assuming all but announced budget proposals are held constant. The population growth is based on

the demographic growth path produced by Statistics Canada, whereas the changes in economic variables such as employment, wages and salaries, corporate profits, and GDP are based on the latest economic forecast of the Department of Finance's Fiscal Policy and Economic Analysis Branch. These fiscal policy forecasts are produced for the government of Canada budget documents. Projected growth for these variables is used to grow the various components of the T1 sample file to the desired year.

Corporate Income Tax

Data Sources

The main data source used to estimate corporate income tax expenditures is a statistical sample of corporate income tax (T2) returns collected by CCRA on behalf of the Department of Finance. As is the case for the T1 sample, the use of a sample facilitates the analysis of returns and reduces the costs of collecting data. It also provides time and resources for additional data validation, hence ensuring higher overall quality. The statistics derived from the sample are not available to the public.

In the T2 sample, one corporate tax filer may represent as many as 1,500 other corporate tax filers with similar characteristics. The last sample available (for the 1997 tax year) when the 2002 *Tax Expenditure and Evaluating* report was produced was derived from the following characteristics. The entire population was divided into 2,800 strata developed from the possible combinations of industrial sector (25), region (7), corporation type (2), tax status (2), and assets size (4). Also, three strata covered filers with unusual characteristics. Those strata include two categories for outliers (corporations with gross income greatly exceeding the total value of their assets) and one category for special types of corporations (for example, mutual funds corporations). The total number of strata was, therefore, 2,803.

The two corporation types were the (a) Canadian–controlled private corporation and (b) public corporation. The tax status was used to separate taxable corporations (that is, those with taxable income greater than zero) from those that were not taxable. It is important to note that the boundaries for setting the asset size varied with the industrial sector. Also, the probability of selecting large corporations (asset size 4) was set to 100 percent (that is, large corporations were selected with certainty).

In 1997, there were just over 16,000 corporations in the T2 sample database. Each observation was assigned a weight that represented the ratio of the number of corporations in each of the strata in the population universe to the number of corporations selected in the comparable strata of the sample population. The weighted values for all tax and economic variables contained in the sample provided a reliable representation for

the roughly 950,000 returns that were filed in tax year 1997 by active corporations. The sample data were selected and keyed from the T2 tax returns, the accompanying T2 schedules, and the financial statements and balance sheets provided with the T2 returns.

The annual corporate sample is provided to the Corporate Income Tax (CIT) Division under section 241(4) of the Income Tax Act. The CIT Division also uses other sources of data to produce the tax expenditures estimates and projections. In particular, the department has access to the corporation universe database produced by CCRA, as well as to other administrative databases maintained by the agency. Other data sources include Statistics Canada, the Office of the Superintendent of Financial Institutions, and the Public Accounts of Canada (see Department of Finance 2000).

T2 Microsimulation Model

Like the T1 microsimulation tax model, the T2 model is a personal computer–based program that was developed and maintained exclusively for the CIT Division of the Department of Finance. It has been designed to simulate the assessment of taxes for corporations that file T2 tax returns. The model uses data collected by CCRA for the CSF. The purpose of the program is to allow users to model changes to any part of the corporate income tax system. Examples include redefining the components of income in the calculation of taxable income (by, for example, making changes to tax credits), and then evaluating the effect on taxes payable. The model is static in nature and does not take into account behavioral responses.

Before 2001, all tax simulations and cross-tabulation requests were run by using a tax model designed and maintained by CCRA for the Department of Finance. A control tax base was created by recomputing every tax form for each tax filer in the sample, using available tax data. If a corporation did not use all of the deductions or credits at its disposal, the model would recompute the tax after forcing the corporation to maximize its exemptions, deductions, and credits. This maximization was necessary to ensure that the cost of a policy change would not be biased as a result of the unused deductions or credits. The simulation request (shock) would then be run and compared against this controlled base. Although the model structure provided a high level of functionality, a decision was made to move toward achieving greater autonomy over the Department of Finance's information processing capabilities.

As a result, the CIT Division created a T2 tax model in 2001. The goal of the T2 tax model is to provide an internal tool that would give rapid responses to tax simulation queries for measuring the effect of potential tax changes. Its primary purpose is to provide estimates of the effect on

revenue of potential tax policy changes being considered for the annual budget and estimates of the effect of such changes on Canadian businesses (that is, by identifying the winners and losers), as well as providing the simulations required for the *Tax Expenditures and Evaluations* report.

Because most budget estimates are announced sometime in the future, while the latest tax data available represent a past tax year (for example, the 1997 tax year was used in the 2002 *Tax Expenditures and Evaluations* report), mechanisms that take into account announced policy changes were designed to grow the model to allow for estimation of policy changes under a revised benchmark. For example, to determine the value for the 2004 tax expenditures, the user would run the 2004 tax model twice:

- Once with the 2004 tax parameters (for example, using a 21 percent general tax rate rather than the 28 percent general tax rate applicable in 1997) with no policy changes.
- Once with the 2004 tax parameters and the desired policy change.

The comparison of the results from these two runs would provide the user with the revenue effect of that policy change using a 2004 benchmark tax system. However, unlike the T1 model, the T2 model does not allow for changes in economic variables and, as such, would represent the revenue impact of the policy change assuming a 1997 level of economic activity.

Production of the tax expenditures requires that each of the tax measures available in the T2 model be simulated for each year required by the *Tax Expenditures and Evaluations* report. For example, to measure the value of the reduced tax rate for small businesses, the user would set the value of the small business rate reduction to zero for each of the years presented in the *Tax Expenditures and Evaluations* report, then run the T2 model and compare the value of federal revenues under this scenario to the status quo for each year. The difference between the optional run and the status quo run yields the estimated value of forgone federal revenues from providing small businesses with a reduced tax rate. A list of all tax expenditures estimated using the T2 model is provided in appendix B.

Projections

Because corporate income tax data for a given tax year is usually obtained 2.5 years after the end of that tax year, the T2 model produces tax expenditure estimates with a 4-year lag (for example, for the 2002 publication, the most recent CSF data are from 1998). Projections of tax expenditures rely on estimated historical relationships between tax

expenditures and explanatory economic variables (generally those reflecting the state of the economy). Projections take into consideration the effect of announced tax changes; projected growth in other explanatory variables (for example, GDP, corporate profits, business investments); and past trends in tax expenditure. As with historical estimates, future projections represent the estimated amount by which federal tax revenues would be reduced because of tax expenditures, assuming all announced budget proposals are held constant.

Unlike the T1 model, which is aged to the desired year at the micro level by using growth in various socioeconomic factors, the T2 model does not allow for such aging. Therefore, the various tax expenditures are projected to the desired year using aggregated growth factors from economic variables, such as corporate profits and overall GDP. Projected variables are based on the Fiscal Policy and Economic Analysis Branch's latest economic and fiscal forecast, which is usually the one produced for the government of Canada budget documents. As noted above, announced budget changes are taken into account by running the T2 model to the desired benchmark year before the economic growth factors are applied.

The problem with such an approach is that corporate taxes are quite cyclical in nature. Therefore, growth factors derived from variables such as GDP and corporate profits could be imprecise in some cases. For example, the economic slowdown experienced in North America in 2001 was more important for certain industrial sectors (for example, the high-tech sector) than others (such as the oil and gas sector). Thus, the use of macro growth factors may fail to reflect this outcome. In such cases, projection of certain tax expenditures may require the use of alternative growth factors.

Goods and Services Tax

Data Sources

The main data used to estimate tax expenditures associated with the GST are the national input–output (I–O) tables produced by Statistics Canada. Tax expenditures estimation makes use of three main components of the I–O system: the make (output) matrix, the use (input) matrix, and the final demand matrix. The make matrix depicts the commodity outputs by industry, whereas the use matrix reveals the intermediate and primary inputs of production by industry. For 1998, both the use and make matrix had dimensions based on 299 industrial sectors and 725 commodities. The final demand matrix consists mostly of final consumption, investment in machinery and equipment, and construction and is disseminated by 168 final demand categories and 725 commodities. The final demand matrix is based on the following aggregate expenditure identity:

GDP = Consumption + Investment + Government spending + (Exports – Imports)

Tax expenditures estimates also make use of personal expenditures and housing data from the Statistics Canada System of National Accounts (SNA), as well as data from the Canada Mortgage and Housing Corporation (CMHC) and some CCRA administrative data. The projection of tax expenditures also uses both internal and private sector forecasts (Department of Finance 2000).

National GST Base Tax Model

As explained above, under the Canadian GST system, tax is applied to the sales of goods and services at all stages of the production, distribution, and marketing chain. At each stage, however, businesses are able to claim tax credits to recover the tax they paid on their business inputs and capital purchases. As a result, the tax system has the effect of applying the tax only to the value added by each business. Given that the only tax that is not refunded is the tax collected on sales to final consumers, the tax rests ultimately on final consumption.

Two approaches can be used to estimate the revenues from such a tax system. The first is a supply-side approach that examines the sales and purchases made by each business to determine the difference between the amount of taxes collected and the amount paid by each firm. A second approach, used for estimating tax expenditures in Canada, looks at final consumption, given that the GST is equivalent to a retail sales tax levied on the sale of goods and services to the final consumer.[5] On the basis of this equivalency, the GST base and revenues can be estimated from a sales tax model constructed using the data obtained from Statistics Canada's national I–O tables.

The data from the I–O tables are used to derive detailed expenditures by commodity for households, public sector bodies, and exempt businesses. The personal expenditure categories of the I–O tables, along with the investment categories for residential construction, are used to derive commodity expenditures for households. The commodity expenditures of exempt businesses are derived from the use matrix of the I–O tables in conjunction with data obtained from the appropriate investment categories. As for exempt businesses, the commodity expenditures of public sector bodies (that is, the federal government, provincial governments, municipalities, universities, school boards, public colleges, public hospitals, charities, and nonprofit organizations) are derived from the use matrix of the I–O tables and the appropriate investment categories.

The commodity data are used to identify the effect of the GST provisions that either zero-rate or exempt certain goods and services. In some

cases, modifications are made to the data derived from the I–O tables to account for the structure of the GST. For example, the value of investment in residential construction does not take into account the value of raw land (raw land does not represent value added in the SNA), which is subject to the GST. Therefore, data from other sources within Statistics Canada have been used to adjust the value of investment in residential construction presented in the national I–O tables.

The national GST base tax model applies the following commodity identity:

$$\text{Output} = \text{Input} + \text{Final demand}$$

Thus, everything that is made has to be bought, or, in other words, total supply equals total demand. The model is constructed by applying what are referred to as *blueprints* on the various components of the national I–O tables. There are two sets of blueprints: one for exempt commodities and another for fully taxable commodities. Blueprints display the proportion of expenditure in each cell that is subject to the GST. The tax base is then derived by multiplying the use and final demand matrices by the corresponding blueprint matrices.

The national model is run on a base year—the latest year for which I–O tables are available—and then calibrated so that estimated revenues from the model match aggregate revenues provided by the administrative data.

Once the model is calibrated, the tax expenditure estimates are calculating by running the national model with an optional system that removes a specific GST provision but keeps all other factors constant. For example, to calculate the value of zero-rating basic food, the model would set the blueprints for basic food commodities to one, implying that they are fully taxable. Estimated federal revenues under this scenario would then be compared to the revenues under the status quo system to determine the value of the tax expenditure of zero-rating basic food.

Projections

Since final I–O tables for a given year are available with a 3-year lag, data available from the SNA are used to project the effect of each GST provision for the relevant historical year. Expenditure data contained in the Department of Finance's Canadian economic and fiscal model (CEFM), which is produced by the Fiscal Policy and Economic Analysis Branch—as well as some projections produced by the Conference Board of Canada (a private sector forecaster)—are then used to project the effect of most of the GST provisions over the forecast period. The model is run for each of the years covered by the *Tax Expenditures and Evaluations* report.

In essence, each element or cell of the national sales tax model's base year (for example, 1998 for the 2002 *Tax Expenditures and Evaluations* report) is projected to future years on the basis of the most relevant growth factor for that element or cell using Statistics Canada's SNA data for historical years (for example, for 1999 to 2001 in the 2002 report) and a mix of the economic forecasts by the Department of Finance and by Conference Board of Canada's for future years (for example, 2002 to 2004 in the 2002 report). The Conference Board of Canada forecasts are used because they contain more detail than the internal forecast. For example, the Conference Board forecast provides eight different categories of consumer expenditures as opposed to only three categories in the internal forecast. An example to illustrate the projection process for televisions, video recorders, and accessories is provided in table 5.1.

Conclusion

The estimation of tax expenditures is not an exact science. Furthermore, there is no universally accepted definition or methodology. For this reason, the government of Canada *Tax Expenditures and Evaluations* report provides the most comprehensive set information possible. This approach, which many analysts have found useful, avoids the controversy concerning the

Table 5.1. Projection Process for Televisions, Video Recorders, and Accessories

Net expenditures in the 1998 I–O tables	*$Cdn 2.28 billion*
Taxable proportion (blueprint)	100%
Tax base before calibration in 1998	$Cdn 2.28 billion
Calibration factor	99%
Calibrated tax base for 1998	$Cdn 2.257 billion
Growth in televisions, video recorders, and accessories (final demand expenditures category) between 1998 and 2001[a]	20%
Growth factor for consumer expenditures on durables goods between 2001 and 2002[b]	5%
Overall growth between 1998 and 2002	26% (1.2 × 1.05)
Estimated tax base for televisions, video recorders, and accessories in 2002	$Cdn 2.844 billion

a. From Statistics Canada SNA.
b. Based on Conference Board of Canada and internal forecasts.

exact definition of a tax expenditure. However, although this approach has the benefit of providing the maximum amount of information possible, it does have a potential downside. Specifically, the user of the tax expenditure information may be tempted to simply consider all the reported deviations as tax expenditures without considering what truly constitutes a tax expenditure.

Sophisticated estimation methodologies have been developed over the years to produce the tax expenditures. Together with the availability of data from tax returns and from other sources, such as Statistics Canada, the estimation and the forecasting of tax expenditures in Canada is increasingly feasible. These methodologies are being continuously improved as new tools become available. At the same time, for the most part, estimates and projections based on more current information do not differ significantly from those published previously. This fact indicates that the methodologies used to estimate and project the tax expenditures are robust.

In the future, the rapid development of information technologies will allow the Department of Finance to have access to more and improved information for the estimation of tax expenditures. For example, in the case of corporate income taxes, the Canada Customs and Revenue Agency has, since October 2000, been capturing all of the information contained on the T2 returns and on the accompanying schedules of all Canadian corporations. CCRA has also been collecting all information from the balance sheets and financial statements. This improved information should be available faster, allowing the department to use more recent data for projection purposes. In addition to improving the quality of the estimates and projections, availability of these data could also allow the estimation of tax expenditures where no data were previously available. In the past, the accessibility and analysis of such a massive volume of information would have been impractical. New technologies have radically altered our abilities in these areas.

Finally, despite the difficulties associated with the estimation of tax expenditures, estimates and projections provide useful information on how the government allocates its financial resources. This information is also useful during prebudget consultations for Parliamentary Committees and private sector organizations seeking improvements and enhancements to specific tax policies.

Notes

1. Effective January 1, 2001, federal surtaxes on personal income tax have been eliminated.

2. These estimates are available on the Department of Finance's Web site at <http://www.fin.gc.ca/toce/2002/taxexp02_e.html>.

3. Data sources used to evaluate tax expenditures are presented in the next section. However, for a detailed list of the other sources used for estimating tax expenditures, see Department of Finance 2000.
4. Before the 2000 edition (which covered the 1998 tax year), tax data were made available in paper-based publications called *Income Statistics* (1999 edition) or *Tax Statistics on Individuals* (1998 and earlier editions). The *Interim Statistics (Universe)* and the *Final Statistics (Universe)* are no longer printed and are available through the CCRA Web site at <http://www.ccra-adrc.gc.ca/tax/individuals/stats>.
5. These two approaches could be reconciled using the I–O structure, given that total supply equals total demand.

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Appendix A
List of Personal Income Tax Expenditures Calculated Directly from the T1 Model

Culture and Recreation

Nontaxation of capital gains on gifts of cultural property
Clergy residence

Education

Tuition fee credit
Education credit
Education and tuition fee credits transferred
Education and tuition fee credits carryforward
Partial exemption of scholarship, fellowship, and bursary income
Student loan interest credit

Employment

Canada and Quebec pension plan deduction for the self-employed
Deduction of home relocation loans
Northern residents' deductions
Overseas employment credit
Employee stock options
Deduction for registered retirement savings plan contributions
Deduction for retirement savings plan contributions
Taxation of RRSP withdrawals:
  RRSP retirement income fund/annuity income
  RRSP withdrawals
Taxation of registered pension plan withdrawals

Family

Spousal credit
Caregiver credit

Equivalent-to-spouse credit
Infirm dependant credit

Farming and Fishing

$Cdn 500,000 lifetime capital gains exemption for farm property

General Business and Investment

Partial inclusion of capital gains
Deduction of limited partnership losses
Investment tax credits

Health

Disability credit
Medical expenses credit
Medical expense supplement for earners

Income Maintenance and Retirement

Nontaxation of guaranteed income supplement and spouse's allowance benefits
Nontaxation of social assistance benefits
Nontaxation of worker compensation benefits
Treatment of alimony and maintenance payments
Age credit
Pension income credit
Saskatchewan pension plan

Small Business

$Cdn 500,000 lifetime capital gains exemption for small business shares
Deduction of allowable business investment losses
Labor-sponsored venture capital corporations credit

Other Items

Charitable donations credit
Reduced inclusion rate for capital gains arising from certain charitable donations
Political contribution credit

Memorandum Items

Childcare expense deduction
Attendant care expense deduction
Moving expense deduction
Deduction of carrying charges incurred to earn income
Deduction of meals and entertainment expenses
Deduction of farm losses for part-time farmers
Farm and fishing loss carryovers
Capital loss carryovers
Noncapital loss carryovers
Logging tax credit
Deduction of resource-related expenditures
Deduction of other employment expenses
Deduction of union and professional dues
Nontaxation of employer-paid employment insurance premiums
Employment insurance contribution credit
Canada and Quebec pension plan credits
Supplementary low-income credit
Nontaxation of employer-paid Canada and Quebec pension plan premiums
Foreign tax credit
Dividend gross-up and credit
Basic personal credit

Appendix B
List of Corporate Income Tax Expenditures Calculated Directly from the T2 Model

Tax Rate Reductions

Reduced tax rate for small businesses
Reduced tax rate for manufacturing and processing
Reduced tax rate on general income of small businesses
Reduced tax rate for credit unions

Tax Credits

Research and development investment tax credit
Atlantic investment tax credit
Investment tax credits claimed in current year but earned in prior years
Political contributions tax credit

Exemptions and Deductions

Partial inclusion of capital gains
Royalties and mining taxes and resource allowance
Earned depletion
Deductibility of charitable donations
Deductibility of gifts to the Crown

Deferrals

Allowable business investment losses
Holdback on progress payments to contractors
Expensing of advertising costs

Other Items

Surtax on the profits of tobacco manufacturers
Temporary tax on the capital of large deposit-taking institutions

Memorandum Items

Refundable taxes on investment income of private corporations:
- Additional Part I taxes
- Part IV tax
- Dividend refund
- Net expenditure

Refundable capital gains for investment corporations and mutual fund corporations

Loss carryovers:
- Noncapital losses carried back
- Noncapital losses applied to current year
- Net capital losses carried back
- Net capital losses applied to current year
- Farm losses applied to current year

Deduction of meals and entertainment expenses

Patronage dividend deduction

Logging tax credit

Investment corporation deduction

6
Tax Expenditures in the Netherlands

Leo van den Ende, Amir Haberham, and Kees den Boogert
Ministry of Finance, The Netherlands

In the Netherlands, tax expenditures go back a long way. In *Tax Policy in the Netherlands from 1800 till after 2000*, Ferdinand Grapperhaus, a Dutch professor of tax law, states that the patent tax (levied from 1805 to 1893) already included exemptions for sailors and fishermen and that these exceptions were intended to stimulate economic activity (Grapperhaus 1997). From the beginning of their existence, wage and income taxes have also included tax expenditures, although not officially recognized as such at the time. The concept of tax expenditures was not commonly known until the 1960s. As in most Organisation for Economic Co-operation and Development (OECD) countries, the historical tax expenditure discussion in the Netherlands refers primarily to direct taxes. Starting in budget year 1999, the Budget Memorandum now includes a separate annex on tax expenditures known as the Annual Tax Expenditure Report (ATER). This report is not directly linked to the budget, but serves as additional background information for Parliament. There is no statutory obligation to produce tax expenditure reports on a regular basis. Until budget year 2002, the tax expenditure report only included tax expenditures in the wage and income tax and the corporation tax. The ATER of the Budget Memorandum for 2003 introduced an overview of tax expenditures for indirect taxes, including value added tax (VAT), as well as for the estate and gift tax.

History of Tax Expenditures in the Netherlands

In 1976, the International Fiscal Association (IFA) held a conference on tax expenditures (see box 6.1). The Dutch national report for the IFA conference, "Tax Expenditures as an Instrument for the Achievement of Government Goals," was written by two professors of public finance, Victor Halberstadt and Flip De Kam. Using a relatively broad definition, they

Box 6.1. Tax Expenditures in the Netherlands: A Timeline

The history of tax expenditures in the Netherlands is marked by the following events:

1976	International Fiscal Association conference on tax expenditures
1977	Installation of Working Party on tax expenditures by the minister of finance
1987	Publication of report of Working Party on tax expenditures
1994	Publication of government paper "Building Blocks for Tax Reform"
1998	Publication of first edition of the Tax Expenditure Report in Budget Memorandum 1999
1999	Publication of report of the Netherlands Court of Audit on the use of tax expenditures
2002	Publication of fifth edition of Tax Expenditure Report in Budget Memorandum 2003

made the first inventory of tax expenditures in the Dutch wage and income tax and corporation tax and estimated their cost.

In 1977, the minister of finance decided to set up a working group to study relevant provisions in Dutch tax law. The task of the working group was threefold:

- To define tax expenditure
- To examine, on the basis of this definition, all existing provisions, such as tax exemptions, deductions, allowances, and other tax relief in order to identify existing tax expenditures
- To calculate the budgetary importance of each tax expenditure

In 1987, the working group published a report titled, "Tax Expenditures in the Dutch Wage and Income Tax." The report took a long time to develop because it proved difficult to find a satisfactory definition of the concept of *tax expenditures*. The working group recommended that the 1987 report be considered the final report and that there should be no follow-up for other taxes. The government adopted this recommendation. It also decided not to produce regular updates of the report. The report included a list of tax expenditures in the wage and income tax along with their budgetary implications for tax year 1984. (Details on the report's definition of tax expenditures are given later in this chapter.)

In 1994, the government paper "Building Blocks for Tax Reform" was published. It contained a technical analysis of several options for wage

and income tax reform as well as new calculations of the budgetary effects of tax expenditures on wage and income tax for fiscal year 1994. The tax expenditure report of 1987 served as a point of reference; hence, it was possible to systematically compare the use of tax expenditures in 1984 and 1994. The report observed that the use of tax expenditures in the wage and income tax (including the corporation tax) had increased from 0.66 percent of gross domestic product (GDP) in 1984 to 1.53 percent in 1994.

In 1998, the first Annual Tax Expenditure Report was published as an annex of Budget Memorandum 1999. The purpose of the ATER was, and still is, to provide Parliament with insight into the budgetary cost of tax expenditures. The impetus for the ATER was the criticism by Parliament and the Netherlands Court of Audit that, unlike the costs of direct expenditures, the costs of tax expenditures were not visible. The consequence was an unreported loss of tax revenue.

In 1999, the Netherlands Court of Audit published a report titled, "Taxation as a Policy Instrument." It was largely devoted to tax expenditures. The Netherlands Court of Audit criticized several aspects of the use of tax expenditures. Two important criticisms were (a) a lack of clear and verifiable policy goals for individual tax expenditures and (b) an inadequate evaluation of specific tax expenditures.

In September 2002, the fifth edition of the ATER was published as part of Budget Memorandum 2003. This edition introduced an overview of tax expenditures in indirect taxes and in the estate and gift tax. For the first time, because of the need to generally decrease expenditures, the number of tax expenditures decreased.

The annual publication of tax expenditure reports has actively contributed to the discussion on tax expenditures in the Netherlands. Each year the report examines a different tax expenditure area, such as assessments, estimating techniques, availability of data, and reliability of estimates.

Tax Policy as a Part of General Government Policy

There has always been heated discussion on whether and to what extent the government can or should use the tax system for policy goals other than raising tax revenue. Many tax scholars hold the view that taxes should primarily be used to raise revenue and should also contribute to equitable distribution of income. In addition to income policy to meet the ability-to-pay principle, no other policy goals—such as the stimulation of employment or economic growth—should be aimed at with the tax system. Financial incentives, if considered desirable, should, in their view, be given through direct expenditures—that is, subsidies.

In contrast, the Dutch government has long taken the view that the instrument of taxation is just one of many policy instruments govern-

ments can use to achieve policy goals. It is assumed that sound criteria would be applied when deciding whether tax expenditures or other policy instruments (for example, subsidies) represent the best option. The three main criteria are efficiency, effectiveness, and equality.

- The *efficiency criterion* implies that a tax expenditure should be more cost-effective than a direct expenditure. For example, if a new organization must be set up to carry out the direct expenditure, it may be more cost-efficient to use a tax expenditure. The revenue service, as an already existing organization, would be able to carry out the tax expenditure with negligible additional administrative cost.
- The *effectiveness criterion* means that there is a good chance that the policy goals will be realized. It usually will not make a significant difference whether a financial incentive is given by means of a direct expenditure or by means of a tax expenditure.
- Finally, the *equality criterion* implies that the choice to reduce the tax burden by means of a tax expenditure, instead of by lowering the tax rates, should be justified. Since tax expenditures are usually targeted at a limited group of taxpayers, there is a need to explain and justify why other groups of taxpayers cannot take advantage of it. Budget Memorandum 2003 introduced specific criteria that would allow policymakers to make a well-grounded decision when introducing new or adjusting existing tax expenditures.

Definition of Tax Expenditure

In its 1987 report, the working group studied several definitions of tax expenditures used in other countries, especially in France, Germany, the United Kingdom, and the United States. From these definitions they isolated the following five distinct elements: reduction of tax revenue, deviation from the benchmark tax structure (basic levy system or normal tax structure), nonfiscal policy goal, convertibility into direct expenditures, and limited group of taxpayers.

In the opinion of the working group, the elements *nonfiscal policy goal*, *convertibility into direct expenditures*, and *limited group of taxpayers* should not be part of the tax expenditure definition. As far as the nonfiscal policy goal is concerned, the working group argued that this element was already incorporated in the definition of the benchmark structure. Hence, if a particular tax provision did not agree with the benchmark structure, it was bound to have a nonfiscal policy goal.

The working group argued that the remaining two elements—*reduction of tax revenue* and *deviation from the benchmark tax structure*—would be

sufficient to characterize a tax provision as a tax expenditure. The element reduction of tax revenue can be seen as a deciding factor in the selection of each of the provisions examined. The inclusion of this element reflects the fact that a tax expenditure is actually a hidden subsidy. The element deviation from the benchmark tax structure is intended to refer in the most neutral way possible to the actual objective of taxation: to finance government expenditures in such a way that the tax burden arising from it is evenly distributed (ability-to-pay principle).

Furthermore, the working group added a *gradation* element in the context of examining wage and income tax systems. Subtle deviations from the basic tax structure—that is, gradations—should be allowed in cases where a provision does not necessarily consider a tax expenditure in its entirety. Some aspects of a provision may conform to the benchmark tax structure, while others may not. The working group argued that without taking into account gradation, almost all tax provisions could be characterized as tax expenditures, resulting in overstating their budgetary significance.

The working group formulated the following definition on the basis of the three core elements: A *tax expenditure* is a government spending in the form of a loss or deferment of tax revenue that is due to a tax provision insofar as that tax provision is not in accordance with the benchmark tax structure of the tax law.

For wage and income taxes, the working group did not agree on all provisions using the above definition. As a compromise, they developed an A-list, which was composed of indisputable tax expenditures (among which were provisions partly characterized as tax expenditures because of the gradation element), and a B-list, which was composed of disputable tax expenditures. Among the latter were the deduction of premiums for pension plans, the exemption of pension rights, and the level of imputed income from owner-occupied housing. The B-list has not been included in the ATER since 1998.

The definition of *tax expenditure* used in the ATERs is basically the same definition drawn up by the working group in its report of 1987. Necessary adjustments of the definition—that is, a benchmark structure change for wage and income tax as a result of the 2001 tax reform or the extension of the definition to indirect taxes in the ATER of Budget Memorandum 2003—are largely in line with the deliberations of the working group. It should be noted that while the element nonfiscal policy goal is not explicitly part of the definition, this element has become increasingly important over the years. It is fair to say that the presence of a distinctive nonfiscal policy goal serves as a guiding principle for the identification of tax expenditures.

Definition of Benchmark Tax Structure

The most important part of the definition of tax expenditures is the deviation from the benchmark tax structure. Thus, it is important to know what the benchmark tax structure looks like.

With regard to the wage and income tax, the following elements are considered part of the benchmark tax structure:

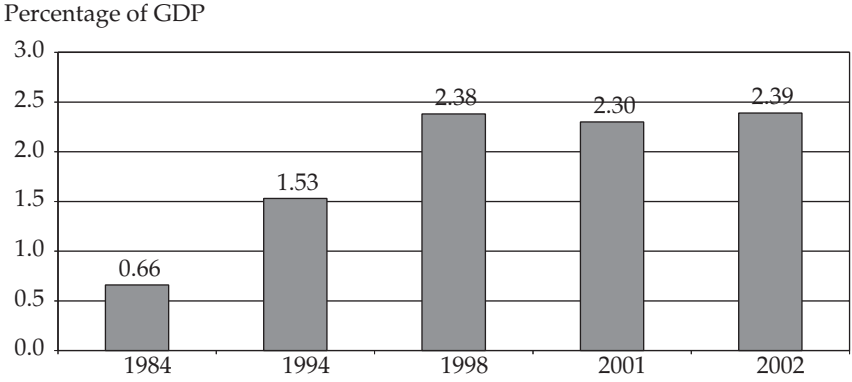
- The general rate structure. As a result of the 2001 tax reform, income is divided into three categories (boxes). As a consequence, parts of the general rate structure include (a) the progressive rate of box 1 (taxable income from work and home ownership), (b) the 25 percent rate of box 2 (taxable income from a substantial interest in a closely held company), and (c) the 30 percent rate of box 3 (taxable income from savings and investments).
- The possibility of offsetting losses.
- The fixed rate of imputed income for owner-occupied housing in box 1 (0.8 percent) and for savings and investments in box 3 (4 percent).
- The general tax credit.
- Exemptions, deductions, and tax credits that adjust taxable income in line with the ability-to-pay principle. In general, those provisions relate to personal circumstances, such as being a single parent, having children, having a disability, or being ill.
- Provisions that enhance the efficiency of taxation, such as the use of fixed amounts to avoid disputes between taxpayers and the revenue service.

The definition of the benchmark tax structure in indirect taxes reflects a somewhat pragmatic approach that was adopted in the first report on indirect tax expenditures in Budget Memorandum 2003. The benchmark tax structure for the indirect taxes was treated just like the benchmark structure for direct taxes. It consists of a description of the taxable element, the rate structure, the basic exemptions, and the provisions related to efficiency of taxation. The guiding principle was adopted that provisions justified primarily on grounds of specific policy goals are considered tax expenditures. With regard to VAT, the reduced rate is treated as part of the benchmark tax structure insofar as it relates to the ability-to-pay principle (primarily a reduced rate for the basic necessities of life).

Use of Tax Expenditures

Figure 6.1 shows the increase in the budgetary significance of undisputed tax expenditures in the wage and income tax (including corporation tax)

Figure 6.1. Tax Expenditure in the Netherlands



between 1984 and 2002. It is noteworthy that tax expenditures in indirect taxes are not included in the data for this period.

The increasing importance of tax expenditures between 1984 and 1994 resulted from the introduction of three major tax expenditures: (a) the investment allowance, which partly replaced a direct expenditure scheme for investment (abolished in 1987); (b) the exemption of savings on specific saving accounts for employees, which was introduced in 1994; and (c) the reduced wage tax for employers for research and development, also introduced in 1994. The further increase between 1994 and 1998 resulted mainly from the introduction of four new provisions for a reduced wage tax for employers in 1996 (applying to low-wage employees, long-term unemployed people, schooling, and childcare).

As shown in figure 6.1, the use of tax expenditures expanded enormously in the 1990s. This increased use was spurred mainly by the economic and budgetary policy of the Kok-I administration (1994–98). The administration comprised a coalition of social democrats, liberals, and conservatives. Tax expenditures expanded for the following reasons:

- First, economic policy was specifically aimed at job creation, mostly by reducing the tax burden for small and medium-size enterprises (SMEs). The government announced a package of tax expenditures amounting to €2,505 million (0.1 percent of GDP) for SMEs.
- Second, the budgetary policy of the Kok-I administration favored tax expenditures over direct expenditures because expenditure ceilings were introduced for direct expenditures. Also, the coalition parties agreed that a fixed percentage of additional tax revenue over and above long-term estimates could be used to reduce the tax burden, for instance,

by introducing new tax expenditures. Because it was also a policy to estimate tax revenues cautiously, substantial unexpected additional tax revenue was raised as a consequence of economic growth, thus providing room for lower tax rates and creating new tax expenditures.
- Third, the belief that tax provisions were more in line with an efficiently functioning market economy than were subsidies contributed to the conversion of direct expenditures into tax expenditures.

However, the current decline in economic growth has had a negative effect on the growth of tax revenues, leaving less room for direct expenditures and tax expenditures. Also, the decline in the use of tax expenditures in the future is the constraining effect of European Union (EU) regulations on national tax legislation. Over the years, EU regulations governing state aid have become more important for tax provisions. Several years ago, the general idea was that only direct expenditure programs had to be approved by the European Commission; however, over the years it became increasingly clear that tax provisions also could constitute forbidden state aid in the context of the EU treaty. Nowadays, it is standard procedure that tax provisions that benefit specific categories of businesses must be approved in advance by the European Commission. Several tax expenditures, which in the past have not been brought under the attention of the European Commission, have already been forbidden.

Annual Tax Expenditure Report of the Budget Memorandum

Since budget year 1999, the ATER has been published as an annex to the Budget Memorandum. The most important part of the report is an overview of budgetary information on tax expenditures that is updated annually. This survey consists of estimates of the budgetary effects of tax expenditures for the year preceding the current budget year, the current budget year, and the coming budget year. Also long-range estimates are produced for the next 4 budget years. In a separate table, a review is provided of proposals in the Budget Memorandum for introducing new tax expenditures or changing and abolishing existing ones.

Quantitative Information on the Budgetary Effects of Tax Expenditures

The tables in the ATER of Budget Memorandum 2003 are reproduced in appendixes A and B. Tables 6.1 and 6.2 present the totals for various categories of tax expenditures. In Budget Memorandum 2003, no long-range estimates were presented for tax expenditures in indirect taxes.

Table 6.1. Estimates of Tax Expenditures in Taxes on Income, Profits, and Property, 2001–07

(budgetary amounts on an accrual basis in € millions)

Category of tax expenditure	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*
Reduced tax burden for companies:							
General	1,646	1,717	1,762	1,804	1,829	1,841	1,869
Investments in general	436	492	303	271	314	339	370
Investments with environmental benefits	315	282	191	184	207	253	255
Reduced tax burden on labor:							
Aimed at employers	2,123	2,309	1,968	1,610	1,367	1,132	1,172
Aimed at employees	925	1053	190	179	174	179	189
Reduced tax burden on income from property	1,626	1,740	1,725	1,764	1,809	1,856	1,907
Other tax expenditures	1,009	1,117	1,080	1,102	1,120	1,134	1,162
Total	8,080	8,710	7,219	6,914	6,820	6,734	6,924

Table 6.2. Estimates of Tax Expenditures in Indirect Taxes, 2001–03

(budgetary amounts on an accrual basis in € millions)

Category of tax expenditure	*2001*	*2002*	*2003*
Regulating energy tax	535	808	331
Value added tax:			
Reduced rate	2,563	2,722	2,858
Exemptions	365	388	407
Special facilities	107	108	113
Excises	453	460	517
Special excise on motor vehicles	65	109	48
Motor vehicle tax	183	232	168
Heavy motor vehicle tax (eurovignet)	1	1	1
Tax on the sale of immovable property	143	120	62
Total	4,415	4,948	4,506

Discussion of Specific Topics

Besides quantitative budgetary information, information of a more qualitative nature is presented in the ATER. Every year a special topic of the ongoing tax expenditure discussion is chosen for further exploration. In the first ATER in Budget Memorandum 1999, much attention was given to the definition of tax expenditure.

The ATER of Budget Memorandum 2000 explored the possibility of budgetary ceilings for tax expenditures. The basic idea behind this discussion was to bring the budgetary treatment of tax expenditures in line with that of direct expenditures. Expenditure ceilings for direct expenditures were introduced in budget year 1994. The conclusion at that time was it would not be necessary to introduce separate ceilings for tax expenditures on the grounds that the decision process for tax expenditures is very much like that for direct expenditures. The question also arose whether it would be technically possible to design adequate ceilings for tax expenditures, as tax expenditures constitute an invisible budgetary loss of tax revenue.

In the ATER of Budget Memorandum 2001, attention was given to the benchmark tax structure of the new Income Tax Act of 2001, which introduced a number of major changes in the wage and income tax. Also, in reply to criticism by Parliament and the Netherlands Court of Audit, a separate paragraph was dedicated to the development of criteria to decide whether tax expenditures or another policy instrument, such as direct expenditures, should be used to achieve specific goals of government policy.

In Budget Memorandum 2002, the ATER was adjusted to the new budget system. This system, effective budget year 2002, emphasizes the connection between the means used to achieve policy goals and the results of the policy instruments selected. As tax expenditures are also policy instruments, tax expenditures were explicitly assigned to the respective departments responsible for policy goals with regard to the respective tax expenditures. For instance, tax expenditures to achieve environmental goals were assigned to the Ministry of Housing, Spatial Planning, and the Environment, and tax expenditures for the business sector were assigned to the Ministry of Economic Affairs. Also, the ATER included a survey of the policy goals to be achieved with the respective tax expenditures and a survey of planned and completed evaluations for tax expenditures. This information has been updated annually from budget year 2002.

An overview of tax expenditures in indirect taxes appeared for the first time in the ATER of Budget Memorandum 2003. As noted, a somewhat pragmatic approach was taken in selecting tax expenditures in indirect

taxes for inclusion in the list. Moreover, attention was given to various aspects of the method used to estimate tax expenditures.

Budgeting the Costs of Tax Expenditures

One of the main criticisms about the use of tax expenditures is that their cost, in most cases, represents an invisible loss of tax revenue to the budget, as it cannot be separately identified by the revenue administration. As mentioned, one of the ideas for tightening the use of tax expenditures was to introduce ceilings like those applied to direct expenditures; however, this approach was not considered viable. The basic issue is how to introduce a budget system for the cost of tax expenditures. In the ATER of Budget Memorandum 2001, four basic systems for budgeting the costs of tax expenditures were identified:

- *System 1*. Accept budget overrun in base year. Tax provisions are then adjusted so that further overruns are avoided in future years.
- *System 2*. Offset a budget overrun in base year intertemporally by reducing the budget in subsequent years.
- *System 3*. Apply the tax provision on a first-come, first-served basis. Applications of taxpayers to qualify for the tax provision must be received and approved by the revenue service on a timely basis. When the budget ceiling is reached, the revenue service will disallow further applications for that budget year. Taxpayers who are too late with their application must reapply the next budget year.
- *System 4*. Set the level of the tax advantage after all applications are received from taxpayers. Thus, all applications will be honored, but at the time the applications are submitted, the amount of the tax advantage will not be known. The greater the number of taxpayers who apply for the provision, the lower the tax advantage will be.

These budget systems are scored in table 6.3 on the basis of four general criteria. The four criteria are

- *Budgetary control*. Budgetary control is optimal when the chances of overspending are minimal.
- *Administrative costs*. Administrative costs are those costs that the revenue service must make to administer the tax expenditure. The lower the administrative costs of a budget system, the higher the score in table 6.3.
- *Compliance costs*. Compliance costs are those costs that taxpayers incur to comply with the conditions of the tax expenditure. The lower the administrative costs of a certain budget system, the higher the score in table 6.3.

Table 6.3. Evaluation of Budget Systems

	Budgetary control	*Administrative costs*	*Compliance costs*	*Legal certainty*
System 1	•	•••	••••	••••
System 2	••	•••	••••	•••
System 3	•••	••	••	••
System 4	••••	•	••	•

Note: • = lowest score; •••• = highest score.

- *Legal certainty*. A budget system scores high on this criterion when taxpayers have certainty beforehand that they qualify for the tax provision and can determine the amount of tax advantage they will receive.

As shown in table 6.3, there is a negative correlation between budgetary control and legal certainty. If budgetary control is high, then legal certainty is low and vice versa. In practice, very few tax expenditures appear in one of these systems. The most commonly used system is system 3, which applies to the accelerated depreciation of environmental or energy-saving investments, the deduction for energy-saving investments, the deduction for environmental investments, the accelerated depreciation of investments in working conditions, and the deduction for investments in films. System 1 applies to the reduced wage tax for research and development. Budget systems 2 and 4 are not currently used.

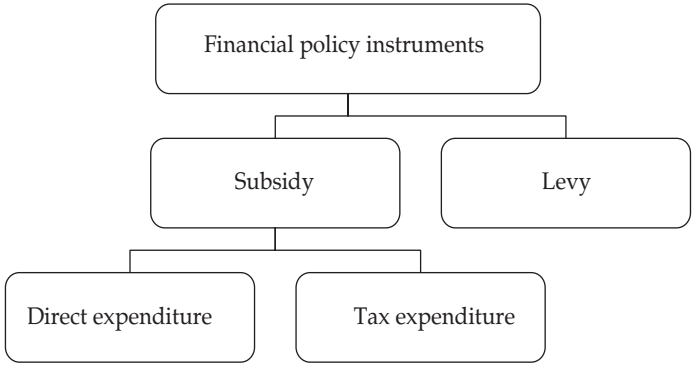
Criteria for Introducing New Tax Expenditures

In general, instruments of government policy can be divided into financial (subsidies and levies), juridical (sanctions), and communications instruments (information). Tax expenditures belong to the financial policy instruments. These instruments are depicted in figure 6.2.

Three questions need to be addressed when considering a tax expenditure: Would a financial policy instrument be more adequate than a juridical or communications instrument in achieving the desired policy goal? Should the desired policy goal be achieved by a subsidy (positive financial stimulus) or by a levy (negative financial stimulus)? If a subsidy seems preferable, should this subsidy be given by means of a direct expenditure or by means of a tax expenditure? The criteria for answering these three questions are discussed in the ATER of Budget Memorandum 2001.

The new budget rules in Budget Memorandum 2003 include six criteria (in the form of questions) that must be satisfied before new tax expenditures can be introduced. Normally, the policy department proposing

Figure 6.2. Financial Policy Instruments



them is responsible for responding to the questions. The criteria questions are

- Has a clear and unambiguous problem been defined?
- Has a clear, unambiguous, and realistic policy goal been formulated?
- Is it possible to demonstrate that a financial intervention is necessary?
- Is it possible to demonstrate that a subsidy is more desirable than a levy?
- Is it possible to demonstrate that a tax expenditure is more desirable than a direct expenditure?
- Is adequate evaluation of the tax expenditure guaranteed?

Experience using these new criteria is still limited; however, it may be clear that spending departments will be forced to thoroughly substantiate any proposal for new tax expenditures.

Calculation of the Budgetary Consequences of Tax Expenditures

Wage and Income Tax

Depending on the timely availability of information, different methods are used to calculate the budgetary significance of provisions in the wage and income tax. Three categories of tax expenditures can be distinguished:

- *Category 1*. Tax expenditures for which full information on actual revenue loss becomes available during the year in which the tax expenditure is actually used

- *Category 2*. Tax expenditures for which full information becomes available with a certain delay, but which can be estimated by means of a microsimulation model
- *Category 3*. Other tax expenditures

In practice, category 1 mainly consists of provisions concerning reduced wage tax for employers. This type of provision for employers represents a subsidy on wage costs in the form of a reduction of the employee wage tax that the employer must pay. Although there are only nine such tax expenditures in 2002 (see appendix A), in budgetary terms, they represent 39 percent of tax expenditures in the wage and income tax (including social security contributions). Reduced wage tax provisions can be estimated easily because the amount of the tax expenditure equals the amount of reduced wage tax, and information is available monthly with minimal delay. Furthermore, certain investment provisions that include an application procedure belong to category 1, though additional assumptions, for instance, about the applicable effective tax rate, must be made to estimate revenue loss arising from these provisions.

Category 2 contains tax expenditures in the wage and income tax that can be estimated by means of a microsimulation model on the basis of tax data from a representative sample of taxpayers (220,000 individuals, of whom 150,000 have income, or 1.5 percent of the taxpaying population). These tax data mainly consist of information from wage and income tax returns and assessments. It normally takes 2 to 3 years for sufficient tax data to become available, for the simulation model to be adjusted, and for reliable up-to-date estimates to be made for current and future years. The data of a certain sample year have to be updated, based on relevant macroeconomic figures, to a more recent year for which microsimulations are to be made. The additional tax revenue raised in a simulation in which a certain tax expenditure is omitted equals the estimated revenue loss as a consequence of that tax expenditure, not taking into account behavioral effects (revenue forgone method).

For tax expenditures in category 3, estimates cannot be based on tax provision–specific information on revenue losses (category 1) or on microsimulation model calculations (category 2). Often separate research of a sample of individual tax files or of nontax information is required to estimate tax expenditures in category 3.

Two examples (accelerated depreciation and passing on a tax claim to future taxpayers) of estimating tax expenditures in the wage and income tax, including corporation tax, are given below.

EXAMPLE 1: BUDGETARY CONSEQUENCES OF TAX EXPENDITURES RELATED TO ACCELERATED DEPRECIATION

Normally companies take a standard write-down on capital equipment investments in linear fashion. An investment with an economic life of 5 years (and zero residual value) is depreciated by 20 percent of the initial purchase price over 5 years in equal portions. On the other hand, investments in environment-friendly capital equipment may be written down more quickly. The entrepreneur may choose to fully depreciate the investment in the year of purchase, thereby reducing his or her taxable income, and thus the amount of tax payable, in the current year. Instead of a depreciation rate of 20 percent, a fiscal depreciation rate of 100 percent of the purchase price is realized (see table 6.4). The tax received by the government is thus lower than the standard situation with linear depreciation.

If the capital investment is already written down 100 percent in the first year of its economic life span, depreciation for the 4 remaining years will be nil. As a consequence, the taxable profit of the company will be higher (in fact, 20 percent of the purchase price) in the 4 subsequent years. The tax administration will receive a higher amount of tax compared with the tax received under the standard linear depreciation. Under both schemes, the individual investment will be written down 100 percent after 5 years; consequently, the effect on tax receipts over the 5-year period is nil. The benefit of this tax expenditure for the company lies in the deferral of the tax payment—that is, an interest-free loan from the government. The budgetary macro effect of the tax expenditure is calculated on the basis of information about the underlying micro investments, as illustrated in table 6.5, which demonstrates the effects of a tax facility for accelerated depreciation that is introduced in the first year.

In table 6.4, the additional depreciation on the macro level in year 1 accounts for 80 percent of the total investments in that year. The introduction of the tax facility has no effect on the depreciation of investments in the years before year 1. Assume that the total amount of investments in year 1 is €100 million; the additional depreciation would

Table 6.4. Effect of Accelerated Depreciation in Different Years for an Investment with an Economic Life Span of 5 Years
(percent)

	Year 1	*Year 2*	*Year 3*	*Year 4*	*Year 5*	*Total*
Accelerated depreciation	100	0	0	0	0	100
Standard linear depreciation	20	20	20	20	20	100
Difference	80	–20	–20	–20	–20	0

Table 6.5. Calculation of the Budgetary Effect of the Introduction of Accelerated Depreciation Based on Underlying Micro Effects

Year	Total amount of investment	Micro effect on depreciation				
		Year 1	*Year 2*	*Year 3*	*Year 4*	*Year 5*
1	100	+80	–20	–20	–20	–20
2	100		+80	–20	–20	–20
3	100			+80	–20	–20
4	100				+80	–20
5	100					+80
Macro effect on depreciation		+80	+60	+40	+20	0
Budgetary effect (corporation tax rate—34.5%)		–28	–21	–14	–7	0

be €80 million. As the total amount of taxable profits will consequently decrease by €80 million, the tax revenue in year 1 will be €28 million lower (with a corporation tax rate of 34.5 percent) compared with the situation without accelerated depreciation.

If the level of total investments remains constant at €100 million, the additional depreciation in year 2 will again be €80 million, but this amount is partly compensated by the reduced depreciation on investments in year 1 (€20 million—compare with table 6.4). The budgetary effect in year 2 will consequently be less negative than in year 1. In year 5 (the presumed economic life span), the budgetary balance will be restored. In that year, tax revenues would be at the same level as without the accelerated depreciation, setting aside any behavioral effects. The additional depreciation on investments in year 5 is completely offset by the reduced depreciation on investments in years 1 to 4.

This simplified example shows how the underlying micro effects determine the budgetary macro effects. In reality, the total amount of investments may, of course, vary from year to year, resulting in more complex outcomes. In general, under accelerated depreciation, changes in investment levels will have a more rapid and direct effect on tax revenues. Under standard depreciation, changes in investment levels are smoothed out in the later years, and the effects on tax revenues are more moderate. As a consequence, if the amount of investment increases, the concurrent effect of decreasing tax revenues caused by higher depreciation will be larger under accelerated depreciation than in the standard situation. Tax revenues will be lower because of the accelerated depreciation scheme. However, if the total amount of investment decreases, the

accelerated depreciation scheme will have a more positive budgetary effect than the standard depreciation.

EXAMPLE 2: BUDGETARY CONSEQUENCES OF TAX EXPENDITURES RELATED TO PASSING ON A TAX CLAIM TO FUTURE TAXPAYERS.
In the Netherlands, a tax facility exists for company takeover purchases. Under certain circumstances, such as the sale of a company by a father to his collaborating son, the tax claim on paper profits realized in the takeover transaction by the seller may be passed on to the buyer. The buyer continues the company at the historical book value. The tax expenditure basically results in the continuation of the interest-free loan (a tax claim on unrealized book profits) from the government. Using this mechanism may lower the transaction price substantially and increase the chance of a successful takeover.

Although it may be obvious that this tax arrangement has budgetary consequences, the amount is not easy to determine. The estimated amount of the budgetary costs is based, out of sheer necessity, on many assumptions. Assumptions are made about the number of takeovers making use of the tax facility and what the average amount of book profits that would otherwise be realized. It is assumed that the amount of book profit increases over time because of inflation and economic growth. These assumptions provide the necessary input for a calculation of the amount of tax not received in the current year because of the tax expenditure. On the other side of the balance sheet, there is an increase in tax revenues in the current year as a consequence of lesser depreciation of takeovers at book value in previous years.

Indirect Taxes

No simulation models or full information on actual revenue loss are available to calculate the budgetary effects of tax expenditures on indirect taxes. The calculations use databases of the tax administration and other sources, such as information from the national accounts. Two examples are given of the way in which tax expenditures in the value added tax are estimated.

EXAMPLE 1: REDUCED VAT RATE
In general, the reduced VAT rate of 6 percent is part of the benchmark tax structure insofar as it takes into account products and services that can be classified as primary needs (such as food and medical assistance). Other products and services (for example, books, public transportation) taxed at the reduced VAT rate instead of the normal rate of 19 percent are classified as tax expenditures.

To calculate the budgetary effects of tax expenditures based on a reduced VAT rate, one needs information about the relevant tax base. The tax base is calculated on data from the national accounts on consumption by private persons, the government, and VAT-exempt sectors such as financial institutions, housing associations, and health care institutions. Intermediate consumption by companies is left out of the tax base because companies receive a full deduction for VAT paid on purchases of intermediary products. Therefore, a lower or higher VAT rate on intermediate consumption does not result in a change of tax revenue.

If information is unavailable in the national accounts, other sources are used, including the VAT administration itself. Because of the VAT deduction mechanism for VAT paid by companies, this approach is not helpful for products purchased or services delivered to companies. The VAT administration is used to determine the relevant tax base for hairdressing, for example. Because hairdressing is mainly a service for private end consumers, the turnover under the reduced rate in the hairdressing sector is a good approximation for the budgetary calculation of the tax expenditure.

EXAMPLE 2: VAT EXEMPTIONS

Other tax expenditures in VAT are exemptions, for example, for sports clubs and postal services.

To calculate the budgetary effects of these facilities, one needs information not only about the amount of tax that would be due if the turnover were taxable at the regular VAT rate but also about the amount of tax that would have been deductible on purchases in that case. The turnover is again derived from national statistics (such as consumption tables in national accounts). The amount of otherwise deductible VAT on purchases is based on estimates of the percentage of turnover used for profits, personnel costs, office rent, and the cost of purchases subject to VAT.

Reference

Grapperhaus, Ferdinand. 1997. *Tax Policy in the Netherlands from 1800 till after 2000*. Deventer: Kluwer.

Appendix A
Estimates of Tax Expenditures: Taxes on Income, Profits, and Property, 2001–07

(*budgetary amounts on an accrual basis in € millions*)

Tax expenditure	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*
Reduced tax burden for companies	2,397	2,491	2,256	2,259	2,350	2,433	2,494
General:							
Self-employed person's deduction	889	946	977	1,008	1,029	1,045	1,060
Additional self-employed person's deduction for new businesses	62	64	66	68	70	71	72
Business-assistance deduction	16	16	17	17	17	18	18
Contributions to the old-age reserve	216	216	221	228	233	236	240
Partial exemption of profits derived from winding up a business	81	69	57	46	35	22	23
Passing on of paper profits on transfer of a business	82	94	96	98	98	97	96
Facility for company transfers in succession duty	19	20	21	22	22	22	23
Passing on of profits at a merger of a closely held company	34	34	35	36	37	37	38
Exemption for profits from appreciation of farmland	247	258	272	281	288	293	299

(*Appendix continues on the following page.*)

Appendix A (*continued*)

Tax expenditure	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*
Investments in general:							
Deduction for investments by small companies	291	301	309	325	341	358	377
Accelerated depreciation of goodwill	1	1	0	0	0	0	0
Accelerated depreciation of investments on the continental shelf	64	43	–60	–60	–59	–55	–47
Accelerated depreciation of buildings in designated areas	55	73	–11	–11	–11	–11	–11
Accelerated depreciation for starting self-employed companies	21	21	21	22	23	24	26
Accelerated depreciation of investments in working conditions (safety at work)	20	11	5	2	3	4	5
Accelerated depreciation of investments in motion pictures	–27	16	—	–24	0	0	0
Accelerated depreciation of ships in ocean shipping	0	0	—	—	—	—	—
Special regime for profits from ocean shipping	11	11	12	13	13	14	15
Deduction for investments in research and development	0	4	4	4	4	5	5
Deduction for investments in motion pictures	—	11	23	—	—	—	—
Investments with environmental benefits:							
Accelerated depreciation of environmental or energy-saving investments	106	62	–7	–34	–29	11	12
Deduction for energy-saving investments	160	167	144	161	177	179	179
Deduction for environmental investments	39	41	42	44	46	49	50
Exemption of profits from forestry	2	2	2	2	2	2	2
Exemption of government allowances for forestry and nature conservation	8	10	10	11	11	12	12

Reduced tax burden on labor	3,048	3,362	2,158	1,789	1,541	1,311	1,361
Aimed at employers:							
Reduced wage tax for low-wage employees	890	914	677	454	224	—	—
Reduced wage tax for long-term unemployed people	207	210	158	107	53	—	—
Reduced wage tax for schooling	179	231	258	313	331	349	367
Reduced wage tax for childcare	92	103	140	—	—	—	—
Reduced wage tax with respect to seafaring	81	86	91	96	102	108	113
Reduced wage tax for research and development	324	363	367	347	347	347	347
Reduced wage tax for paid parental leave	18	21	—	—	—	—	—
Reduced wage tax for investments in working conditions (nonprofit)	2	3	4	4	4	5	5
Reduced wage tax for schooling (nonprofit)	59	98	73	77	82	86	91
Deduction for schooling	271	280	200	212	224	237	249
Aimed at employees:							
Exemption of income from certain company saving schemes	705	733	—	—	—	—	—
Carpool arrangements	15	17	17	18	19	20	21
Exemptions for Christmas bonuses and so on	125	130	—	—	—	—	—
Deduction for seafaring	3	3	3	3	3	4	4
Assessment of holiday vouchers at reduced value	59	52	45	40	34	36	38
Exemption for certain sign-on premiums	18	—	—	—	—	—	—
Deduction for entering labor force	—	45	24	11	5	0	0
Tax credit for working elderly	—	73	101	107	113	119	126
Reduced tax burden on income from property:	1,626	1,740	1,725	1,764	1,809	1,856	1,907
General allowance	768	810	834	855	876	899	921
Additional allowance for children	16	17	18	18	19	19	20
Additional allowance for elderly	86	90	93	95	98	100	103

(*Appendix continues on the following page.*)

Appendix A (*continued*)

Tax expenditure	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*
Exemption for ownership of forest and nature	2	2	2	2	2	2	2
Exemption for ownership of artwork and science	5	5	5	5	5	5	6
Exemption for environmental investments	19	25	27	28	28	29	30
Exemption for socioethical investments	0	0	1	1	1	1	1
Exemption for cultural investments	—	0	1	1	1	1	1
Exemption for venture capital	37	43	45	46	47	48	50
Exemption for savings in company savings schemes	18	19	5	—	—	—	—
Exemption for rights from funeral insurance	6	7	7	7	7	8	8
Exemption for certain rights to capital payments	556	593	634	650	666	683	700
Partial exemption of income derived from letting rooms	16	16	17	18	19	20	21
Deduction for preservation of historic buildings	24	28	30	32	34	35	37
Tax credit for environmental investments	23	27	—	—	—	—	—
Tax credit for socioethical investments	0	1	—	—	—	—	—
Tax credit for cultural investments	—	0	—	—	—	—	—
Tax credit for venture capital	45	52	—	—	—	—	—
Deduction of losses in venture capital investments	5	5	6	6	6	6	7
Other tax expenditures	1,009	1,117	1,080	1,102	1,120	1,134	1,162
Exemption of specific welfare benefits, house rent subsidies, and student grants	540	639	589	600	608	613	617
Deduction of lump-sum maintenance settlements	3	3	3	3	3	3	4
Deduction of study expenses	83	87	90	94	97	100	104
Deduction of charitable and other donations	214	223	235	247	259	271	283
Reduction of succession duty for donations to institutions with a public interest	117	120	124	131	139	147	154
Temporary additional tax credit for home help	52	45	39	27	14	—	—
Total	8,080	8,710	7,219	6,914	6,820	6,734	6,924

Appendix B
Estimates of Tax Expenditures: Indirect Taxes, 2001–03

(*budgetary amounts on an accrual basis in € millions*)

Tax expenditure	*2001*	*2002*	*2003*
Regulating energy tax			
Reduced rate for cultivation under glass	65	113	113
Zero-rate for environment-friendly energy	22	190	195
Reduced rate for environment-friendly energy	182	220	
Reduced rate for energy produced from incineration of disposal	17	22	—
Reduced rate for total energy plants	118	118	—
Tax premiums for environment-friendly products	108	122	—
Payback for church buildings	4	4	4
Payback for nonprofit buildings	19	19	19
Value added tax—reduced rate			
Books, magazines, and newspapers	493	527	553
Libraries, museums, and so forth	44	47	49
Carnivals, amusement parks, and sporting events	55	59	62
Circus, cinemas, theaters, and concerts	25	25	26
Flowers and plants	150	161	169
Labor-intensive services (for example, hairdressing)	178	192	202
Transportation of people (for example, public transportation)	459	492	517
Provision of accommodation (including camping)	167	175	184
Food supply in the catering industry	992	1,044	1,096
Value added tax—exemptions			
Sporting clubs	107	114	120
Postal services	43	46	48
Labor unions, employers' organizations, political parties, and churches	129	137	144
Fundraising	86	91	96
Value added tax—special facilities			
Reduced rate for small companies	77	78	82
Special treatment for farmers	30	30	32

(*Appendix continues on the following page.*)

Appendix B (*continued*)

Tax expenditure	*2001*	*2002*	*2003*
Excises			
Reduced rate for small breweries	1	1	1
Refinery exemption	12	12	12
Exemption for communal waters	58	60	62
Exemption for aircraft	155	155	155
Rate differentiation for motor spirits according to sulfur content	100	105	160
Rate differentiation for tractors and certain other vehicles	127	127	127
Reduced rate for buses in public transportation and garbage trucks	0	0	0
Special excise on motor vehicles			
Exemption for motor vehicles running on electricity and hybrid vehicles	1	2	4
Payback for police cars, fire engines, and ambulances	8	8	8
Payback for taxis	16	17	18
Exemption for certain accessories	40	18	18
Tax premiums for energy-saving cars	—	64	—
Motor vehicle tax			
Reduced rate (half)	17	18	19
Double-reduced rate (quarter)	34	34	34
Zero-rate for buses in public transportation on liquid petroleum gas	0	0	0
Exemption for motor vehicles older than 25 years	68	68	68
Exemptions for taxis	14	14	14
Exemption for police cars and fire engines	7	7	7
Exemption for garbage trucks	3	3	3
Exemption for road construction vehicles	2	2	2
Other exemptions	1	1	1
Tax premiums for environment-friendly cars	17	65	—
Reduced tax base for hybrid cars and delivery vans	20	20	20
Heavy motor vehicle tax (eurovignet)			
Payback for international combined transport	1	1	1
Tax on the sale of immovable property			
Exemption for a company transfer to the next generation	33	26	23
Exemption for land development	4	2	2
Exemption for government organization for farmland cultivation	14	7	5
Exemption for housing corporations	47	50	—
Exemption for historic buildings	10	10	10
Exemption for a purchase of neighboring farmland	36	26	22
Total	4,415	4,948	4,506

7
Tax Expenditures in the United States: Experience and Practice

Emil Sunley
International Monetary Fund

The concept of a tax expenditure budget was first outlined by Stanley S. Surrey, assistant secretary of the U.S. Treasury for tax policy, in a speech given November 15, 1967. Surrey stated that "through deliberate departures from accepted concepts of net income and through various special exemptions, deductions, and credits, our tax system does operate to affect the private economy in ways that are usually accomplished by expenditures—in effect to produce an expenditure system described in tax language" (Surrey 1967). He suggested that there should be a full accounting of tax expenditures. The first such tax expenditure budget was published in the *Annual Report of the Secretary of the Treasury on the State of the Finances for Fiscal Year 1968* (U.S. Treasury Department 1969).

Since 1969, tax expenditure budgeting has spread to a significant number of Organisation for Economic Co-operation and Development (OECD) countries (Craig and Allan 2001; OECD 1996) and to a few developing or transition countries (such as Brazil, Latvia, and Pakistan).[1] Yet in the United States, it remains controversial. For example, in the most recent federal budget, the administration questioned whether tax expenditure estimates are meaningful: "Because of the breadth of this arbitrary tax base, the Administration believes that the concept of 'tax expenditure' is of questionable analytic value" (OMB 2002).

This chapter describes current U.S. practice, examines the concept or definition of tax expenditures and their measurement in the U.S. context, and concludes with some observations on the usefulness of tax expenditure budgeting.[2] Box 7.1 provides a brief history of tax expenditure budgeting in the United States.

The author wishes to thank Bruce Davie, Michael Keen, Victoria Perry, and Randall Weiss for comments on a draft of this paper.

Box 7.1. Brief History of U.S. Tax Expenditure Budgeting

November 15, 1967: Stanley S. Surrey, assistant secretary of the U.S. Treasury for Tax Policy, outlines the concept of tax expenditures in a speech before the Money Marketers, a New York financial group (Surrey 1967).

1969: First tax expenditure budget published in the *Annual Report of the Secretary of the Treasury on the State of the Finances for Fiscal Year 1968*. The baseline for determining whether a tax provision was a tax expenditure was a practical variant of a comprehensive income tax. The cost of each tax expenditure was measured in terms of the amount of revenue lost or forgone.

1974: The Congressional Budget Act of 1974 requires the administration and Congress to prepare an annual list of tax expenditures. The act suggests that tax expenditures are exceptions to some normal tax that is not specified in the law.

1982: In the Budget for Fiscal Year 1983, the administration narrowed the baseline for defining tax expenditures by introducing the reference law baseline. The 1983 budget also introduced the concept of outlay equivalent for tax expenditures.

1988: In the Budget for Fiscal Year 1989, the administration first presented tax expenditure estimates under the unified transfer (estate and gift) tax. These estimates were eliminated from the Budget for Fiscal Year 2003.

1995: In the Budget for Fiscal Year 1996, the administration first provided present-value estimates for tax expenditures that involve tax deferrals.

U.S. Practice

The speech given by Surrey in 1967 can be considered as the starting point on the debate about tax expenditures in the United States. The first report on tax expenditures was published in 1969; thereafter, publication became regular, eventually becoming compulsory by the Congressional Budget Act of 1974.

Under the requirements of the Congressional Budget Act of 1974, the staffs of the U.S. Treasury Department (part of the administration or executive branch) and the U.S. Congress Joint Committee on Taxation prepare annual reports on tax expenditures.[3]

The Congressional Budget Act of 1974 defines tax expenditures as "revenue losses attributable to provisions of the Federal tax laws which allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of liability." This definition suggests that tax expenditures are exceptions to

some normal income tax. However, the normal tax is not specified in the Congressional Budget Act. The act only requires that the annual reports cover tax expenditures under the income tax, but the reports could cover other taxes.[4]

The Treasury tax expenditure estimates cover a 7-year period—the last fiscal year, the current fiscal year, and the next 5 fiscal years (see table 7.1). The various tax expenditures are classified by budget function, and estimates are given separately for personal income tax and corporate income tax. The Treasury provides estimates for two baselines—the normal baseline, which is patterned on a comprehensive income tax, and the reference baseline, which is patterned on the general provisions of existing law. Estimates are given both in terms of revenue forgone and outlay equivalent. Present-value estimates are prepared for provisions that lead to tax deferrals. Provisions that result in a revenue loss of less than US$5 million in each of the years are excluded. The Treasury report includes a brief description of each tax expenditure.

Table 7.1. Comparison of Tax Expenditure Budgets Prepared by the U.S. Treasury and the U.S. Congress Joint Committee on Taxation, 2002

Report item	*Treasury*	*Joint Committee*
Taxes covered	Income tax only	Income tax only
Years covered	7 years (fiscal years 2001–2007)	5 years (fiscal years 2002–2006)
Classification of tax expenditures	By budget function and separately for personal and corporate income taxes	By budget function and separately for personal and corporate income taxes
Baseline	Normal and reference law baselines	Normal baseline only
Measurement of tax expenditures	Revenue forgone, outlay equivalent, and present value (for deferral preferences)	Revenue forgone only
De minimis rule	Excludes provisions with estimates of less than US$5 million in each of the 7 years	Excludes provisions with estimates of less than US$50 million over the 5 years
Distributional analysis	No	Yes for 9 tax expenditures

Sources: U.S. Congress Joint Committee on Taxation 2002, OMB 2002.

The Joint Committee estimates cover a 5-year period—the current fiscal year and the next 4 years. Under the Treasury approach, the various tax expenditures are classified by budget function, and estimates are given separately for personal and corporate income taxes. The Joint Committee differs in using only the normal baseline, with a few differences from the Treasury's normal baseline. Estimates are given only in terms of revenue forgone. Provisions that result in an estimate of less than US$50 million over the 5 years are excluded. Although the Joint Committee report does not include a description of each tax expenditure, the U.S. Senate Committee on the Budget every 2 years provides a description and background material on each provision.

Unlike the Treasury, the Joint Committee provides a distribution analysis (revenue forgone by income class) for nine tax expenditures for which data are readily available from a sample of tax returns. Since this is a static distribution analysis and not an incidence analysis of these tax expenditures, the economic benefit may be shifted.[5] However, the static analysis may provide a guide as to whose taxes would increase.

Definition of Tax Expenditures

Much of the controversy in the United States regarding tax expenditure budgeting relates to the choice of an appropriate baseline for determining whether a particular provision in the tax law is a tax expenditure (see, for example, Bartlett 2001; Bittker 1969; OMB 2002; and Thuronyi 1988). In response to this controversy, the Treasury now uses both the normal and reference baselines. Under both baselines, the basic definitional question is, which income tax rules are special provisions representing government expenditures made through the income tax system, and which constitute the basic structural framework of the tax?

Normal Baseline

The initial tax expenditure budget, prepared under the direction of Surrey, used a normal baseline that was patterned after a practical variant of a comprehensive income tax. The baseline could have been defined along the lines of the Haig–Simons definition of economic income (consumption plus changes in net worth).[6] This, however, is not a practical definition for a comprehensive income tax. For example, under the Haig–Simons definition of income, capital gains would be taxed as they accrue and not when they are realized.[7] Surrey and the Treasury staff realized that the theoretical ideal needed to be tempered by using a baseline that is based on widely accepted definitions of income, the standards

of business accounting, and the generally accepted structure of the income tax (Surrey and Hellmuth 1969).[8]

Also, some items were excluded because there was no available indication of the precise magnitude of the tax subsidy, and others were excluded because their inclusion would rest on theoretical or technical tax arguments. For example, homeowners could be considered as being in the business of owning their homes and renting to themselves. The imputed rental income would be considered as part of their net income. Although it may be practical to tax imputed rental income—some European countries have tried to—Surrey believed that inclusion of imputed rental income rests on theoretical or technical tax arguments, and, therefore, such imputed income should be excluded from the tax expenditure list.[9] Finally, some items were excluded because of their relatively small quantitative importance.

The normal baseline allows personal exemptions, the standard deduction, and deductions for the expenses of earning income. Capital gains are included as ordinary income when they are realized. Individuals and corporations are treated as separate taxpayers.[10] The normal baseline allows separate progressive rate schedules for single individuals and for married couples. Corporate income tax rates below the maximum corporate rate are not part of the normal baseline. Forms of business organization that allow avoidance of the corporate-level tax (such as, partnerships) have never been treated as tax expenditures. Initially, tax accounting rules, including the cash method of accounting, were considered to be part of the normal baseline. Tax accounting rules relating to corporate reorganizations have never been considered tax expenditures.

As indicated above, both the Treasury and the Joint Committee use a normal baseline, and the two tax expenditure lists were almost identical until 1982. The Treasury's normal baseline today is somewhat broader than the Joint Committee's because the Joint Committee list includes 22 tax expenditures that are not included in the Treasury list. Most of these additional tax expenditures are fairly narrow accounting provisions relating to such things as the treatment of life insurance reserves, the special rules for mining reclamation and nuclear decommissioning reserves, and the expensing of magazine circulation costs. Some of the more important items included on the Joint Committee list but not the Treasury list are

- *Cash accounting*. The Treasury considers both cash and accrual accounting as part of the normal tax structure, whereas the Joint Committee considers only accrual accounting as part of the structure.
- *Completed-contract accounting*. As generally accepted accounting principles, including International Accounting Standard 11, require a

percentage of completion accounting for contracts, the Joint Committee considers completed-contract accounting to be a tax preference.

- *Exclusion of employee awards*. As the Joint Committee considers any payment from an employer to an employee to be remuneration for work, the exclusion of employee awards is, therefore, considered a tax expenditure.
- *Deferral of gain on like-kind exchanges*.[11] Under the normal tax rules, capital gains are taxed when realized. The Joint Committee therefore considers the deferral of tax on like-kind exchanges to be a tax preference. The Treasury may argue that, even though a realization event has occurred, it is not practical to tax like-kind exchanges because of the need to value the properties involved. In addition, this provision could not be reasonably replaced by a direct spending program.
- *Exclusion of untaxed Medicare benefits for hospital insurance*. As this government program is a tax-transfer program—a payroll tax funds the program, and the expected (and actual) benefits are unrelated to earnings—the Joint Committee includes the exclusion of benefits as a tax expenditure. The Treasury views the exclusion of government benefits received in kind (such as Medicare benefits) as part of the normal baseline.

The application of these various criteria for determining which provisions are tax expenditures necessarily presents some definitional problems. Some may view the concept of a normal tax as arbitrary and subjective. However, my experience at the Treasury was that staff members were able to reach almost complete agreement as to which provisions should be considered tax expenditures. In general, if there was a reasonable basis for including a provision as a tax expenditure, it was listed in the tax expenditure budget.

Reference Baseline

The reference baseline, used by the Treasury since 1983, is closer to existing law. Under this baseline, tax expenditures are limited to special exceptions that serve programmatic functions, such as national defense, income security, and education. Two criteria are used to identify tax expenditures. First, the provision must be special, in that it applies to a narrow class of transactions or taxpayers.[12] Second, there must be a general provision to which the special provision is a clear exception. If these two conditions are satisfied, the special tax provision clearly is characteristic of a direct spending program.

The reference and normal baselines are generally similar, but there are some significant differences (OMB 2002), as listed below. Table 7.2 summarizes these differences.

Table 7.2. Comparison of the Normal and Reference Baselines

Item	*Normal baseline*	*Reference baseline*
Separate tax rates schedules for various tax units	Included in the benchmark	Included in the benchmark
Corporate income tax rates below maximum statutory tax rates	Tax expenditure	Included in the benchmark
Preferential rates for capital gains	Tax expenditure	Included in the benchmark
Exemption of transfer payments from the government	Tax expenditure	Included in the benchmark
Exemption of transfer payments from individuals	Included in the benchmark	Included in the benchmark
Depreciation	Any depreciation in excess of straight-line depreciation equals a tax expenditure	Accelerated depreciation included in the benchmark
Deferral of tax on income received by controlled foreign corporations	Tax expenditure	Included in the benchmark
Expensing of research and development expenditures	Tax expenditure	Included in the benchmark

Source: Based on OMB 2002.

- *Rate schedules*. The separate tax rate schedules applying to various taxpaying units are included in the reference baseline because of their general applicability. Thus, under the reference baseline, the corporate income tax rates below the maximum statutory rate do not give rise to a tax expenditure. Under the normal baseline, the reduced corporate income tax rates are considered a tax expenditure—a subsidy for small business.
- *Capital gains*. Similarly, the preferential rates for capital gains are generally not considered a tax expenditure under the reference baseline. Only the capital gains treatment of otherwise ordinary income, such as that from coal and iron ore royalties and the sale of timber and certain

agricultural products, is considered a tax expenditure. Under the normal baseline, preferential rates for capital gains are considered a tax expenditure, because under a comprehensive income tax there would be no distinction between ordinary income and capital gains. Taxing capital gains when they are realized and not as they accrue is part of both the normal and reference baselines.

- *Transfer payments*. Under the reference tax rules, gross income does not include gifts, which are defined as receipts of money or property without compensation. Thus, under the reference baseline, most government transfer payments, which can be viewed as gifts from the government, are not considered tax expenditures. However, the reference baseline would consider the exemption of social security benefits a tax expenditure as this transfer payment is associated with past employment. The normal baseline would treat the exemption of all transfer payments from the government to private individuals as a tax expenditure, in part because these "gifts" are mandated, open-ended government spending programs and not voluntary transfers from the government to individuals. Neither the reference baseline nor the normal baseline would consider the exclusion of gifts between individuals to be a tax expenditure.
- *Depreciation*. Under the reference baseline, no tax expenditure arises from accelerated depreciation because of its general applicability, although one could argue that the depreciation method used for computing earning and profits is the general rule.[13] Under the normal baseline, depreciation in excess of straight-line depreciation over the useful life of the property is considered a tax expenditure. Similarly, expensing of certain small investments and amortization of start-up costs are considered tax expenditures only under the normal baseline.
- *Foreign income*. Under the reference baseline, controlled foreign corporations (CFCs) are regarded as separate entities whose income is not subject to U.S. tax until it is distributed to U.S. taxpayers. Thus, deferral of tax on income received by CFCs, except for tax-haven income, does not give rise to a tax expenditure. Under the normal baseline, deferral of tax on income received by CFCs is regarded as a tax expenditure.
- *Research and development expenditures*. Expensing of research and development (R&D) expenditures is considered a tax expenditure under the normal baseline because under a comprehensive income tax these expenditures would be capitalized and amortized. The reference baseline does not consider the expensing of R&D a tax expenditure, in part because the appropriate amortization period is unclear and R&D is expensed under general accounting principles.

Although there are significant differences between the normal and reference baselines described above, there is a surprising overlap. Of the 150 tax expenditures enumerated in the most recent Treasury report, 139 of them are included under both the normal and reference baselines.[14]

Measurement of Tax Expenditures

Tax expenditures may be measured by the amount of revenue forgone, by the amount of the revenue gain when repealed, or by the outlay equivalent. When a tax expenditure consists of a deferral of tax payments (for example, accelerated depreciation or pension contributions), the amount of revenue forgone may be measured by the present value of the savings associated with deferral preferences.

These methods are described in chapter 1. Each measurement has its advantages. However, in the United States and many other OECD countries, for many years tax expenditure estimates were measured only by the amount of tax revenue forgone, which may be the most useful measure.

Measurement on Revenue Forgone: Experience from the United States

A revenue forgone estimate measures how much higher tax liabilities would be if the tax expenditure did not exist and taxpayers made no change in behavior. Each tax expenditure is estimated separately, under the assumption that all other tax expenditures remain in the law. Year-to-year differences in the estimates for each tax expenditure reflect changes in the tax law, including phase-outs of tax expenditure provisions and changes that alter the definition of the baseline. Because interactions are not taken into account, the estimates for tax expenditures should not be summed. Currently, neither the Treasury nor the Joint Committee provides totals, although various commentators wrongly continue to sum the various estimates to get a grand total.

Unlike revenue estimates for proposed changes in the law, tax expenditure estimates are based on change in tax liability and not on change in receipts. Also, tax expenditure estimates assume that taxpayer behavior is unaffected by the elimination of the tax expenditure provisions, even though their elimination would presumably change taxpayer behavior.[15] In contrast, revenue estimates for proposed changes in the tax law prepared by both the Treasury and the Joint Committee incorporate behavioral changes that are anticipated to occur in response to the repeal of a tax provision. There is another important reason that a revenue forgone estimate of tax expenditures should not be equated to the potential increase

in revenue if the tax expenditure were repealed: Repeal of a tax expenditure may be prospective only. For example, if the mortgage interest deduction on owner-occupied homes were repealed, the repeal would likely apply only to mortgages acquired after the effective date of the repeal.

Despite the various limitations of estimates of revenue forgone, they are a useful gauge of the relative importance of various tax expenditures. For example, the largest tax expenditures in terms of revenue forgone are the exclusion of employer contributions for medical insurance, the deductibility of mortgage interest on owner-occupied homes, and the preferential rates on capital gains.

The Application of the Outlay Equivalent Method in the United States

The Treasury introduced outlay equivalent estimates in 1983. The Joint Committee has never adopted this methodological refinement. My own experience is that these competing estimates have added to the general confusion. Except for some specialized economists, most observers have trouble understanding the counterfactuals assumed for each direct spending program and why for certain tax expenditures the outlay equivalent and revenue forgone estimates are the same and for others they are not.

Present-Value Estimates

An alternative method of measuring tax expenditures that involves deferral would be to compute for each year the present value of the tax savings associated with the tax expenditure. This method measures the revenue loss associated with the present year's activity related to the tax expenditure. For example, a pension contribution in 2002 would cause a deferral of tax payments on wages in 2002 and on earnings on this contribution in later years. In some future year, the 2002 pension contribution and the accrued earnings would be paid out and taxes would be due. These tax receipts are included in the present-value estimate of the tax expenditure, which is equal to the initial loss in revenue plus the present value of the taxes forgone as the earnings accrue, less the present value of the taxes paid when the contribution and earnings are taxed. In preparing present-value estimates, the Treasury uses the government borrowing rate as the discount rate.

The present-value conceptual approach for measuring the cost of tax expenditures involving tax deferrals is similar to the one used for reporting the budgetary effect of credit programs, where direct loans and guarantees in a given year affect future cash flows.

On the 150 tax expenditures in the most recent U.S. budget, the Treasury prepared present-value estimates for 25 items that involve tax deferral. The exclusion of pension contributions on employer plans is the largest deferral preference. The present value of the revenue loss for 2001 was US$97.3 billion. In contrast the revenue forgone estimate was US$42.1 billion, and the outlay equivalent estimate was US$52.6 billion. The revenue forgone estimate for 2001 is lower than the present-value estimate because, in the former case, the revenue loss from deducting pension contributions in the present year is partly offset by the revenue gain from taxing pension income that was deferred in earlier years.

Just as a grant and a loan are not the same thing and are treated differently in the budget, a tax expenditure that involves a permanent reduction in tax is not the same as a tax expenditure that defers tax to a future period. Present-value estimates are, in my view, a useful way to take into account the differences between these two types of tax expenditures. A table of present-value estimates for selective tax expenditures would provide useful supplementary information to the basic tax expenditure tables, which should be prepared on the basis of revenue forgone.

Usefulness of Tax Expenditure Budgeting

The United States now has almost 35 years of experience with tax expenditure budgeting. However, the full potential of this analytic tool has not been achieved (Ladd 1994). An evaluation of tax expenditure budgeting should include: (a) its role in improving transparency, (b) its facilitation of trade-offs between tax expenditures and direct spending programs, and (c) its role as an engine for tax reform.

Transparency

Governments can define tax expenditures relative to a baseline and make reasonable estimates of the amount of revenue forgone or even the outlay equivalent. The government's tax expenditure report, like the reports prepared by the Treasury and the Joint Committee, can discuss in some detail the specification of the baseline and outline the rules or conventions relating to the measurement of tax expenditures. The report can discuss the various limitations of the tax expenditure budget.

The U.S. tax expenditure budgets have improved fiscal transparency. These budgets are consistent with the International Monetary Fund's *Code of Good Practices on Fiscal Transparency*, which emphasizes not only the need to present a government budget in a timely, reliable, and analytically meaningful way, but also stresses extending the coverage of information and data to all fiscal activity (IMF 2001). Specifically, it refers to the

use of tax concessions as an alternative to spending programs. The code advocates that statements describing the nature and fiscal significance of central government contingent liabilities and tax expenditures—and of quasi-fiscal activities—should be part of the budget documentation to enhance fiscal transparency.

Trade-offs with Direct Spending Programs

Surrey's insight was that tax expenditures are like direct spending and, therefore, should receive the same scrutiny. He believed that if they received the same scrutiny, many tax expenditures would be repealed or replaced with direct spending programs. Tax expenditure budgets would provide a pathway to tax reform (Surrey 1973).

In practice, however, it has not been feasible for countries to trade off tax expenditures and direct spending programs (Craig and Allan 2001). Within the U.S. government, tax policy is under the Treasury, while direct spending programs are administered by other cabinet-level departments. Although the cost of the tax expenditure programs for housing far exceed the government's direct spending programs administered by the U.S. Department of Housing and Urban Development (HUD), HUD does not trade off the tax subsidies and the direct spending when the administration's budget is formulated.

A similar problem occurs in the legislative branch. Congress is organized by committees, and the committees with jurisdiction over most spending programs do not have jurisdiction over taxation. I can recall only one time when Congress traded off a tax expenditure for a direct spending program, and that trade-off was possible only because the tax-writing committees also have jurisdiction over welfare and income support. During the consideration of the Tax Reform Act of 1986, the U.S. House Ways and Means Committee eliminated the tax deduction for adoption expenses in exchange for a direct spending program to be administered by the U.S. Department of Health and Human Services. This measure was enacted into law. However, in 1997, a new tax expenditure for adoption expenses (a tax credit this time) was added to the income tax law. The direct spending program was not repealed.

For the United States, there is only one recent study that compares a tax subsidy with a direct spending program (Holtzblatt 2000). Under U.S. law, low-income workers are able to claim the earned income tax credit. If the credit exceeds the tax liability before credit, the government makes a direct payment to the worker. The United States also has a means-test program that provides food stamps (direct subsidies) to low-income families. The error rate (fraudulent claims) is higher for the earned income tax credit than for the food stamp program. However, the administrative

costs are lower for the earned income credit, and its participation rates are higher.

Tax Expenditures and Tax Reform

The most significant tax reform in the past 35 years in the United States was the Tax Reform Act of 1986, which broadened the tax base and lowered tax rates. This tax reform was driven by the need for a revenue neutral bill—any revenues from base broadening could be used for rate reduction. Moreover, the rate reductions lowered the value of many tax expenditures that are special deductions, such as the itemized deductions allowed to individuals (the deduction for charitable giving, homeowner deductions for mortgage interest and property taxes, and deduction for state and local taxes), and little concern seemed to have been given to the effect of rate reductions on the value of those tax expenditures that survived the 1986 act. Some of the base broadening came from tightening the income tax rules that would be considered part of the normal or reference baselines (for example, tightening tax accounting rules, such as eliminating the use of installment sales reporting).

In contrast, the Tax Reform Act of 1997 did not involve rate cuts but instead involved new or expanded tax expenditures (such as a reduction in the rates on capital gains, a new child tax credit, and new tax credits for education expenses) financed primarily by increasing the tobacco excise rates.

Any comparison of recent tax expenditure budgets with the 1969 Treasury report would confirm that tax expenditures have proliferated in the United States over the last 35 years. Although some tax expenditures have been repealed or modified, many new ones have been added to the income tax.

Tax expenditures do get some scrutiny by Congress in most years as part of the budget cycle, because the tax-writing committees may have to meet revenue targets. The trade-offs, however, are between reducing tax expenditures and raising tax rates, and not between using tax expenditures and direct spending programs for the same purpose. In making these trade-offs, therefore, revenue forgone estimates of tax expenditures are probably more useful than outlay equivalent estimates.

Criticism of Tax Expenditure Budgeting

As indicated at the outset, tax expenditure budgeting remains controversial. Some of the criticism is based on the idea that the normal or reference baselines are just too vague for the concept of tax expenditures to be useful. However, because nothing in federal budget procedures is

automatically affected by the list of items or the estimates, the vagueness of the term *special* in the definition of tax expenditures has never had a significant practical effect (Davie 1998). Other critics believe that the norm should be consumed income or consumption (OMB 2002). If consumption were the benchmark, then special deductions for savings, the exemption of investment income, and the expensing of capital assets would not be considered tax expenditures. Still others do not accept the proposition that tax expenditures are equivalent to direct spending programs; they would prefer to view tax expenditures as equivalent to a low tax rate (Thuronyi 1988). Although it is possible to design a direct spending program that is equivalent to a tax expenditure, in practice tax expenditures are for the most part permanent features of the tax law and are subject to less bureaucratic control than direct spending programs that may require an annual appropriation.[16]

Finally, some critics of the tax expenditure concept believe that direct spending programs are inherently less efficient (involving more government bureaucracy) than tax expenditures. For these critics, transparency may not be a virtue if it undermines certain tax subsidies.

Conclusions

Tax expenditure budgets can make an important contribution to transparency and convey important information about the government's fiscal activity. The tax expenditure budget should be included as part of the annual budget documents, with the various tax expenditures classified by budget function. In the text of the report, each tax expenditure should be briefly described. In developing a tax expenditure budget, the baseline and the methodology for measuring tax expenditures should be explicitly stated. Of the various measures for the cost of tax expenditures, the amount of revenue forgone is probably the most useful and the most easily understood by potential users of the tax expenditure budget.

Notes

1. The German government published its first report on direct subsidies and tax concessions in 1967 (OECD 1996). The reports are published every 2 years.

2. Although tax expenditure budgeting has spread to many states, this paper addresses only the U.S. experience at the federal level.

3. The administration and Congress each prepare a tax expenditure budget in part because the executive and legislative branches of government are separate under the U.S. Constitution. The administration relies on the Treasury for estimates of budget receipts and estimates of the revenue effects of various tax proposals. Congress relies on the Congressional Budget Office for estimates of tax

receipts and on the Joint Committee on Taxation for estimates of the revenue effects of various tax proposals. However, the staffs of the Treasury, Congressional Budget Office, and Joint Committee on Taxation traditionally have worked closely to minimize the differences in estimates used by the executive and legislative branches, or at least to understand why the estimates differ (for example, because of different macroeconomic assumptions as to the rate of growth, inflation, or unemployment). The Joint Committee report each year provides a discussion of the differences between the two tax expenditure reports.

4. The Treasury list of tax expenditures for a number of years included tax expenditures under the estate and gift tax, but it did not do so in 2002. The Joint Committee does not include estate and gift tax provisions, as it considers them to be outside the normal income tax structure. The Treasury at least once prepared estimates for tax expenditures under various excise taxes (Davie 1994), but these estimates were not included in the annual report. The United States does not have a broad-based consumption tax at the federal level. Most OECD countries that account for tax expenditures cover indirect taxes in addition to the income tax and other direct taxes (such as a separate tax on capital gains) (OECD 1996).

5. For example, because of the tax deduction for charitable gifts, taxpayers are likely to give more to charity. Some of the benefits of this deduction are, therefore, shifted to charities and presumably to their clients. In contrast, the extra exemption for those over age 65 likely cannot be shifted; thus, the tax benefit from this tax expenditure may likely be retained by the taxpayers who are the claimants (Davie 1998). Even this tax expenditure may be partly shifted if, for example, employers pay those over age 65 a lower gross wage.

6. Henry C. Simons (1938) defined *personal income* as "the algebraic sum of (1) the market value of rights exercised in consumption and (2) the change in the value of the store of property rights between the beginning and end of the period in question."

7. It should be noted that applying preferential rates for taxing capital gains is considered a tax expenditure. However, a few opponents of tax expenditure budgeting have argued that preferential treatment of capital gains should not be considered a tax expenditure, because capital gains are not considered part of national income in the national income and product accounts (NIPAs). This argument is spurious, in that NIPA aims to measure income from current production, which is narrower than the Haig–Simons definition of net income.

8. It should be noted that the first tax expenditure budget prepared by the Treasury did not specifically refer to the Haig–Simons definition of income (U.S. Treasury Department 1969).

9. Surrey may have believed that inclusion of imputed rental income in a list of tax expenditures would undermine or bring ridicule to the whole concept of tax expenditures. Although imputed rental income of homeowners is not considered a tax expenditure, the tax expenditure budget considers the itemized deductions of mortgage interest and property taxes by homeowners to be tax

expenditures. If imputed rental income were considered a tax expenditure, mortgage interest and property taxes would properly be considered business expenses that were deductible to measure the net rental income.

10. The United States has adhered to the classical system of a separate corporate income tax.

11. Under the U.S. income tax, no gain or loss is recognized whether certain property held for productive use in a trade or business or for investment is exchanged for property "of a like kind" (such as the exchange of one commercial office building for another).

12. There is an analogy here to the state aid rules under European law. To be prohibited as state aid, the provision must be narrowly targeted so as to favor particular industries. For example, general accelerated depreciation would not be state aid, but granting expensing just for airplanes presumably would be.

13. Earning and profits is the U.S. tax concept used to determine whether a distribution to shareholders is a dividend (that is, a payment out of profits) or is a return of capital.

14. The other 11 items are deferral of income from CFCs; expensing of R&D expenditures; accelerated depreciation of rental housing; capital gains (except agriculture, timber, iron ore, and coal); accelerated depreciation of buildings other than rental housing; accelerated depreciation of machinery and equipment; expensing of certain small investments; amortization of start-up costs; graduated corporate income tax rate; exclusion of scholarship and fellowship income; and exclusion of public assistance benefits.

15. Tax expenditure estimates are frequently criticized for not being dynamic. It should be noted that budgetary projections for direct spending programs also are not a guide as to how much total government spending will decrease if a particular spending program were eliminated. For example, the government has a direct spending program for ballet classes and also for acrobatic classes. In preparing the budget, the government would need to make assumptions as to the take-up rate for each program. However, if the direct spending program for ballet classes were repealed, the take-up rate for acrobatic classes would increase. Thus, the reduction in government spending would be less than the direct spending projected for ballet classes.

16. There is at least one example of a tax credit designed to mimic a direct spending program. The 1997 act allows financial institutions to receive an annual credit after making a zero-interest loan to certain public schools in poverty areas. Economically, the credit, which must be taken into taxable income, is equivalent to a taxable interest payment. Thus, the government, by means of a tax credit, pays the interest on the bonds. The volume of loans that can be made—and hence the amount of tax credits—is fixed. State education agencies allocate the available credits to qualified schools that apply for the credits.

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8
Establishing a Tax Expenditure Administrative System That Achieves a Sound Fiscal System in China

Yaobin Shi
Ministry of Finance, China

Importance of Establishing a Scientific, Uniform, and Efficient Tax Expenditure System

Establishing a scientific, uniform, and efficient tax expenditure system will be essential for undertaking a deep reform of the Chinese fiscal and taxation system. To realize the government's objective of establishing a system for a socialist market economy, China began in 1994 to carry out a series of significant and sweeping macroeconomic reforms. The reforms were in the areas of fiscal policy, plus taxation, finance, foreign trade, foreign exchange, investment, prices, and so on.

During the 1994 reform of the fiscal and taxation system, the country established a tax administration system appropriate to its economic structure and growth. A uniform income tax system was introduced and is consistently applied to domestic enterprises. Also, a commodity and service tax system was introduced, the main component of which is the value added tax (VAT). These reforms played a major role in creating a fair external environment for enterprises, especially to facilitate market competition. They also have been an important aid in improving the link between social and economic activities, strengthening macro control, and promoting economic and social development, thus enabling China to make significant advances in establishing a socialist market economy.

Since the Asian financial crisis, China has gradually adjusted its structural and macroeconomic policies in order to cope with the danger of economic stagnation, arising mainly from weak external demand and deflation. The country began to implement a series of macroeconomic policy reforms in the interest of expanding domestic demand, adjusting the structure of the economy, and accelerating market openings to outside investors. With respect to fiscal policy, the most important consider-

ation was to apply the policy actively to stimulate the economy. Commensurately, adjustments in the fiscal system included (a) establishing clear fiscal objectives, (b) setting up a budgetary system that would be based on ministry budgeting and centralized payments by the treasury, (c) separating revenue and expenditure systems, and (d) promoting the reform of taxes and fee charges in rural areas. Implementing those policies and subsequent reforms led to rapid and sustainable growth in China.

To maintain and further develop such impressive results, as well as to ensure economically sustainable and smooth growth, China must continue carrying out the reform objectives. It must deepen and strengthen fiscal and tax reforms, as well as reforms in the areas of finance, foreign trade, foreign exchange, and state-owned enterprises. It must carefully coordinate the various reform measures and must develop, stabilize, and perfect market mechanisms.

With respect to enhancing fiscal policy in macroeconomic controls, China must continue to reform its budget administration system, using ministry-level budgeting as the core. The country must also further standardize the government procurement system and must steadily advance its efforts to reform tax and fee charges. Furthermore, the treasury must reform the centralized payment system.

Meanwhile, the new reform environment and the requirements on the fiscal system after China's entry into the World Trade Organization (WTO) must be considered. Given the government's fiscal objective to unify taxation laws, equalize the tax burden, optimize the tax system, expand tax bases, and properly divide powers and responsibilities between central government and local governments, China will further improve the current tax system in four main aspects. First, the tax system gradually must switch from a production- to a consumption-type VAT so as to further optimize the commodity and service tax system. Second, according to the requirements of China's entry into the WTO, the tax system should achieve equity in the tax burden of enterprises by unifying the tax treatment of domestically and foreign funded enterprises with respect to income tax, tax on land use, and tax on vehicles and vessels. Third, the individual income tax system must be improved; that reform must include establishing an information-processing system to reflect both individual income and expenditure, plus studying and establishing a more appropriate and effective individual income tax system. Fourth, China must establish a more scientifically designed and uniform administration system for tax expenditures by reviewing and standardizing current tax expenditure policies. In addition to strengthening the assessment of the effects of various tax expenditures, as well as controlling their budget cost, establishing a new system of tax expenditure, and reforming

current tax expenditure policies are now the main priorities of China's fiscal and taxation reform.

Internationally, the term *tax expenditures* basically refers to preferential tax arrangements that are provided to taxpayers by the government and that deviate from the benchmark tax system so that they can achieve certain social and economic policy objectives. The system of tax expenditures refers to the arrangement for implementing and administering such expenditures. This concept of tax expenditures was first used in the United States in 1960s; since that period, tax expenditure reports have been compiled by the Department of Treasury, and tax expenditures have been analyzed as part of the government budget management process. Thereafter, many other industrial countries began to study tax expenditure issues and have widely adopted similar practices.

In China, the study of tax expenditures has a very short history. Only in recent years has China explored and studied how to apply tax expenditure reporting. The Ministry of Finance recognized this issue and just 2 years ago organized experts to conduct systematic research and analysis to deal with current problems existing in China's tax expenditure system.

It is widely known that tax expenditure policy, or tax leverage, is one of the important policy instruments for achieving economic development. Since China's economic structural reform, which took place during the conversion of its economic system, tax expenditure policies have been widely used, including tax reductions and exemptions. Tax expenditures have played an important role in social distribution of income and in promotion of economic development.

However, because of the lack of administration, systematic control, and monitoring, the Chinese tax expenditure system has many problems. Those problems include the large number of tax expenditure policies, their misuse, and policy objectives that are ambiguous or otherwise unclear. The fundamental solution to such problems is to establish a scientific and standardized administrative system of tax expenditures, a new model for more effectively controlling and managing tax expenditures. In particular, tax expenditures must be brought into the budget management system.

China's Current Tax Expenditures and Major Issues

Formation of China's Tax Expenditures

China's tax expenditures were established gradually with the development of its tax system. During the 50 years since the founding of the country, China has successively undergone three different economic systems—(a) the traditional planned economy, (b) the planned commodity

economy, and (c) the socialist market economy—and has established corresponding taxation and tax expenditure measures. During the period of the traditional planned economy, which lasted from 1950 to 1978, China's tax system experienced four major reforms: (a) the establishment of a new tax system in 1950, (b) the revision of that system in 1953, (c) the reform of the industrial and commercial tax system and the unified agricultural system in 1958, and (d) the trial implementation of the new industrial and commercial tax system in 1973. The continual adjustment and reform of the tax system during that period was reflected mainly in the changes to tax expenditure policies. Political factors strongly influenced the changes. During that period, China applied different tax expenditure treatments to public and private interests in an effort to encourage the development of state-owned and collective economies and to restrict the development of individual and private economies. The jurisdiction of the authorities was repeatedly centralized and decentralized.

From 1979 to 1993, China experienced a period of reform and became more open to the outside world. In that period, the planned economy was transformed into a market economy. At the same time, China's tax system successively went through these major reforms: (a) the establishment of a foreign taxation system, (b) the replacement of profit submission to the state with tax payments by state enterprises, and (c) the further improvement of the industrial and commercial tax system. At that time, the tax expenditures adopted were classified by economic type, such as for foreign investment enterprises, individual and private economic ventures, township enterprises, and state-owned enterprises.

The tax expenditure policies applied mainly to income and commodity taxes. A framework of regional tax expenditures was preliminarily formed according to the progressive order of outback, coastal economic-opening zone, economic and technological development zone, and special economic zone. Tax expenditure policies for industrial development focused mainly on infrastructure, goods processing sectors, trade-oriented sectors, and import and export sectors. The scale of tax expenditures expanded rapidly, but administration was still basically decentralized. Tax reduction and exemption became important measures for local governments to promote regional economic development. As a result, the administration of tax expenditures spun out of control.

Beginning in 1994 and continuing to the present, the socialist market economy system was fully established and has been incrementally improved. In light of the demand for the development of the socialist market economy—and through the country's guiding ideology of unifying tax laws, justifying tax liabilities, simplifying the tax system, dividing powers reasonably, straightening out income distribution, and ensuring fiscal revenue—China carried out a comprehensive reform of the tax sys-

tem, adjusted and checked its tax expenditure policies on a large scale, and preliminarily established the administrative measures for tax expenditures that are suitable to meet the demands of the socialist market economy. The reform featured the contraction of the scope and scale of tax expenditures, the gradual identification of supporting priorities, and the diversification of reform measures. Increasingly, the central authority held administrative power. The situation of tax expenditures being out of control has improved, and tax revenue has increased rapidly.

From the evolution of the tax expenditure system described above, we note that the changes in China's tax expenditures were closely related to the development of its socialist market economy and, especially, to the progress of the reform of tax systems. China's system of tax expenditures was gradually formed during the different stages and according to the requirements of a socialist market economy. The practices during the years of evolution indicate that current tax expenditures have played an important role in promoting the development of key industries, attracting foreign investment, introducing advanced technologies, facilitating the development of the economy in backward regions, and adjusting for social conditions.

Identification of China's Major Issues

China's current tax expenditure policies mainly include tax laws, tax regulations, tax expenditure policies stipulated by the State Council, and other administrative regulations and transitional tax expenditure policies formulated by tax authorities under the State Council. Among the current 23 categories of taxes, 19 categories have stipulated tax expenditure policies. These policies can be classified into the following categories by type: (a) industrial tax expenditure policies that support infrastructure, that encourage industries, that promote high-technology industries, and that promote scientific research and development; (b) tax expenditure policies that encourage and support relevant products; (c) tax expenditures for special economic zones, economic and technological development zones, old revolutionary base areas, areas inhabited by minority nationalities, frontier areas and poor areas, and other special areas; and (d) tax expenditures embodying objectives of social strategies, such as facilitating labor employment, realizing social welfare, and giving consideration to special difficulties. Current tax expenditures mainly can be classified into two types: the *direct form*, such as reducing tax rates and reducing fixed-term taxes; and the *indirect form*, such as, levying first and refunding afterwards and granting investment credits, tax refunds for reinvestment, and before-tax deductions. Tax expenditure administration is characterized as centralized taxation authority and decentralized administration. The power of formulating tax expenditure policies is controlled by the

State Council, the Ministry of Finance, and the State Administration of Taxation. Provincial and local finance and taxation departments chiefly implement tax expenditure policies. Overall, the current system of tax expenditure administration contains some characteristics of the traditional Chinese tax system. The system focuses on administering special tax reductions and exemptions, but it is very limited. The system lacks systematic and uniform administrative patterns and capacity.

China's 1994 tax reform repealed most tax expenditures, but a rational, uniform, and efficient system of tax expenditures had yet to be established. Two problems persist: one relates to tax expenditure policies, and the other relates to tax expenditure administration. The explanation for these problems is as follows:

- Domestically and foreign-funded enterprises fall under different tax categories. The gap between these tax expenditures is too large. There are too many levels of tax expenditures to encourage foreign investment. Such tax expenditure policies are contrary to the basic principles of fair tax liabilities and equal competition demanded by the market mechanism.
- Measures predominated by regional tax expenditures have distorted investors' choice of locations. The policy framework favoring developed areas reinforces the advantages of provinces along the coast and works counter to the objectives of promoting a coordinated development of regional economies, which would gradually lessen regional gaps.
- The objectives, priorities, and measures of industrial tax expenditure policies are not clear enough and do not fully embody the orientation of industrial policies. Enterprises with foreign investment in production enjoy preferential policies, such as fixed-term tax reductions and exemptions, plus tax refunds for reinvestment. These preferential policies have resulted in a large amount of foreign investment in the general production, processing, and consumption industries. Meanwhile, as these policies overemphasize the adjustment of realized profits, they also have stimulated the centralization of investments in simple processing industries with long-term operations and quick results, as well as in labor-intensive industries. Given the long period of investment recovery and the lack of comparative advantage in preferential policies, basic industries—such as agriculture, water conservancy, energy, transportation, and important raw materials—and technology- and capital-intensive industries are not suitably developed.
- Too many poorly administered tax expenditures have stimulated tax avoidance behavior, have induced a change of competitive direction for enterprises, and have distorted the allocation of resources. To enjoy preferential policies, some enterprises avoid being taxed by means of reestablishment (that is, forming coalitions or false joint ventures),

which has caused the loss of national financial revenues and has helped induce a somewhat chaotic economic environment.

- There are too many tax expenditure policies, and they are not integrated. Because various tax expenditure policies have been established over time to achieve different objectives during different historical stages, these policies lack harmony and coordination. Some policies overlap or contradict each other. These problems have damaged the standardization of the tax system, as well as the tax expenditure system, and have negatively affected its functioning.
- The costs of tax reductions or exemptions and the effects of tax expenditure policies are unclear to policymakers because budgetary and taxation departments have not established an effective mechanism to monitor the costs of these reductions and exemptions. Tax expenditures have not been integrated into the budgetary system or controlled by the government. As a result, it is impossible for the government to analyze the costs and benefits of tax expenditure policies or to effectively evaluate or administer these policies.

Policy Options for Improving China's Tax Expenditures

Control and Reduce the Scale and Number of Tax Expenditures

By looking at the variety of tax expenditure systems throughout the world, one can see that few countries separately formulate transitional and special-item preferences. Most countries generally focus on income tax expenditures. Seldom are tax expenditures adopted for commodity and service taxes, such as neutral taxes with important revenue consequences like VAT. When tax expenditure objectives have been achieved or the effective dates have expired, the tax expenditures should be terminated immediately. Based on international practices, some objectives for standardizing and improving China's tax expenditure policies should include gradually reducing the total cost of tax expenditures, developing a plan to limit tax types that could introduce tax expenditures, and setting clear objectives and sunset dates for various tax expenditures.

Reinforce Industrial Tax Expenditure Policies, but Impose Restrictions on Introducing Regional Tax Expenditure Policies

Tax expenditure policies should be designed to support key infrastructures, such as energy and transportation industries, new and high-technology industries, and environmental protection industries. Support to ordinary industries should be reduced. Meanwhile, the pattern of

regional tax expenditures should be adjusted, with the east as the priority area and the west receiving additional prominence for development. The scope, conditions, and time limits for implementing current regional tax preferences should be more tightly controlled.

Standardize Tax Expenditure Policies for Social Activities

Different types of assistance should be used to address different hardships of social institutions, enterprises, and individuals. For example, government-sponsored institutions should receive financial assistance by means of budgetary subsidies. Tax expenditure policies should be directed only to those individuals and enterprises that encounter hardship and are unable to overcome it during a certain period of time. However, many tax expenditure policies go far beyond such assistance. The improper use of tax expenditure policies to assist any type of enterprise should be curtailed.

Fully Comply with the Requirement of Entry into the WTO

Currently, several tax expenditure policies benefit foreign funded enterprises and enterprises using imported inputs for export processing. Such situations should be rectified. Meanwhile, some tax expenditures should be repealed if they fail to comply with WTO regulations and agreements. However, those tax expenditures should be strengthened if they are used to protect weak industries.

Use Indirect Types of Tax Expenditures

In terms of instruments, tax expenditure policymakers in China should switch from using direct types of tax expenditures, such as tax reduction or exemption, to using indirect types, such as accelerated depreciation and deferred tax payments, because the latter can be more effective in promoting economic activities and are less likely to involve tax avoidance and evasion. For example, infrastructure that takes time to recover investment costs and that needs a large amount of capital, accelerated depreciation or deferred tax payments will assist sector economic growth. Indirect types of tax expenditures will also help the development of new and high-tech research and development projects.

Establish an Effective, Efficient, and Standardized Tax Expenditure Administrative System in China

Although there are problems inherent in many aspects of China's tax expenditure system, one of the keys to solving these problems is in the

administration. This problem is not easy to remedy. A new administrative system of tax expenditures needs to be established. The problem of tax expenditure administration should be analyzed from different perspectives to find an empirical, rational solution. Changing from tax preference to tax expenditure is a leap of theoretical cognition: Taxes will be regarded as a policy instrument not only for collecting government revenue, but also for realizing and sometimes even substituting for government spending programs. A system of tax expenditure should allow the government to administer tax expenditures in a rational and cohesive manner. As indicated in the U.S. Congressional Budget Act of 1974, a budget control process that excludes tax expenditures is one without any control at all. Fiscal finances do not improve if the government only controls the growth of direct spending. In addition, evaluating the implementation of control measures is difficult if tax expenditures are outside budgetary control. Consequently, it is difficult for the government to correctly choose and implement its economic intervention policies. It is critical for China to establish an effective and standard administrative system of tax expenditures soon because such a system will

- Strengthen the control of various tax expenditures, increase state revenue, and control the scope and scale of tax expenditures within the capacity of the financial resources of the government.
- Allow the government to make comparisons between tax expenditures and direct spending and to choose the more appropriate or best approach to fiscal expenditure.
- Help the government to correctly evaluate the real effects of various tax expenditures and to make various tax expenditures transparent.
- Monitor and control all government expenditures, including direct spending and tax expenditures. Only by combining tax expenditures and direct spending, and including them in the state budget, can total fiscal activities be accurately reflected and managed.

Good Practices: Cross-Country Comparison

Theory and Practice of Tax Expenditures

Western countries developed tax expenditure theories in the 1960s. In 1961, Stanley S. Surrey, who was the assistant secretary of the U.S. Treasury for tax policy and a professor at Harvard University, first introduced the concept of tax expenditures and separated the income tax system into two parts. One part was the necessary clauses to implement normal income taxes, such as stipulations of some basic elements such as objects of taxation, tax rates, time limits for tax payment, and tax collection and

administration. Another part was special preference clauses for provisions that deviated from normal income tax provisions to promote certain industries, activities, or classes. In 1968, on the basis of the needs of U.S. tax practices, the U.S. Department of Treasury formally introduced the concept of tax expenditures, used it in the analysis of the budget for that fiscal year, and published the first tax expenditure budget. From then on, the concept of tax expenditures rapidly expanded. The concept has been adopted by other Western industrial countries: Spain (1978), Austria (1979), Canada (1979), the United Kingdom (1979), France (1980), and Australia (1981) prepared and published their own tax expenditure budgets or tax expenditure schedules. Many developing countries also came to accept the concept of tax expenditures and tried to prepare their own tax expenditure tables.

The development of tax expenditure theories in developing countries grew out of experience of industrial countries. In 1996, meetings of the International Society of Finance and the International Association of Finance selected tax expenditures as the topic to discuss and study. In 1984, scholars of finance from six Organisation for Economic Co-operation and Development (OECD) countries jointly completed the first comparative study of the tax expenditure systems of these countries. In 1996, the OECD Fiscal Affairs Committee investigated the tax expenditure systems of 14 member countries, analyzed the differences in these countries and the reasons for these differences, and formed a quantitative imputation table of tax expenditures.

Basic Content of Tax Expenditure Administration

Tax expenditure administrative systems are intended to manage tax expenditures in a scientific, standardized, and efficient way. The system should cover the following aspects:

- *Definition of tax expenditures*. In a theoretical context, tax expenditures are an exception to the benchmark of tax law, but tax laws do not stipulate the benchmarks. Therefore, it belongs to the definition of tax expenditures to determine which items are benchmark and which are the special or preferential items that deviate from that benchmark. The core issue in defining tax expenditures is the division of tax benchmark systems. Countries approach the issue differently, and there are many disagreements.
- *Scope of types of taxes related to tax expenditures*. The tax expenditure analysis of Western industrial countries focuses on income taxes rather than on commodity and services taxes. A single type of tax is the focus, and there is no established estimation model.

- *Statistics of tax expenditures (how to obtain data about tax expenditures)*. Many countries generally obtain data about tax expenditures through statistics, estimates, projections, and simulations according to the nature of tax expenditure policies.
- *Evaluation of tax expenditures*. This evaluation involves determining whether the objectives of tax expenditure policies have been achieved and determining the efficiency of such policies.
- *Administrative model of tax expenditures*. A country's tax expenditure report may adopt a model of budgetary administration or report-type administration. In some countries, it is examined or approved by the legislature.

Comparison of Tax Expenditure Administrative Models

In recent years, the study of international tax expenditure theories and practices has included some preliminary analysis of tax expenditure administrative models. The comparative analysis mainly selected administrative models, statistical methods, and evaluation methods. These aspects are difficult but key points in establishing and improving tax expenditure systems in China. The tax expenditure administration in Western industrial countries is mainly based on three models:

- *Overall budget administrative model*. Australia, Austria, Canada, France, Spain, and the United States adopted this model. These countries stipulate unified tax expenditure accounts for various tax expenditure items and periodically prepare annual reports. Together with the estimate of major tax expenditure costs, these annual reports are attached to annual budget reports. These six countries have established standardized tax expenditure budgets. This model has the following characteristics: (a) countries adopting this model have a long history of tax expenditure practices and have relatively mature systems; (b) the data about tax expenditures in the budget reports are specific and standardized; (c) the definition and statistical method of tax expenditures are clear and proven; (d) governments attached importance to this matter and made in-depth studies; and (e) legislatures strictly examined tax expenditures, which take effect only after legal procedures are in place and are a component of the budget report.
- *Quasi-budget administrative model*. Germany, Italy, the Netherlands, and Portugal adopted this model. These countries prepare periodic reports of only the important tax expenditure items, and they conduct analysis and evaluation of these items. These reports are not a component of the state budget report. They do not require the legislature's examination and approval, and they are used only as references and expla-

nations of budget acts. The characteristics of this model are as follows: (a) countries that adopt this administrative model have a short history of tax expenditure development; (b) these governments do not attach as much importance to tax expenditures as do governments using the overall budget administrative model; (c) the statistical, analytical, and evaluation methods of tax expenditures are being continually improved and do not have precise models; and (d) there are different opinions on whether tax expenditure reports should be a component of the budget.

- *Noninstitutional provisional supervision and control model*. Some OECD member countries and some developing countries have adopted this model, which is a provisional, single-item evaluation. That is, revenue forgone is evaluated only when the government decides to provide fiscal subsidies to certain departments or to industries in the form of tax expenditures. There is no unified, regular, and systematic system. The characteristics of this model are as follows: (a) it is a provisional, single-item analysis without consistent statistical and evaluation methods, and the government's administration and control is relatively weak; and (b) the government conducts analysis and evaluation internally, and there are no strict legal procedures, no need for submission to the legislature, and no need for legislative examination and approval.

Comparison of Statistical Methods of Tax Expenditures

Tax expenditure statistics are concerned with how much tax revenue has been forgone by the government by implementing tax expenditure policies. Generally, revenue forgone can be directly calculated from the data provided by tax authorities at all levels of government. But as some tax expenditures are concealed, revenue forgone must be estimated. The techniques applied and problems encountered in estimating tax expenditures depend on the tax administrative systems, available data, calculation models, and complexity of the tax legislation. Issues related to estimating tax expenditures include the treatment of secondary effects on the estimate of certain tax expenditures, presumptions that economic behavior remains unchanged after the elimination of certain items, and presumptions that economic conditions are not affected by individual economic measures. Tax expenditures are generally estimated using one of the following three methods:

- The *revenue forgone method* calculates the amount of annual tax revenue that is reduced because of the provision of tax expenditures. It is an ex post method of checking the cost of certain tax expenditures. The model measures the amount of financial revenue that is reduced

because of the existing tax preference clauses by comparing the new legislation (including tax preference clauses) and the original legislation (without tax preference clauses).

- The *revenue gain method* calculates the possible increase of tax revenue if certain tax expenditures are annulled. It generally considers the following relevant behavioral effects related to such a change: (a) behavioral effects on taxpayers; (b) feedback effects (since taxes are connected with economic activities, an annulled tax expenditure clause will affect the overall level of economic activity to a certain extent, which will affect the level of government tax revenue generated by the economy); and (c) interactions of various categories of taxes, in that an annulled tax preference clauses in one tax category may affect the tax revenue of related tax categories.
- The *outlay equivalent method* considers how much before-tax expenditures are needed to reach the same after-tax benefits or results when one corresponding direct expenditure replaces one tax expenditure.

Comparison of Tax Expenditure Evaluation Methods

Several disadvantages of tax expenditures have been noted: Tax expenditures distort the market selection and allocation of resources, make tax rates high, complicate the tax system and administration, reduce transparency, are unfair and not easy to control, and so on. However, the advantages of tax expenditures are undeniable: (a) legal formulations are relatively stable, making it easy for taxpayers to make decisions related to production and operations; (b) tax expenditures cover areas that direct spending might not be able to reach; (c) they are more timely, more effective, and less costly; whereas direct spending is effective only after passing complicated fiscal budgetary procedures; and (d) they attract foreign investment and broaden opportunities with the outside world.

Cost–benefit analysis requires the government to adopt analytical methodologies used by enterprises to calculate the efficient use of resources and program effectiveness. This analysis also can be applied to evaluating tax expenditures. One objective of tax expenditures is to increase the net value of benefits in the use of resources. Generally, there are three evaluation methods that can be taken:

- *Net present value of benefits* involves quantifying the costs and benefits of various tax expenditures that encourage investments, selecting an appropriate social discount rate, converting costs and benefits into present values, subtracting the present value of costs from the present value of benefits to get the net benefits, arranging the order of planned solutions according to the net benefits, and selecting the best solution.

- *Ratio of benefits to costs* involves quantifying the costs and benefits of various tax expenditures, converting them into present values, and obtaining the ratio of the present value of benefits to the present value of costs. If the ratio is more than 1, benefits are positive; if it is less than 1, they are negative. The solution with the highest positive benefit is the best.
- *Internal rate of return* involves calculating the internal rate of return by assuming that the present value of benefits is equal to the present value of costs. In determining the sequence of two items, priority is given to the project with the highest internal rate of return.

Establishing a Tax Expenditure Administrative System in China

Basic Principles

In China, establishing a tax expenditure administrative system means starting from scratch. However, policymakers can draw on relevant experiences of other countries. At present, China's tax laws need improvement. The structure of the tax system is quite different from that typically found in Western industrial countries. The legal environment for tax administration needs clarification, and the statistics and analysis of some national economic indexes are still at an incipient stage. Therefore, it would be better to proceed slowly, focusing on incremental improvements to ensure success in establishing a tax expenditure administrative system. The following basic principles are relevant:

- The arrangement of tax expenditures must take into account the country's fiscal capability. This principle is important to maintain tax expenditures within moderate and reasonable scope, particularly vis-à-vis the overall scale of direct spending. Optimizing the fiscal structure means that, using the premise of controlling the aggregate amount, policymakers must ensure that direct spending and tax expenditures are coordinated and appropriately weighted. Although tax expenditures cannot substitute for some budgeted direct spending—such as budgeted appropriations for national defense and public security—they can sometimes substitute for other budgeted direct spending. For example, when the amount of financial assistance is small and the number of recipients is large, tax expenditure could be more effective and efficient in distributing benefits than direct spending. Therefore, when the government formulates the budget, a comparison should be made of direct spending or tax expenditures. This comparison will allow policymakers to control the total amount of

spending and to coordinate tax expenditures and direct spending structures.

- The key to tax expenditure administration is increasing the efficiency of tax expenditures. China has overlooked the benefits of monitoring and evaluating tax expenditure policies over time. Thus, policymakers have no clear understanding of the results of most tax expenditures policies. Establishing a tax expenditure administrative system should solve this problem. China has an opportunity not only to obtain statistics for tax expenditures, but also to make an overall evaluation of the results and informed decisions to preserve, expand, reduce, or annul such expenditures based on expected outcomes, efficiency, and fiscal consequences. Tax expenditures should be treated in the same way as direct spending. Evaluating the results of tax expenditures using a cost–benefits analysis will provide information on how much the government has spent in tax costs and what the economic benefits are, which will help improve the overall structure of expenditures. These evaluations will help the government to make decisions about the arrangement of tax expenditures and to increase their overall efficiency.
- The system of tax expenditures should be established in an orderly way and should be standardized. Different systems are used for domestically funded enterprises and foreign funded enterprises. At the same time, various tax policies are being adjusted as a part of the reform of the economic structure. Changes made without considering the budget year have resulted in many different tax policies within a given budget year, so it is difficult to estimate the resulting tax expenses. There are no statistical applications, data, or technical measures to establish a proper tax expenditure administrative system. If the overall budget administration model is applied to tax expenses, many problems will be encountered that will be difficult to overcome. For this reason, China's tax expenditure administrative system cannot be established in a rush, but rather implemented and standardized in stages. Reforms can begin with certain departments or specific tax expenditure items to obtain statistics, measurements, analysis, and evaluation, as well as to prepare a basic tax expenditure report. This procedure is similar to the noninstitutional, provisional supervision and control in other countries. After some experience is accumulated, the reform can be extended to tax expenditures of major categories of taxes and other key items. In this way, policymakers can gather data and perform evaluative analyses to prepare a formal, systematic tax expenditure report that can be attached to and published with the annual budget report. Further improvements can be made—for example, preparing a unified account of tax expenditures, including it in the

state budget procedures, and maintaining complete budget control over tax expenditures.

Vision for a Tax Expenditure Administrative System in China

Scope of Tax Expenditures

According to tax expenditure theories, a tax system consists of two different elements: a tax benchmark and any deviation from that benchmark, with the latter generally including tax expenditures. In practice, tax laws usually do not stipulate tax benchmarks; therefore, some judgment is required to identify these benchmarks. In China, it probably is better not to define the scope of tax expenditures too widely during the early stages of establishing an administrative system. Emphasis should be given to tax expenditure policies that can be replaced by budgeted direct spending with specific purposes. As far as tax types are concerned, initially China should not use the model applied by Western industrial countries, which focuses on the analysis of income tax expenditures. Instead, China should take into account the large proportion of commodity and service taxes, and the multitude of tax expenditures, giving these items as much importance as income tax expenditures in the analysis.

Tax Expenditure Statistics

Tax expenditure statistics have two aspects. One is the aggregation, or categorized calculations, based on the data about tax expenditures that can be obtained directly. Another is the estimation made on the basis of indirect data when pertinent data cannot be obtained directly. The former would be based on the statistical analysis of taxation departments at all levels of government and would require the active cooperation of taxpayers and relevant departments. To do this analysis well, China should expand the current scope of tax statistics and data indexes filed by taxpayers to obtain more accurate statistical data, to reduce dependence on estimates, and to lower the percentage of estimation errors. The latter is more complicated and needs the support of statistics departments and the use of statistical methods suitable to China's data environment. Under these conditions, simple, accessible methods, such as the revenue forgone method, can be applied at the beginning. More complicated methods, such as the revenue gain method or outlay equivalent method, should be used only for in-depth analysis of key data.

Evaluation of Tax Expenditures

The evaluation of tax expenditures is a difficult task. The key is to select a correct evaluation method. At the beginning of the reform, China should use simple methods. To evaluate the macro effects of tax expendi-

tures, cost–benefit analysis is particularly suitable. For evaluating the micro effects, the net present value evaluation method serves well.

Other Coordinating Measures

In China establishing the tax expenditure system does not mean labeling various tax preferences with new names. It is a leap of cognition and a significant reform with important theoretical implications and practical significance. Therefore, the meaning, objectives, procedures, and contents of the tax expenditure administrative system and duties of all levels of government should be clearly stated in the form of administrative regulations by the central government to ensure the reform is based on regulations.

All ministries would be expected to give their full support to the reforms for implementing the new system of tax expenditures. Regarding various statistical data and related requirements, the Ministry of Finance, the State Administration of Taxation, the General Administration of Customs, and the State Administration of Statistics should coordinate with each other and provide complete and reliable data on time.

China will continue to improve its systems of tax policy and tax administration. Until these systems are fully developed, integrating all types of taxes in a cohesive manner, analysis of tax expenditures will remain difficult. Specifically, it is difficult to apply a uniform standard to perform a statistical estimation and analysis for different tax types. Another problem is that tax reductions and exemptions are granted without the proper level of government approval, and the tax is levied first and then refunded. To establish a sound tax expenditure administrative system, China will need to further improve the tax system, and the tax laws will have to be implemented in a strict manner before reform can fully take place. Finally, the overall fiscal system is likely to benefit from wider public awareness about tax expenditures.

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China's Current Tax Expenditure System: Issues and Policy Options

Guoqiang Ma
Dong Bei University of Finance and Economics, China

The transformation of China to a market-based economy in the 1980s had the effect of strengthening its tax system. Yet, the Chinese government has increasingly used tax expenditures as a measure to enhance the overall economic structure and to promote growth and stability. Currently, the excessive use of tax expenditures has caused revenue losses, affected the country's ability to achieve a balanced budget, and caused economic distortions. Thus, there is a clear need to improve current tax expenditure policy and to reform the tax expenditure system commensurately.

Definition of Tax Expenditure

A tax expenditure can be defined both theoretically and practically. Theoretically, there is no distinction between a tax expenditure and a nontax expenditure; however, current efforts to define tax expenditures have led to amplifying their scope and scale. As a result, some exemptions not typically belonging to tax expenditure categories are included. On the practical side, tax expenditures need to be analyzed more carefully to evaluate the pros and cons of current policies, to better articulate tax expenditure policy objectives, to undertake a cost–benefit analysis of tax expenditures, to build a budget system for tax expenditures, and to rationalize administrative authority over them.

In general, a *tax expenditure* signifies reducing or exempting organizations or individuals from tax liabilities on the basis of a tax benchmark, and it is used to achieve specific government policy objectives. Compared with other tax exemptions or deductions, tax expenditures embody three notions: (a) they relate to organizations and individuals who have tax-paying obligations; (b) taxation changes within the framework of the tax benchmark are excluded from the category of tax expenditures; and

(c) tax expenditures have clear policy objectives, and tax exemptions or deductions with no policy objectives are excluded.

On this basis, the following four items should not be included in the definition of tax expenditures in China's current tax system.

Nonlevied Tax

Just because a tax is not levied does not necessarily imply that it is a tax expenditure. According to the definition above, a tax expenditure exempts organizations or individuals originally obligated to pay taxes from tax liabilities. Not levying a tax signifies that the organizations and individuals are not obligated to pay taxes. This is the basic difference between a tax expenditure and a nonlevied tax, regardless of whether it involves an organization or individual.

Under Chinese tax law, whether organizations or individuals have taxpaying obligations depends on whether they possess both a natural character and an economic character for purposes of taxation. Only those with both have taxpaying obligations; thus, deducting or exempting their tax qualifies as a tax expenditure. Others do not have the obligation for paying taxes. Under the second circumstance, if an organization or individual has no taxpaying obligations, deducting or exempting tax is not a tax expenditure. Additionally, the nature of an organization also decides its tax obligation. Generally, military, administrative, and "executing" entities that are supported by budgetary expenditures assume no tax liabilities. Therefore, tax deductions and exemptions applying to them belong to nonlevied taxes. However, nonbudgetary spending entities that engage in economic activities must pay taxes, signifying that tax deductions and exemptions for them may be tax expenditures.

Indeed, each type of tax has its own tax base. Each tax base element also has its own natural and economic character. Whether an element has both natural and economic character is judged on the basis of an analysis of its tax category.

For example, in China, value added tax base elements are goods sold and labor services rendered in processing, repairing, or fixing. In this case, goods and labor are the natural property, and selling and providing services in China is the economic property. Also in the case of value added tax, licenses and certificates issued by the government administrative departments do not have the natural character of goods or labor, so they are not subject to value added tax. Hence, they are considered nontaxable items. Other examples include copyright sales of master films, as well as of master video and cassette tapes. These sales do not possess the natural character of goods or labor (that is, processing, repairing, and fixing). Therefore, they are not endowed with taxpaying

obligation characteristics and are not taxable. Prefabricated units built at construction sites and directly used in the construction of an entity or enterprise have the natural character of goods and labor; however, they lack the economic character of selling and providing services, and thus they are exempt from tax . However, agricultural products harvested and sold by agricultural producers not only have the natural character of goods and labor but also the economic character of selling and supplying, so they are endowed with taxpaying characteristics and are taxable. They are tax expenditures if deducted or exempted from taxes.

Deviations from a Legally Specified Tax Base or Tax Rate

Given the legal benchmark tax base and tax rate, a tax expenditure becomes the deviation of the applicable tax base and tax rate from that benchmark. However, merely specifying a legal benchmark tax base and tax rate does not prompt the deviation of the applicable tax base and tax rate from the legal benchmark. Thus, such specifications are not considered a tax expenditure.

In the current Chinese tax system, regulations on the progressive thresholds for value added tax rates specify the benchmark tax bases. However, they do not cause a deviation of the applicable tax base from the benchmark tax base; thus, such regulations do not belong to the category of tax expenditure. Similarly, the related regulations on the export tax refund of value added tax specify a zero tax rate. These regulations do not cause the deviation of the applicable tax rate from the legal benchmark tax rate; thus, the zero tax rate also is not a tax expenditure. Other similar regulations related to legal tax benchmarks are not tax expenditures either.

Changes to the Benchmark

By definition, a tax expenditure is based on the tax benchmark, and tax deductions and exemptions inherent to tax expenditures can be classified by comparing them with the tax benchmark. Making changes to the tax benchmark by repealing tax categories, shrinking the legal benchmark tax base, and lowering the legal benchmark tax rate may result in deductions or exemptions of tax liabilities. However, some statutory deductions or exemptions do not belong to the category of tax expenditures. For example, China's repeal of the value added tax on land and of the regulatory tax on fixed assets investment does not belong to the category of a tax expenditure. In the current tax system, expanding the scope of tax reduction for the value added tax and implementing an income- or consumption-based value added tax do not constitute tax

expenditures. The reduction of the category A tax on cigarettes to a rate of 40 percent, on gold and silver ornaments to a rate of 5 percent, and on soap to rates from 5 percent to zero do not belong to the category of tax expenditures. Similar regulatory changes in other tax categories are also not tax expenditures.

Simple Tax Measures

By definition, the essence of a tax expenditure is tax deduction or exemption. Adopting a simple tax measure, at least in principle, does not cause a tax liability to increase or decrease. In fact, tax standards included in simple tax measures are based on benchmark tax bases and tax rates. Thus, whether in principle or practice, simple tax measures do not belong to the category of tax expenditures. For example, in the current tax system, the levying of 6 percent value added tax for small taxpayers is not a tax expenditure. Similar regulations in other categories are not tax expenditures either.

China's Current Tax Expenditure System

China's current tax expenditures are classified into three types: tax expenditures for economic development; tax expenditures for social development; and tax expenditures to support political, military, and diplomatic development.

Tax Expenditures for Economic Development

Given the conditions of economic development in China and the objectives of tax expenditures, this type of tax expenditures can be classified as having three main purposes: (a) adjusting the economic structure and increasing economic efficiency; (b) increasing total economic output and economic growth, plus maintaining economic stability; and (c) protecting the environment and achieving sustainable economic development.

Adjusting the Economic Structure and Increasing Economic Efficiency

Tax expenditures to support economic structural adjustment mainly include the following:

- *Tax expenditures adjusting enterprise structure*. This category includes deductions and exemptions for certain state-owned or collectively owned enterprises, as well as deductions and exemptions for small enterprises and enterprises with low profits.

- *Tax expenditures adjusting industrial structure*. This category includes deductions and exemptions for the agriculture, forestry, animal husbandry, and fishery industries; for metal and nonmetal mine products, petroleum, coal, power, gasoline, and diesel oil; for building materials; for transport and transportation; for finance and insurance companies; and for tourism.
- *Tax expenditures adjusting regional economic structure*. This category includes deductions and exemptions for special economic zones, economic research and development zones, and high-tech industrial development zones; for coastal border cities, cities along rivers, inland cites, and boundary cities; for the middle and western regions; for minority nationality areas; and for low-income regions.

INCREASING TOTAL ECONOMIC OUTPUT AND ECONOMIC GROWTH, MAINTAINING ECONOMIC STABILITY

Tax expenditures aimed at adjusting total economic output include the following:

- *Tax expenditures for exports of goods and services*. This category includes (a) deductions and exemptions for exports of goods and for the equipment and raw materials used for producing exported products; (b) deductions and exemptions for imported products that are used to produce exported goods; (c) deductions or exemptions for those imported goods and materials that are used for re-exports after domestic processing and service; and (d) exemptions for local cross-border trade.
- *Tax expenditures for investment*. This category includes accelerated depreciation, transfers of losses, investment credits, and reinvestment tax refunds.
- *Tax expenditures for foreign borrowing and investment*. This category includes tax exemptions and deductions for foreign loans and foreign investment enterprises.
- *Tax expenditures for technology advances*. This category includes tax deductions and exemptions for high-tech enterprises; high-tech products; and technology development, imports, services, and technology transfer.
- *Tax expenditures for new enterprises*. This category includes tax deductions and exemptions for new enterprises in designated industries, new enterprises in designated regions, and new enterprises in the infrastructure sector.

PROTECTING THE ENVIRONMENT AND ACHIEVING SUSTAINABLE ECONOMIC DEVELOPMENT

Tax expenditures intended for environment protection include these:

- *Tax expenditures for reducing pollution*. This category includes tax deductions and exemptions for those products that meet pollution emission standards.
- *Tax expenditures for encouraging comprehensive use of recycling*. This category includes the tax deduction and exemption for products that are produced by recycling waste.

Tax Expenditures for Social Development

The tax expenditures for social development have four categories:

- *Tax expenditures for family planning*. Tax expenditures in this category include those applying to contraceptive drugs and devices.
- *Tax expenditures for basic needs and for certain institutions*. This category includes deductions and exemptions to support basic life necessities such as food and housing; deductions and exemptions related to cultural, educational, health, and physical activities; and deductions and exemptions applying to cultural, educational, and sports institutions.
- *Tax expenditures for social welfare*. This category includes tax deductions and exemptions for settlement and employment of people with disabilities; for products and services produced by people with disabilities; for manufacturing, selling, and importing those goods that are used by people with disabilities; and for senior citizens' welfare organizations.
- *Tax expenditures for rural development*. This category includes tax deductions and exemptions for agriculture, forestry, animal husbandry, and fishery industries; for town-owned enterprises; for county-run enterprises; and for rural commercial enterprises and financial institutions.

Tax Expenditures for the Development of Political, Military, and Diplomatic Areas

Tax expenditures directed to support political, military, and diplomatic development include

- *Tax expenditures in the political field*. This category includes tax deductions and exemptions for newspapers published by the Communist Party Committee, by the government, by social communities, and by democratic parties, as well as newspapers published for government logistical authorities.
- *Tax expenditures in the military field*. This category includes tax deductions and exemptions for military products; for military-run enterprises; for organizations arranging the settlement and employment of

military families; and for families of slain service people and service people with disabilities.
- *Tax expenditures in the diplomatic field*. This category includes tax deductions and exemptions for goods and services acquired by embassies and by embassy staff members.

Problems with the Current Chinese Tax Expenditure System

The main problems in the current Chinese tax expenditure system can be summarized as follows: overly broad objectives, overly simplified methods, and loose administration. These problems can be classified into six areas for discussion:

Overly Broad Scope and Overly Large Scale of Tax Expenditures

In principle, a tax system contains benchmark and nonbenchmark elements. The benchmark elements form the basis of the system, and nonbenchmark elements supplement the system. If a nonbenchmark element becomes a major component, the system will need to undergo a reform to transform that element into a benchmark element. Certainly, this is the case for a country with a well-functioning legal system. Its benchmark elements are predominant, whereas its nonbenchmark elements are imposed through special regulations. However, in the Chinese tax system, the nonbenchmark elements, consisting of tax expenditures, have become dominant. In terms of policy objectives, the objectives of tax expenditures in China cover almost all areas of the economy, the society, the military, politics, and diplomacy. Thus, tax expenditures assume the same functional breadth as the benchmark tax system. In terms of tax policy options, direct and indirect taxes must assume both the role of collecting revenue and the role of implementing tax expenditure policy. In terms of the relationship between the benchmark and nonbenchmark system, the regulations of the latter have affected nearly all elements of the former, to the extent that the Chinese tax system cannot be understood without a thorough knowledge of the nonbenchmark system.

In terms of scale, the cost of current tax expenditures has reached—and even exceeded—the amount of total tax revenue collected by the benchmark system. For example, the cost of tax expenditures within the commodity tax nearly equals commodity tax revenue. Moreover, the cost of income tax expenditures exceeds the amount of income tax revenue. In terms of taxpayers' attitude, organizations and individuals are interested in the nonbenchmark tax system as it leads to tax deductions and exemptions, so the benchmark tax system is of secondary importance.

Consequently, the current tax expenditure system, with its overly broad scope and large scale, not only has caused the loss of tax revenue and increased the risk of achieving a balanced budget but also has distorted commodity prices and produced substitution effects that have led to economic inefficiency. Moreover, tax expenditures not only have increased the difficulty of tax administration but also have increased the cost of tax collection. Finally, the tax expenditure system has made the current tax law more complex and difficult to comprehend and has thereby raised the cost of compliance.

Ambiguous Objective of Tax Expenditure Policy

A tax expenditure should clearly specify, up front, preferential and nonpreferential items, thus providing policy guidance that allows preferred activities to be promoted. However, China's current tax expenditure policies fail to distinguish between such activities, and the system delivers no policy guidance directing the promotion of certain activities over others. For example, tax expenditures have been applied to all industries: primary, secondary, and tertiary. For primary industries, tax expenditures are widespread; they pertain, for example, to agriculture, forestry, animal husbandry, and fishery. For secondary industries, tax expenditures cover raw materials, energy, and segments of the processing sectors. For tertiary industries, tax expenditures cover every sector except the entertainment industry. The tax expenditure policy for regional economic growth includes tax expenditure policies for the east coast as well as for the middle and western regions of the country.

In any tax expenditure system, policy objectives exist and some of them intersect. However, good tax expenditure policies are arranged according to a phased and sequenced plan; otherwise, the tax expenditure system will not meet any single policy objective. When numerous policies are implemented for achieving multiple objectives simultaneously, the application of these policies becomes inconsistent.

China's current tax expenditure policies are designed to achieve multiple objectives, to develop the industrial structure, to develop the regional economy, to promote technological advances, to encourage foreign investment, and to expand exports. These tax expenditures are not granted on the basis of a well-defined policy objective; instead, they are granted for various policy objectives, some of which are conflicting.

For example, under China's industrial policy, the fewest tax expenditures should be granted to secondary industries, especially the processing industry. But according to China's policies to promote technological advances by bringing in foreign investment and expanding exports, secondary industries—especially the processing industry—have been

granted numerous tax expenditures. Also, under China's policy for regional economic development, the central and western regions should enjoy more tax expenditures; however, under the policy encouraging foreign investment, the eastern (coastal) region receives priority, given that most foreign investment is concentrated there rather than in the central and western regions.

Structural Imbalance in the Application of Tax Expenditure Policies in the Tax System

Tax expenditure policies are applied directly and indirectly to reduce tax liabilities. Direct tax expenditure policies have the advantage of simplicity and certainty. For example, tax exemptions, deductions, and refunds are a direct form of tax expenditure. Policies applied indirectly—that is, by reducing tax liabilities—have the advantage of flexibility. For example, tax offset and accelerated depreciation are indirect forms of tax expenditure. In general, direct tax expenditures increase taxpayers' incentive to evade taxes and facilitate rent-seeking; in contrast, indirect tax expenditures increase taxpayer's incentive to adjust their behavior and their production activities. Thus, in tax expenditure policy development, indirect forms of tax expenditures are preferable. These methods have been used in countries with well-established tax expenditure systems. In China, however, over 95 percent of tax expenditures are direct.

Lack of Cost–Benefit Analysis of Tax Expenditures

Tax expenditure is a special form of budgetary expenditure. Increasing the efficiency of tax expenditure requires a cost–benefit analysis. However, no cost–benefit analysis on tax expenditures is currently being conducted in China. In creating tax expenditure policies, the government has neither considered their effectiveness and efficiency, nor has it contemplated their cost. The government has not set tax expenditure policy on an empirical basis, but in a subjective way based on anticipated benefits but without an assessment of the requisite costs. In the end, these tax expenditures can cause not only great revenue losses but also loss in economic efficiency.

Lack of Tax Expenditure Budgeting System

Tax expenditure is a kind of fiscal expenditure and should be managed the same way as the national budget, so that the public can understand the rationale for the use of tax expenditures. Currently, there is no budgetary system to manage tax expenditures in China. Members of the pub-

lic cannot effectively comprehend tax expenditures because they do not know the scale and structure of tax expenditures.

No Standardized Rules to Authorize Tax Expenditures

The power to authorize tax expenditures should be properly divided not only vertically, between central and local governments, but also horizontally, among legislative authorities and administrative authorities, as well as among tax departments within the same level of government jurisdiction. However, currently the power to authorize tax expenditure policy is nearly entirely in the hands of the central government. In practice, however, when local governments deal with regional issues, they tend to undertake tax expenditures to suit local needs. Horizontally, at the central government level, only about 10 percent of tax expenditures are authorized by legislative authorities. Most tax expenditures are granted by the tax authorities, and the rest are granted by economic authorities.

Policy Options: Building a Well-Functioning Tax Expenditure System

Many of the problems of the Chinese tax expenditure system identified in this chapter could be addressed by the following recommendations.

Define the Scope of Tax Expenditure Based on Economic Principles

In a market economy, the main functions of government are (a) to provide public goods and services and (b) to establish a desirable market environment for economic development and social security. Thus, the government has the responsibility for economic management. However, the management function should be limited to areas where market functions are weak and where markets need stimulation through sound economic policy. Basically, the function of taxes is to collect sufficient revenue for governments to finance their expenditures to provide public goods and services. Though taxes can be used to adjust economic activities, the scope of the tax adjustment function should be confined to the areas where markets are weak.

Based on this concept, one may conclude that the scope for tax expenditures in China needs reform. In terms of economic sectors, tax expenditures should remain for (a) agriculture and industries in the raw materials, energy, and transportation sectors; (b) midwestern, backward regions; (c) investment and technological advances; and (d) environment protection. In social areas, tax expenditures should remain for basic needs

and for cultural, educational, health, and sports endeavors. All other tax expenditure policies should be repealed. The tax expenditure for social welfare and political and military endeavors should be replaced by direct government expenditures. A few of the remaining tax expenditures should be changed to nonlevied tax, and the rest should be dealt with through a comprehensive tax system reform.

Specify a Clear Policy Objective of a Tax Expenditure Policy

After revising the scope of tax expenditures, China should introduce and implement them in the order of primary objectives. For example, these objectives could be ranked as follows: first, promoting technological advances; second, developing the industrial structure; and third, encouraging foreign investment. In the revised tax expenditure system, government projects with multiple, overlapping objectives should be implemented as multiple tax expenditures. For example, high-tech projects in preferential industries that are funded with foreign investment would be eligible for a three-part tax expenditure. High-tech projects in preferential industries that are domestically funded would be eligible for a two-part tax expenditure. High-tech projects in nonpreferential industries that are domestically funded would be eligible for a single tax expenditure. Finally, projects in nonpreferential industries that are not high-tech and are funded domestically would not be considered a tax expenditure.

Optimize the Policy Measures of Tax Expenditure

In terms of tax types, direct taxes, including income and property taxes, should be emphasized in the tax expenditure policy rather than indirect taxes such as commodity tax. Commodity tax can be transferred from producers to users, thereby making it difficult to determine the final beneficiary of the tax expenditure, to review the effect of the tax expenditure, and to conduct a cost–benefit analysis. In addition, the commodity tax is closely related to commodity prices. The tax expenditure for commodities can easily distort commodity prices, produce substitution effects, and reduce economic efficiency. By contrast, the burden of income and property taxes cannot easily be transferred, and it seldom distorts commodity prices. Thus, tax expenditure policy revisions should focus on income and property taxes. Value added tax, a type of commodity tax, is neutral in a tax system. It should not be used as a tax expenditure. Moreover, turnover tax, also a commodity tax, should not be used for tax expenditure purposes. Eventually, the tax expenditure for commodity tax should be completely eliminated.

With respect to policy application, however, an indirect form of tax expenditure, such as accelerated depreciation, is preferred to a direct form of tax expenditure, such as tax credit, because, as discussed previously, an indirect form encourages taxpayers to adjust their behavior and production activities, whereas a direct form of tax expenditures would increase taxpayers' incentive to evade taxes and would facilitate rent-seeking.

The basic elements of a tax include the tax base, tax rate, taxation amount, and time of taxation. An indirect form of tax expenditure comprises modifications of the tax base and time of taxation. A direct tax expenditure comprises preferential tax rates and taxation amounts. In practice, indirect tax expenditures are preferable to direct tax expenditures.

Apply Cost–Benefit Analysis to Tax Expenditures

As for existing tax expenditures, cost–benefit analyses should be conducted as part of an overall review. Cost–benefit analyses should also be conducted when reviewing proposed tax expenditures to ensure that they achieve the intended economic outcomes. Cost–benefit analyses should consider all main direct and indirect, visible and hidden, and actual and implicit factors. Limitations in technology and data make it impossible to ascertain the costs and benefits of tax expenditures with the accuracy one desires. Even so, as a starting point, when cost–benefit analysis for tax expenditures is conducted, the direct, visible, and actual costs and benefits can be approximated.

Establish a Budgeting System for Tax Expenditures

The budget system for tax expenditures should be set up immediately after the tax expenditures are identified. However, currently—given the large scope and scale of China's tax expenditures—neither the central nor local governments at any level have experience in budgeting tax expenditures. When one is preparing a tax expenditure report, one should tackle the easy part first and then implement a more rigorous, detailed analysis with various stages: first, estimate cost of tax expenditures for certain spending departments or for an expenditure project; second, expand to estimate main tax expenditures cost estimates of major types of taxes or for important projects; third, prepare the overall tax expenditure budget. When this last step is accomplished, the tax expenditure budget should be integrated into the budget administration system.

Once a tax expenditure budget system is established, the system should be officially endorsed and enforced. Monitoring and control of tax expenditures are critical to make the system effective.

Regulate the Authorization and Administration of Tax Expenditures

Vertically, certain power to authorize and administer tax expenditures should be delegated to local governments. Horizontally, because a consistent regulation of tax expenditures is needed in the country, the ultimate power to authorize and oversee the administration of tax expenditures should be with the State Council. The State Council can specify projects, scope, content, means, procedures, and methods for assessment and approval, plus the rights, obligations, and liabilities for tax expenditures.

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10
Poland: Reforming Tax Expenditure Programs

Carlos B. Cavalcanti and Zhicheng Li Swift
World Bank

Poland recently began to reform its tax system. In December 1999, it announced a gradual reduction in the corporate income tax rate from 34 percent in 1999 to 30 percent in 2000, 28 percent in 2001, 24 percent in 2002, and 22 percent in 2004. At the same time, value added tax (VAT) and excise taxes are being harmonized with European Union (EU) directives, implying higher VAT rates on unprocessed foodstuffs, municipal services, and construction material, as well as higher excise tax rates on tobacco and alcohol. The reform of the law on personal income tax, however, has been delayed. There are concerns about the fairness of a rate reduction for higher-income taxpayers, and hesitation about the government's proposal to remove, or at least scale down, existing tax expenditure programs.

The personal income tax expenditure programs in Poland have received growing attention because of a dramatic increase in their numbers and because of the overall cost of these programs in recent years. Originally introduced in 1992, personal income tax expenditure programs were used to compensate lower-income taxpayers for the government withdrawal of price subsidies. However, over a relatively short period, the number and cost of these programs rapidly increased. By the end of 1998, the number had expanded to more than 200 programs, and the cost grew from 1 billion PLN in 1993 to over 5 billion PLN in 1998. Furthermore, most of the current personal income tax expenditure programs turned out to be highly regressive, benefiting higher-income taxpayers.

These unexpected results complicate efforts to reform the tax system. Tax expenditure programs have limited the impetus for personal income

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tax reform by lowering the effective personal income tax for higher-income groups. Moreover, these programs have limited the government's scope for unilateral tax rate reductions by narrowing the tax base. Indeed, while the marginal rates for the three income tax brackets are 40 percent (bracket III), 30 percent (bracket II), and 19 percent (bracket I), income tax exemptions and deductions allowed under tax expenditure programs lowered the effective rates applicable to these brackets to 25, 16, and 14 percent.[1] This means that tax expenditures have reduced the tax rates by almost 50 percent for the two highest-income tax brackets and by just under one-third for the lowest-income tax bracket.

This chapter analyzes these tax expenditure programs and makes a case for strengthening their administration. First, we present an overview of Polish tax expenditure programs, followed by an analysis of the economic efficiency, effectiveness, and equity of personal income tax expenditure programs; an estimation of the revenue forgone because of personal income tax programs; and a comparison of tax expenditures and direct expenditures with respect to funding available. Finally, we outline a mechanism for strengthening the administration of tax expenditures in light of Organisation for Economic Co-operation and Development (OECD) experience in industrial countries.

Tax Expenditure Programs in Poland

Tax expenditures are reductions in tax liabilities that result from preferential provisions in the tax code, including exemptions and exclusions from taxation, deductions, credits, deferrals, and preferential tax rates. These provisions may, in effect, be viewed as government spending channeled through the tax system. They are often used to achieve certain fiscal and political objectives and thus substitute for government direct expenditures.

Poland has a large number of tax relief programs for personal and corporate income taxes; VAT; and excise, agricultural, forest, and real estate taxes. These programs are primarily defined by the Act on Natural Persons' Income Tax (July 26, 1991), Act on Legal Persons' Income Tax (February 15, 1992), and Act on Goods and Services Tax and Excise Duty (January 8, 1993), plus other binding laws and regulations—though some also have been granted at the discretion of the tax administration. In this chapter, tax relief programs defined in the law, as well as those granted at the discretion of the tax administration, are regarded as tax expenditure programs.

By the end of 1998, Poland had more than 300 tax expenditure programs, of which more than 200 were related to personal income tax. The following list provides a breakdown of the types of tax expenditures and their legal basis (see Polish Ministry of Finance 1998):

- *Personal income tax*. Of the tax expenditures defined by act and by regulations, 125 are tax relief measures, 13 are exemptions from income, and 16 are deductions from tax. In addition, several types of tax relief are granted at the discretion of the tax administration.
- *Corporate income tax*. More than 40 statutory exemptions exist.
- *VAT*. Seventeen categories of statutory and nonstatutory exemptions are available.
- *Other taxes*. Several types of tax relief exist, which cover, among others, excise, agricultural, forest, and real estate taxes.

The administration of these tax expenditure programs is weak. For example, when new tax expenditure programs are proposed, sunset dates are not mandatory; thus, most have been approved without a statute of limitations. Moreover, there is no requirement for periodic review of costs and effectiveness. Out of the 200 personal income tax expenditure programs, revenue forgone has been estimated for only 18 programs (albeit the largest). None of the programs have had effectiveness reviews.

Not surprisingly, the increase in size and in number of tax expenditure programs has been nothing short of spectacular since their introduction in 1992. The estimates available for the 18 largest programs indicate an increase from just under 1 billion PLN in 1993 to over 5 billion PLN in 1998, for an average annual increase of over 32 percent (see Appendix B). In comparison, the average annual increase for direct spending was just 19 percent. One factor accounting for this impressive increase is that tax exemptions and deductions can be defined outside personal income tax law and regulations. As mentioned above, tax expenditure programs may be introduced at the discretion of the tax administration to accommodate individual cases.[2] Legislative approval is not required. These ad hoc exemptions of tax obligations granted by the executive branch make it impossible to measure the overall size of personal income tax expenditure programs, further contributing to the complexity and administrative intricacy of the Polish tax system.

The largest personal income tax expenditure program out of the 18 largest programs is for housing tax relief. Tax reductions for housing expenses account for 61 percent of the total cost of these 18 largest personal income tax expenditure programs, having increased over threefold from 0.9 billion PLN in 1993 to 3.1 billion PLN in 1998. Under this program, taxpayers can exclude expenses for construction of owner-occupied single or multifamily housing. The program also permits housing expenses to be deducted from income tax under the following circumstances: (a) purchase of land or paid transfer of the right of land for construction of a residential dwelling; (b) purchase or construction of a

residential house, building, or apartment in a housing cooperative; (c) conversion of an attic or other portion of a building or construction of an addition to a building to create a new residential dwelling; (d) payments on loans made by housing cooperatives; and (e) renovation of residential dwellings.

Economic Effectiveness, Efficiency, and Equity of Personal Income Tax Expenditure Programs

The literature on tax expenditure programs raises several concerns about efficiency, effectiveness, and equity (see, for example, McDaniel and Surrey 1985; Surrey 1973). For instance, tax expenditures can cause economic inefficiency if, to reduce tax liabilities, taxpayers engage in unprofitable activities or in activities they otherwise would have been unable to undertake. Economic efficiency also is affected by the way tax expenditures interact with tax rates. Finally, some tax expenditures may waste resources by complicating the tax code, thereby discouraging compliance.

The literature also acknowledges, however, that tax expenditure programs may be more effective than direct payments in stimulating some activities. An example is the itemized deduction for charitable contributions. The deduction might decrease government tax revenues, but this decrease is more than offset by an increase in support to charitable causes.

Another concern raised in the literature is that tax expenditures can contribute to a perception that the tax system is unfair since not all taxpayers qualify. For those who do qualify, the value of the tax benefit usually increases with taxable income. Tax expenditures can result in individuals with similar incomes and expenses paying different amounts of tax, depending on whether they engage in tax-subsidized activities. Different tax liabilities for individuals in similar circumstances run counter to horizontal equity. Tax expenditures also violate vertical equity if the cost of government is unfairly distributed among income classes. The disproportionate benefit of tax expenditures to higher-income persons may reduce the level of progressiveness of the tax structure that the statutory tax rate alone would achieve.

An analysis of Polish personal income tax expenditure programs reveals both horizontal and vertical inequities. These include (a) paying recipients to engage in activities they would have engaged in anyway, providing a windfall gain to some taxpayers; (b) narrowing the tax base and limiting the scope for tax reductions; (c) providing open-ended opportunities for tax exemptions and deductions, making it more difficult to project tax revenues; (d) adding complexity to tax laws and increasing the cost of enforcement; (e) reducing the government's accountability for its actions because costs of tax expenditure programs

are often invisible, plus failing to clearly assign responsibility for approving and supervising implementation of these programs; and (f) increasing the regressivity of income by excluding nontaxpayers, who generally are from the poorest segments of the population.

Analysis of the equity of Polish tax expenditure programs is based on data provided by the Ministry of Finance from tax returns, as well as estimates from the 18 largest personal income tax expenditure programs. The first observation is that in most cases low-income taxpayers were not able to access the benefits of these 18 programs. Table 10.1 provides the number of individual taxpayers in each income tax bracket applying for a reduction in their tax liabilities. In the first and lowest income bracket, only 39 percent of taxpayers applied for tax reductions, compared with over 80 percent in the (higher) second and the third income tax brackets. Two factors appear to account for lower-income taxpayers benefiting less from tax expenditure programs. First, they do not reach the expenditure threshold needed to apply for tax exemptions and deductions; second, they lack the time or access to professional advice needed to benefit from the opportunities provided in tax laws and regulations.

A second observation is that the housing tax relief program primarily benefits high-income taxpayers. This issue is important because housing tax relief is the largest tax relief program, accounting for 61 percent of total tax reduction of the 18 largest personal income tax expenditure programs in 1998. It also has increased more than threefold since its inception in 1998. According to table 10.2, in 1998 the average tax savings from the housing tax relief program was disproportionately distributed among high-income and low-income taxpayers. The savings for the high-income taxpayers was about 7 times the total average, or 10 times the savings enjoyed by low-income taxpayers. Conversely, the tax savings for low-income taxpayers was only 69 percent of the average tax savings for housing expenditures, or 10 percent of the tax savings enjoyed by high-

Table 10.1. Personal Income Taxpayers Applying Deductions in 1997

Personal income tax bracket	*Total number of taxpayers*	*Taxpayers applying deductions*	
		Number	*Percentage of total*
I	22,210,454	8,606,610	38.75
II	1,038,069	839,546	80.88
III	237,206	212,246	89.48
Total	23,485,729	9,658,402	41.12

Source: Polish Ministry of Finance 1998.

income taxpayers. Low-income taxpayers were unable to claim the tax exemptions and reductions—even those available for home renovation—simply because they were unable to reach the threshold necessary to apply for exemptions and deductions.

The regressive effect of tax expenditure programs reflected at the aggregate level (table 10.1) and in the housing tax relief program (table 10.2) also occurs in other programs. Appendix A provides the per capita tax reduction for three income brackets for the 18 largest personal income tax expenditure programs. In every case, high-income taxpayers benefit disproportionately more than low-income taxpayers in the tax reduction available. The only tax exemption for which low-income taxpayers appear to benefit more than higher-income taxpayers is the tax reduction for the expenditure on transportation of children to school outside of their place of residence. Nevertheless, the difference in tax reduction across income tax brackets is small, and the absolute amounts are a frac-

Table 10.2. Housing Tax Savings, 1993–98

Personal income tax bracket	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*
As percentage of total 18 tax expenditure programs (%):						
I	35	25	22	19	42	38
II	23	12	9	9	13	12
III	38	30	15	15	7	13
Total	96	67	46	43	62	63
Average tax savings for housing (PLN):						
I	225.7	183.6	207.3	251.4	314.0	329.5
II	494.6	370.8	468.2	741.0	868.1	1002.1
III	2,281.2	2,768.7	2,642.0	4,612.3	1,916.6	3,324.2
Total	442.7	374.5	347.7	468.5	407.2	477.3
Average housing tax savings as percentage of total average (%):						
I	51.0	49.0	59.6	53.6	77.1	69.0
II	111.7	99.0	134.7	158.2	213.2	210.0
III	515.3	739.2	759.9	984.4	470.7	696.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Note: In 1997, the personal income tax rates were reduced from 20, 32, and 44 percent to 19, 30, and 40 percent.
Source: Polish Ministry of Finance 1998.

tion (4.3 percent), for instance, of the amounts claimed under the larger housing tax relief program.

Finally, the regressive nature of the tax expenditure programs is reflected in the effect on personal income tax brackets. As indicated in table 10.3, tax exemptions and deductions allowed under the tax expenditure programs lowered the effective tax rate for higher-income taxpayers by at least 50 percent, while lower-income taxpayers enjoyed only a 29 percent reduction. The exemptions and deductions allowed to the two highest-income tax brackets accounted for 14 percent of total taxes paid in 1997, and a staggering 45 percent of the taxes paid by individuals in these two income tax brackets.

Cost Estimates of Personal Income Tax Expenditure Programs

There is no widely accepted operational methodology for estimating tax expenditures. Most OECD countries involved in tax expenditure administration define their costs as deviations from a benchmark tax structure. While this conceptual definition is well established, difficulties arise in making the definition operational. The main problem is that the definition of the benchmark tax structure—and thus the identification of tax expenditures—is inherently subjective. Reasonable differences of opinion always arise in the interpretation and categorization of tax measures, especially the treatment of inflation and possible double taxation.

Aside from these differences, the following are some methodological issues in estimating tax expenditures:

- *Historical estimates of tax expenditures*. Once the benchmark tax structure is established, tax expenditures can be identified and historical estimates obtained either from taxpayer returns or from using income tax models that simulate changes to the income tax system using the statistical sample of collected returns.
- *Projections of tax expenditures*. These projections must rely on an estimated relationship between tax expenditures and explanatory economic variables. Using these relationships, the values of the explanatory variables are projected into the future, permitting estimations of future expected tax expenditure values. Key explanatory variables generally are those reflecting the state of the economy, so any projections depend on the reliability of economic forecasts.
- *Aggregation of tax expenditure estimates*. Some argue that estimates for individual tax expenditures cannot be added together to determine the cost of several tax expenditure programs. There are two reasons for this: (a) the simultaneous elimination of more than one income tax

Table 10.3. Effective Rates of Personal Income Tax, 1997
(PLN thousand)

Income bracket (marginal tax rate)	*Taxable income*	*Exemptions from income*	*Deduction from tax*	*Actual income*[a]	*Tax paid*	*Effective rate of income tax (%)*[b]	*Effective rate/ Marginal tax rate (%)*
I (20%)	171,722,513	3,136,473	2,485,172	177,344,158	25,168,838	14	71
II (32%)	27,741,684	1,189,689	896,722	29,828,095	4,733,368	16	50
III (44%)	24,553,612	2,089,551	1,027,193	27,670,356	6,875,381	25	56

a. Actual income = taxable income + exemption from income + deduction from tax.
b. Tax paid as a percentage of actual income.
Source: Polish Ministry of Finance 1998; World Bank staff estimates.

expenditure would generate different estimates because of progressive income tax rates; and (b) given the interaction of some tax measures, the effect on revenue of eliminating two or more measures simultaneously would differ from taking the independently estimated numbers and simply aggregating them.

Without having established a benchmark tax system for the purpose of estimating tax expenditures, the Polish Ministry of Finance (1998) calculated the revenue forgone for 18 such programs from 1993 to 1998 using information from tax returns. The number obtained was only a fraction of the overall revenue forgone during that period, albeit a large fraction.

On the basis of the simple aggregate estimation rule and without consideration of the simultaneous effects, the cost of the largest 18 personal income tax expenditure programs has grown at an astonishing pace (see Appendix B).[3] The total revenue forgone for these 18 programs was over 5 billion PLN in 1998, growing from just under 1 billion PLN in 1993, at an annual average growth rate of over 32 percent during the period from 1993 to 1998. For the same period, direct budget spending grew at an average rate of 19 percent annually. The cost of tax expenditure programs thus has grown much faster than direct spending programs.

Strengthening the Administration of Tax Expenditure Programs

Strengthening the administration of tax expenditure programs is an important first step toward ensuring their effectiveness, efficiency, and equity. It also will help limit the costs of such programs, thus avoiding shrinking the tax base and complicating the tax system. This section examines these two issues. First, options are examined to raise the level of scrutiny of tax expenditure programs to levels to which direct spending programs are currently subject. Second, measures aimed at defining the opportunity costs of tax expenditure programs are discussed, highlighting their effects on the tax system.

The salient point about raising the level of scrutiny is that these programs enjoy a funding advantage over direct spending programs. Tax expenditures are fully funded before any discretionary programs, and they are open-ended entitlement programs. Once tax expenditures are enacted, they usually come under very little scrutiny, and only in rare instances have they been repealed. Tax expenditures also erode the revenue base available to fund direct spending programs. Finally, tax spending programs are not subject to systematic review, as opposed to direct spending programs that are appropriated annually. Indeed, tax

expenditures are described separately from their budgetary functions and are not included in the budget tables or added to the total outlay.

Some of the OECD member countries provide useful experiences on how to strengthen the administration of tax expenditure programs (box 10.1). They have established tax expenditure accounting systems, periodically reviewing their performance for economic effectiveness, efficiency, and equity. They also have treated these programs with the same scrutiny and control as direct spending programs, de facto limiting their expansion.

One useful example of successful tax expenditure administration is the Canadian experience of integrating tax expenditure programs into the budget review process, thereby including them in the overall expenditure envelopes for each government function (such as the economic development envelope and the social development envelope). At the planning stage, the federal tax and direct spending programs are divided into "envelope" targets. The minister responsible for the programs under these envelopes also is responsible for meeting this target. Each minister must cut back some programs if he or she wishes to expand others or to pursue new initiatives. This system avoids the risk of ministers escaping direct spending limits by proposing new or expanded tax expenditure

Box 10.1. Tax Expenditure Reporting in OECD Countries

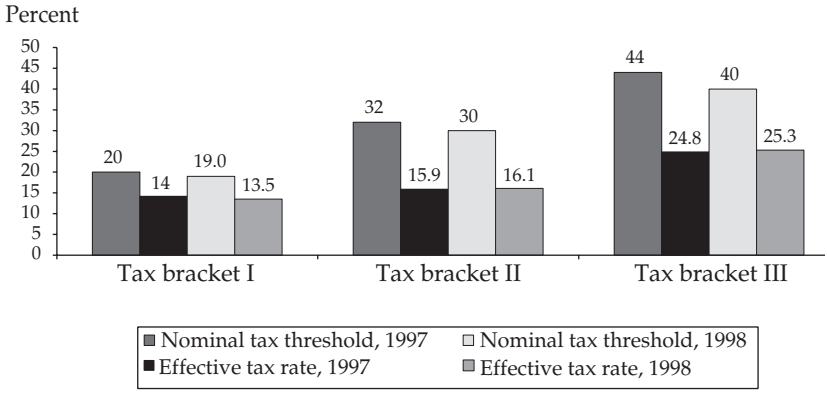
Tax expenditure reporting was first introduced in Germany and the United States in the late 1960s, with other countries following suit in the late 1970s (Austria, Canada, Spain, and the United Kingdom) and during the 1980s (Australia, Belgium, Finland, France, Ireland, Italy, the Netherlands, and Portugal). The periodicity of the reports on tax expenditure programs and their links to the budget process vary significantly across countries. In 7 of the 14 OECD countries that report on tax expenditure programs—Austria, Belgium, France, Germany, Portugal, Spain, and the United States—the authorities are legally obliged to produce tax expenditure reports. In most of these countries, the report is currently produced annually, the exceptions being Germany (every 2 years) and Italy (sporadic). In Australia, Belgium, Finland, France, Portugal, and Spain, the tax expenditure report is linked explicitly to the budget process. Austria and Germany produce subsidy reports that use a broad concept of subsidy, including all forms of support through both direct spending and tax expenditures. In the other countries, tax expenditure reports mainly have been produced as separate documents. In the United States, the tax expenditure report is produced as part of the government's budget but is not integrated into the budget process.

programs. Although ministers responsible for government functions still can propose new or expanded tax expenditure programs, the fiscal cost is debited against the overall spending limit envelope, which effectively provides a level playing field for direct spending programs and tax expenditure programs.

A second and equally important reason for subjecting tax expenditure programs to the scrutiny and control usually applied to direct spending programs is the effect of these programs on the tax system. The number and size of these programs affect the tax rates required to generate a desired net tax revenue. Figure 10.1 illustrates how tax expenditure programs reduce the effective tax schedule across income tax brackets, reducing overall tax revenue under the existing tax rates. Also, when these programs compete on a level playing field with direct spending programs, policymakers have a yardstick against which to measure the opportunity costs of these programs.

Strengthening Polish tax expenditure administration involves several systemic improvements: (a) defining a benchmark tax structure; (b) establishing sunset dates for tax expenditures; (c) estimating and forecasting their costs; and (d) reviewing their economic effectiveness, efficiency, and equity and comparing them with direct spending and subsidies. Taking these steps would contribute to limiting the expansion of tax expenditure programs and would reduce less desirable effects on the tax system. In Poland, tax expenditure programs have grown exponentially in both number and size since they were first introduced in 1992. From five such programs totaling 0.9 billion PLN in 1993, they grew to over 300 totaling slightly over 5 billion PLN in 1998. This growth is equivalent to a

Figure 10.1. Personal Income Tax Rates and Effective Tax Rates, 1997 and 1998



32 percent annual average increase. Also, the presence of tax expenditure programs adds to the complexity of the tax system, making the normative tax system more difficult for taxpayers to comprehend. The added level of difficulty, in turn, affects the progressivity of the tax system, as well as the compliance level. Integrating tax expenditure programs into the budget process should facilitate estimating the actual cost of these programs and should help make the overall tax system more transparent and comprehensible.

Notes

1. Before 1998, the rates applying to personal income tax brackets were 44, 32, and 20 percent, respectively.

2. These discretionary decisions on tax obligations by the executive branch include waiving tax obligations; postponing the time limit for paying taxes; spreading over installments tax payments or tax arrears, together with interest on arrears; and annulling tax arrears.

3. As discussed above, these results underestimate the revenue forgone under tax expenditure programs because they do not account either for the progressivity of income tax rates or simultaneity.

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Appendix A
Available Tax Relief per Tax Bracket
(*in PLN thousand*)

		1994	*1995*	*1996*	*1997*	*1998*
1	Losses from previous year	782.3	986.5	561.2	1,486.9	746.1
	Tax bracket I	349.3	400.2	283.4	278.8	183.3
	Tax bracket II	303.2	1,068.4	993.0	1,091.2	524.0
	Tax bracket III	1,708.1	1,802.4	1,283.2	10,901.7	5,772.7
2	Donation	54.1	248.8	287.8	129.8	104.1
	Tax bracket I	13.2	142.6	195.0	37.7	36.2
	Tax bracket II	25.0	367.5	549.5	167.7	143.1
	Tax bracket III	397.9	1,914.2	2,149.5	2,145.9	1,178.0
3	Social security premiums of taxpayer and taxpayer's employees	349.8	415.9	534.7	573.8	587.3
	Tax bracket I	199.8	252.1	353.4	382.9	402.6
	Tax bracket II	337.7	444.7	595.4	680.3	673.4
	Tax bracket III	611.5	855.4	1,115.3	1,399.4	1,445.0
4	Pensions, permanent burdens, alimony		303.8	265.5	1,028.4	1,557.3
	Tax bracket I		139.9	193.2	261.9	300.7
	Tax bracket II		715.2	731.1	1,255.4	1,138.9
	Tax bracket III			518.9	6,287.9	10,104.0
5	Membership fees for organizations that the taxpayer is required to join					67.9
	Tax bracket I					31.2
	Tax bracket II					70.1
	Tax bracket III					692.4

		1994	*1995*	*1996*	*1997*	*1998*
6	Rehabilitation expenditures	78.1	139.7	135.0	172.1	210.4
	Tax bracket I	61.8	72.3	128.4	166.7	197.3
	Tax bracket II	111.0	73.9	209.5	255.3	349.9
	Tax bracket III	277.2	2,601.6	83.3	280.4	654.6
7	Purchase of equipment and research aids and professional publications		84.3	98.8	112.9	139.4
	Tax bracket I		62.2	75.2	98.9	130.5
	Tax bracket II		90.3	120.6	139.5	149.2
	Tax bracket III		197.6	198.8	225.7	202.2
8	Investment expenditure in areas of high structural unemployment		6,459.0	6,939.2	11,940.3	16,335.0
	Tax bracket I					2,576.3
	Tax bracket II					
	Tax bracket III		6,459.0	6,939.2	11,940.3	17,211.7
9	Investment relief	6,112.3	6,354.9	6,743.3	6,155.7	7,681.7
	Tax bracket I	105.1		287.7	308.8	691.8
	Tax bracket II	410.6		1,009.4	893.0	967.9
	Tax bracket III	7,335.1		11,446.0	9,204.5	10,285.7
10	Relief for education of students	3,528.4	5,300.5	3,318.1	4,947.4	5,400.8
	Tax bracket I	6,123.2	4,634.6	1,726.7	2,955.6	2,271.6
	Tax bracket II	2,690.4	11,455.2	3,686.7	8,230.1	4,705.8
	Tax bracket III	2,610.8		5,418.6	14,398.2	11,080.6
11	Travel of children to school outside place of residence		48.5	52.4	50.0	63.4
	Tax bracket I		46.8	52.1	50.3	63.7
	Tax bracket II		58.4	51.3	41.8	58.5
	Tax bracket III		139.8	102.0	62.5	54.6
12	Education of children in non-public schools	119.0	225.4	145.8	212.0	230.3
	Tax bracket I	61.8	164.5	98.4	179.5	194.5
	Tax bracket II	129.8	271.5	226.5	374.9	313.7
	Tax bracket III	337.4	482.2	511.3	415.9	451.7

(*Appendix continues on the following page.*)

Appendix A (*continued*)

	1994	*1995*	*1996*	*1997*	*1998*
13 Paid health performances				62.8	68.3
Tax bracket I				59.2	63.7
Tax bracket II				74.7	80.1
Tax bracket III				88.0	112.8
14 Supplementary education and supplementary vocational training of taxpayer	37.5	96.2	107.2	104.7	114.5
Tax bracket I	34.7	89.4	103.1	106.2	111.9
Tax bracket II	47.0	126.7	112.5	98.6	127.3
Tax bracket III	60.7	158.3	227.5	84.4	139.2
15 Education of taxpayer in higher-education schools				224.5	278.1
Tax bracket I				219.9	273.7
Tax bracket II				279.1	319.5
Tax bracket III				297.1	320.8
16.1 Small housing relief (for house or dwelling renovation)	132.1	147.9	210.6	244.8	246.9
Tax bracket I	107.9	124.6	170.7	227.4	234.2
Tax bracket II	179.2	214.4	318.9	363.9	328.3
Tax bracket III	328.8	406.0	933.8	534.2	514.9
16.2 Large housing relief (for house or dwelling construction)	1,036.1	995.0	1,378.9	975.0	1,464.1
Tax bracket I	390.7	482.3	553.2	644.2	796.8
Tax bracket II	1,053.2	1,337.9	2,064.9	2,048.4	2,596.0
Tax bracket III	6,169.4	6,578.7	10,569.9	3,698.1	6,645.5
17 Stocks	318.5	363.0	571.1		
Tax bracket I	230.0	283.2	484.5		
Tax bracket II	326.3	386.7	642.3		
Tax bracket III	572.8	687.3	1,053.5		

Source: Ministry of Finance of Poland.

Appendix B
Analysis of 18 State Tax Expenditure Programs Direct and Expenditures
(*in PLN thousand*)

		Tax expenditures					*Direct expenditures*			
		1994	*1995*	*1996*	*1997*	*1998*	*1995*	*1996*	*1997*	*1998*
1	General public services (budget expenditure classification sections 91, 92, and 99) (no items)						5,219,287	6,912,328	8,514,748	9,840,851
2	Defense affairs and services (budget expenditure classification section 98) (no items)						5,249,403	6,003,348	7,275,010	8,358,713
3	Public order and safety affairs (budget expenditure classification section 93) (no items)						3,380,410	4,318,285	4,901,833	5,575,735
4	Education affairs and services (budget expenditure classification sections 79 and 81)	52,155	156,427	254,307	405,116	418,677	12,484,480	8,325,973	10,229,842	11,260,686

(*Appendix continues on the following page.*)

Appendix B (*continued*)

		Tax expenditures					*Direct expenditures*			
		1994	*1995*	*1996*	*1997*	*1998*	*1995*	*1996*	*1997*	*1998*
	Growth rate	391.7%	199.9%	62.6%	59.3%	3.3%		–33.3%	22.9%	0
	As percentage of direct expenditures		1.3%	3.1%	4.0%	3.7%				
	Personal income tax	52,155	156,427	254,307	405,116	418,677				
1	Relief for education of students	20,966	29,100	56,029	106,904	134,556				
2	Travel of children to school outside place of residence	0	14,143	22,525	21,503	24,665				
3	Education of children in nonpublic schools	13,765	18,322	23,634	40,875	39,639				
4	Supplementary education and supplementary vocational training of taxpayer	17,424	62,261	85,509	56,642	44,301				
5	Education of taxpayer in higher-education schools	0	0	0	99,227	98,138				
6	Membership fees for organizations that the taxpayer is required to join	0	0	0	0	13,741				
7	Purchase of equipment and research aids and professional publications	0	32,601	66,610	79,965	63,637				

5	Health affairs and services (budget expenditure classification section 85)	3,941	17,602	40,564	136,831	152,688	13,131,841	16,742,047	18,891,724	20,919,735
	Growth rate		346.6%	130.5%	237.3%	11.6%		27.5%	12.8%	0
	As percentage of direct expenditures		0.1%	0.2%	0.7%	0.7%				
	Personal income tax	3,941	17,602	40,564	136,831	152,688				
8	Rehabilitation expenditures (persons with disabilities)	3,941	17,602	40,564	67,380	72,294				
9	Paid health performances	0	0	0	69,451	80,394				
6	Social security and welfare affairs and services (86, 95)	321,289	324,235	438,522	655,249	860,318	23,831,401	28,374,317	32,121,716	34,509,824
	Growth rate		0.9%	35.2%	49.4%	31.3%		19.1%	13.2%	7.4%
	As percentage of direct expenditures		1.4%	1.5%	2.0%	2.5%				
	Personal income tax	321,289	324,235	438,522	655,249	860,318				
10	Social security premiums of taxpayer and taxpayer's employees	136,453	188,942	260,174	322,401	362,973				
11	Pensions, permanent burdens, and alimony	0	1,142	1,674	142,021	266,082				
12	Investment expenditure in areas of high structural unemployment		12,595	15,058	21,791	16,090				

(*Appendix continues on the following page.*)

Appendix B (*continued*)

		Tax expenditures					Direct expenditures			
		1994	*1995*	*1996*	*1997*	*1998*	*1995*	*1996*	*1997*	*1998*
13	Investment relief	172,079	121,556	161,616	169,036	215,173				
7	Housing and community amenity affairs and services (budget expenditure classification sections 70 and 74)	1,208,090	1,662,406	2,729,479	2,712,089	3,117,216	1,037,892	1,283,881	1,943,464	1,993,588
	Growth rate	31.4%	37.6%	64.2%	–0.6%	14.9%		23.7%	51.4%	2.6%
	As percentage of direct expenditures		160.2%	212.6%	139.5%	156.4%				
	Personal income tax	1,208,090	1,662,406	2,729,479	2,712,089	3,117,216				
14	Small housing relief (for house or dwelling renovation)	311,884	540,202	955,842	1,267,507	1,307,704				
15	Large housing relief (for house or dwelling construction)	896,206	1,122,204	1,773,637	1,444,582	1,809,512				
8	Recreational, cultural, and religious affairs, and services (budget expenditure classification sections 83, 87, and 88)	44,063	1,021,632	1,819,621	218,378	152,798	865,623	1,060,074	1,324,861	1,467,857
	Growth rate	191.7%	2218.6%	78.1%	–88.0%	–30.0%		22.5%	25.0%	10.8%
	As percentage of direct expenditures		118.0%	171.7%	16.5%	10.4%				

	Personal income tax	44,063	1,021,632	1,819,621	218,378	152,798			
16	Donation (for mixed purposes: education, health, social assistance, religious, public safety, etc.)	44,063	1,021,632	1,819,621	218,378	152,798			
9	Fuel and energy affairs and services								
	(no items)								
10	Agriculture, forestry, fishing, and hunting affairs and services (budget expenditure classification sections 40 and 45)						1,561,671	2,158,055	2,343,758	2,562,740
	(no items)								
11	Mining and mineral resource affairs and services, other than fuels; manufacturing affairs and services; and construction affairs and services (budget expenditure classification sections 01 and 31)						221,547	312,678	211,932	261,036
	(no items)								

(*Appendix continues on the following page.*)

Appendix B (*continued*)

	Tax expenditures					Direct expenditures			
	1994	*1995*	*1996*	*1997*	*1998*	*1995*	*1996*	*1997*	*1998*
12 Transportation and communication affairs and services (budget expenditure classification sections 50 and 59) (no items)						1,350,406	1,988,206	2,225,017	3,227,383
13 Other economic affairs and services; general labor affairs (budget expenditure classification section 96)	140,434	367,650	915,029	0	0	2,738,220	2,510,856	2,695,799	2,129,184
Growth rate		161.8%	148.9%				–8.3%	7.4%	–21.0%
As percentage of direct expenditures									
Personal income tax	140,434	367,650	915,029	0	0				
17 Bonds (capital gains and dividends)	140,434	367,650	915,029	0	0				
14 Expenditures not classified by major group (budget expenditure classification sections 61, 64, 66, 77, 89, 90, 94, and 97)		24,399	155,853	281,424	351,655	20,090,839	28,851,652	32,995,984	37,648,476

	Growth rate	81.4%	10.9%	538.8%	80.6%	25.0%		43.6%	14.4%	14.1%
	As percentage of direct expenditures		0.1%	0.5%	0.9%	0.9%				
	Personal income tax	21,998	24,399	155,853	281,424	351,655				
18	Losses from previous year	21,998	21,443	17,807	68,991	48,804				
19	Other	0	2,956	138,046	212,433	302,851				
	Total	1,791,970	3,574,351	6,353,375	4,409,087	5,053,352	90,941,473	108,529,022	125,463,756	139,494,772
	Growth rate		99.5%	77.7%	–30.6%	14.6%		19.3%	15.6%	11.2%
	As percentage of direct expenditures		3.9%	5.9%	3.5%	3.6%				
	As percentage of personal income tax revenue	10.3%	15.2%	24.3%	14.7%	14.6%				

Source: Ministry of Finance of Poland.

Appendix C
Poland: Estimates of Revenue Loss from Tax Expenditures, 1998
(*14 tax exemptions from income tax plus 18 tax relief programs, in PLN thousand*)

Tax expenditure	*PLN*
1. Scholarships for secondary school students	16,999
2. Scholarships for high school students	381,390
3. Scholarships for students with good results	3,189
4. Scholarships for foreign students and students who study overseas	39,513
5. Social assistance in cash	1,603,801
6. Family benefits	4,513,625
7. Children allowance	541,410
8. Funeral benefits	696,973
9. Benefits for veterans, soldiers, miners, and war camp workers	678,537
10. Alimony	635,340
11. Prepayment for buying a car	60,000
12. Benefit for flats	497,331
13. Flat expenses for professional soldiers	78,328
14. Expenses on uniforms for soldiers	223,884
Sum of above 14 programs	9,970,320
Estimated revenue loss from the above 14 programs at 19% tax rate	1,894,361
Sum of 18 personal income tax relief programs from appendix B, according to Article 27a.	5,053,352
Total	6,947,713
Total state direct expenditures	139,494,772
Total state personal income tax revenue	34,644,500
Revenue loss from personal income tax (32 programs)/ direct expenditures	5.0%
Revenue loss from personal income tax (32 programs)/ total state personal income tax revenue	20.1%

Source: Ministry of Finance of Poland.

11
Managing Tax Expenditures: Policy Options

Hana Polackova Brixi
World Bank

This book illustrates that countries treat tax expenditures differently. Although agreement has been emerging at the conceptual level, there are no generally accepted policy options and methodologies for reporting tax expenditures, for evaluating their benefits and fiscal and economic costs, or for bringing them into the usual framework for government decisionmaking and scrutiny. Many industrial countries have standardized their tax expenditure reporting. Several have taken steps toward analyzing the benefits and broad economic and direct fiscal costs of tax expenditures. Few have tried to manage tax expenditures strategically, in a broader framework, such as through the annual government budget process. It is noteworthy that some of the emerging good practices in tax expenditure management have appeared in countries known for their prudent and strategic management of contingent liabilities, including Canada, the Netherlands, and the United States, which are discussed in this book.[1]

As observed in numerous countries, unless tax expenditures are exposed to adequate scrutiny, they may invite fiscal opportunism. Tax expenditures bear similarity to government contingent liabilities because they represent instruments of fiscal policy that require no cash spending at the time of issuance. Contingent liabilities show their fiscal cost only later, in the form of sudden claims on the government budget. The true fiscal cost of tax expenditures is less visible, in the form of unrealized government revenues. Contingent liabilities have been known for providing politicians with an opportunity to implement various initiatives without submitting to the level of competition applied to budgetary expenditures and without revealing their true fiscal costs. Similar attributes apply to tax expenditures.

Without careful management, tax expenditures may generate negative fiscal and economic effects. Over the past 40 years, industrial as well as developing countries have learned that tax expenditures tend to slowly erode the tax base, reduce the effective tax rate, and ultimately weaken government fiscal balance. As the example of Poland (chapter 10) has shown, tax expenditures may also be regressive in their distributional effect. Furthermore, discussion in the book also pointed out that tax expenditures may not be the most efficient instrument for achieving their specified objective. Depending on their design, tax expenditures, like contingent liabilities, may generate moral hazard in their potential beneficiaries' behavior and bias behavior in ways that are not in line with government objectives or beneficial to the country's development.

Of course, not all tax expenditures are the result of politics and fiscal opportunism and not all are ineffective in delivering on their specified government objectives. Banning or unduly restricting tax expenditures would not be sensible. Instead, certain policy options for dealing with tax expenditures need to be developed to expose tax expenditures to adequate analysis and scrutiny. In relative terms, adequate analysis and scrutiny would imply applying the same level of attention, transparency, and accountability that is applied to other types of government programs, including direct spending and contingent liabilities.

Proposed Policy Options

The policy options proposed here build on the discussion presented in this book and are adapted to suit the needs and capacities of developing countries. These options are based on existing methods and are broadly consistent with standard practices of budget management generally used by developing and transition economies.

Policy option 1: The government should periodically compile an inventory of tax expenditures and report on their nature, legal basis, expected and actual effects, and past and likely future fiscal costs.

In managing public finances, the government must be aware of its tax expenditures and take them into account in its fiscal projections, budget plans, and policy considerations. It seems reasonable that governments should annually report tax expenditures. To serve as a useful input for decisionmaking, the tax expenditure report should list every tax expenditure in force and, for each, should discuss its objectives, expected and actual effects, legal basis and characteristics, and past and likely future fiscal costs. There is no uniform practice for tax expenditure reports. Their purpose, legal status, relationship with the government budgetary framework, frequency, and format vary across countries. Differences

across countries also appear in classification of tax expenditures and methods to estimate cost and benefits. In this respect, this book presented several examples of good practice in tax expenditure reporting in Organisation for Economic Co-operation and Development (OECD) countries.

In estimating the fiscal cost of tax expenditures, developing countries may favor simplicity and clarity to exactness and academic rigor. Since the estimation would necessarily be based on arbitrary assumptions and judgments as much as on factual information, the analysis will gain in credibility and usefulness if all assumptions and judgments are clearly stated and if various possible scenarios are discussed rather than if a single figure is provided.

Making the tax expenditure report public would have the benefit of introducing broader scrutiny. Just as for contingent liabilities, the tax expenditure report may be appended to government financial statements or budget documents, or it may be published as a freestanding document. Ideally, the tax expenditure report also would be audited by the national supreme audit institution. Auditing could verify the completeness of coverage and truthfulness of description, as well as provide comments on the quality and realism of the analysis.

Policy option 2: Annual budgetary documents, or other core fiscal policy documents, should discus tax expenditures and their fiscal costs and likely socioeconomic effects in the context of the government's overall fiscal policy analysis.

Building on the comprehensive report of tax expenditures discussed above, the government should internalize the analysis of the existing tax expenditures in its policy decisionmaking. Government policy priorities tend to evolve, so the relative contribution of the existing tax expenditures to these priorities evolves accordingly. As in the case of direct spending, the government may need to modify or to discontinue tax expenditures that have become misaligned with government priorities. Similarly, as the tax system is evolving, its position between neutrality and incentives is changing. To adjust tax expenditures in a timely and systematic fashion, the government may wish to incorporate the analysis and scrutiny of all existing tax expenditures in the annual budget process. Country experience suggests that analysis may be easier and more effectively done if explicit sunset clauses and evaluations of effects are required directly in the tax expenditure provisions.

Policy option 3: Before deciding on a new tax expenditure, the government should clearly specify its objective, assess how this objective fits with policy priorities, evaluate alternative instruments for achieving the objective,

and design the new tax expenditure so as to minimize its possible negative effects.

Because launching a new tax expenditure involves no cash being spent, discipline and hard budget constraints are more difficult to establish. A good mechanism for scrutiny is needed to ensure that revenue lost is not wasted and that incentives are not distorted to the detriment of the country's economic performance or social equity.

During the process of deciding on a newly proposed tax expenditure, scrutiny could be built around five questions, which are illustrated below using a housing tax credit proposal.

1. *What is the root of the problem that needs to be corrected?* A good understanding of the problem that needs to be addressed is a necessary condition for designing proper government action. Depending on the root of the problem, the objective of promoting low-income housing in urban areas, for instance, may or may not require the provision of a housing tax credit. Investing in physical and social infrastructure in rural peripheries near the points of economic activity or liberalizing the housing and land markets may be more effective in addressing the root of the problem.
2. *Does the objective belong to the government's current policy priorities?* This question is about allocative efficiency. In the context of government policy priorities, how much of public resources should be devoted to low-income housing, for instance, compared with universal basic schooling, universal basic preventive health care, and rural access roads, which are also competing for budget allocation? Would support for low-income housing be likely to obtain budget allocation if it was competing against the existing claims on the budget? What would be the maximum amount conceivably allocated to low-income housing from the budget in the years ahead?
3. *What is the most efficient way to achieve the stated objective?* This question is about finding an instrument that would accomplish the objective while minimizing distortions in the economy and fiscal costs. For example, if financial incentives need to be provided, would it be more efficient to offer budget subsidies or to establish a credit guarantee scheme instead of offering a housing tax credit?
4. *What are the likely fiscal and socioeconomic effects?* This question links macroeconomic and behavioral analysis. How many applicants are likely to qualify for the housing tax credit each year? What will be the effect on government revenues in the years ahead? What will be the effect on saving and investment behavior in the economy? What will be the effect on the sector and spatial allocation of investment? What will be the effect in income distribution across localities and house-

holds? What may be the opportunity cost and the associated forgone socioeconomic return?

5. *How should the new tax expenditure be designed to minimize its possible negative effects?* Building on the behavioral analysis illustrated in the fourth question, this question is about fine-tuning the specifications of the proposed tax expenditure so as to maximize its allocation and operational efficiency and to minimize its fiscal cost. For the housing tax credit, the following questions should be answered: How should low-income housing be defined? How should eligibility for the tax credit be determined so that access is equitable? How do the fiscal costs and profile of applicants change with different levels of the tax credit cap? What kind of public awareness campaign and advisory assistance are needed for the program to reach the targeted disadvantaged groups? How can possible abuse under the program be detected?

As suggested above, to properly evaluate and scrutinize performance under the new tax expenditure in a timely way, depending on its objective, each new tax expenditure program could be launched with a clause in the form of a specified termination date. Continuation of the program beyond this date could be made dependent on prior approval by the government.

Policy option 4: A new tax expenditure should be approved in the context of the annual budget process, with the expected cost of the proposed tax expenditure competing against proposed spending items and the expected cost of proposed programs of government contingent support.

In addition to bringing existing expenditures into the budget evaluation process (which was suggested in policy option 2), the annual budget process would also provide an effective scrutiny mechanism for newly proposed tax expenditure programs. As part of the budget process, proposals for launching new or renewed tax expenditure programs could be weighted against proposals for budget expenditures or for extending government guarantees. Moreover, internalizing the decisionmaking about tax expenditures and contingent liabilities in the budget process would also promote cash neutrality in government decisionmaking—that is, impartiality with respect to whether actual cash is spent or whether cash-based budget deficit is affected when a new program is launched. An important feature of this approach is that extending the scope of the budget process beyond budget expenditures would encourage decisionmakers to recognize the expected fiscal cost of alternative government programs, even without the implementation of comprehensive, accrual-based accounting and budgeting systems.

The examples discussed in this book have indicated, however, that governments may find it difficult to expand the scope of the budget process so as to ensure adequate consideration for alternative spending and nonspending programs and for their possible trade-offs. Innovative approaches may need to be worked out to make fiscal policy decision-making more cohesive and to overcome the possible existing institutional obstacles, such as the division of revenue and spending responsibilities among a number of separate government agencies and legislative committees. A second best, easier-to-implement option may be to introduce budgetary ceilings on spending by means of tax expenditures (similarly, budgetary ceilings for government guarantees newly issued and outstanding are second best to comprehensive fiscal policy decisionmaking in the case of contingent liabilities).

Conclusions

Putting policy options in place for strategic and prudent management of tax expenditures may appear to be a very time-consuming and difficult task. Many developing as well as industrial countries find it challenging enough to establish good policy options for strategic and prudent management of the budget alone.

This book suggests that the management of the budget, contingent liabilities, and tax expenditures share a common ground. In fact, significant improvements in the management of public finances—and possibly even in country development—can be achieved by extending the standard principles for sound budget management beyond cash expenditures, so that they also apply to tax expenditures and contingent liabilities. For tax expenditures, there would be several methodological and technical issues, including collecting the information on existing tax expenditures, estimating their fiscal and broader socioeconomic effects, and incorporating the information into the government policy analysis and documents. Working on these issues can become part of the evolving fiscal management processes—a by-product rather than a prerequisite of a reform.

The challenges of managing tax expenditures and possible fiscal and overall socioeconomic risks, however, are important arguments in favor of minimizing their use.[2] Particularly in countries with less developed fiscal institutions and government institutional capacity, the use of tax expenditures may best be limited to cases of rectifying market failures.

Notes

1. For detailed discussion of government contingent liabilities, see Brixi and Schick (2002). *Contingent liabilities* are defined as obligations triggered by a dis-

crete but uncertain event. They are explicit or implicit, depending on the nature (legal versus political or moral) of government commitment. Most common examples include government credit guarantees, government insurance programs, and government contingent support programs to bail out troubled banks or state-owned enterprises.

2. Easson and Zolt (2003) and Zee, Stotsky, and Ley (2002) discuss the possible justification for the use of tax expenditures in developing countries.

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Properly used, tax expenditures can play an important role in implementing countries' economic and social policies. But they often go unnoticed because they take many forms of revenue forgone, from tax exemptions to tax credits. Without subjecting tax expenditures to the same scrutiny most countries apply to the spending sides of their budgets it is impossible to know the cost and efficiency of tax expenditures or whether they might be better allocated.

Tax Expenditures—Shedding Light on Government Spending through the Tax System discusses conceptual and methodological issues relating to tax expenditures, provides a framework for evaluating them, offers case studies on government treatment of tax expenditures from developed and transition economies, and outlines generally applicable policy frameworks. It also provides in individual chapters case studies of the treatment of tax expenditures in Australia, Belgium, Canada, China, the Netherlands, Poland, and the United States. Each chapter presents how the nation defines tax expenditures and the corresponding benchmark tax system. Some chapters also examine specific topics, such as methods for estimating and evaluating tax expenditures for policy analysis, how this analysis can contribute to policy debate, and how to budget for the cost of tax expenditures. The experiences of two transition economies, Poland and China, illustrate the consequences of implementing tax expenditure policies without an adequate institutional and analytical framework.

A valuable addition to global knowledge on fiscal risk and responsibility issues, this book will assist governments and development partners in improving fiscal transparency and financial stability, and in continuing progress in broader economic and social areas.

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