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Colombia
Country Economic Memorandum: Productivity Growth and Sustained Economic Development

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Department III
Country Division I

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FISCAL YEAR

January 1 to December 31

CURRENCY EQUIVALENT

Currency Unit: Peso (Col $)
Exchange Rate Effective December 31, 1988.
US $1.00 = Col $335.86
Col $1.00 = US $0.003

ABBREVIATIONS

BR	- Banco de la Republica
CARBOCOL	- Carbones de Colombia S.A.
CAV	- Corporacion de Ahorro y Vivienda
CEC	- Cuenta Especial de Cambios
CF	- Corporaciones Financieras
CFC	- Companias de Financiamiento Comercial
DANE	- Departamento Administrativo Nacional de Estadistica
DNP	- Departamento Nacional de Planeacion
ECOPETROL	- Empresa Colombiana de Petroleos
FCE	- Fondo de Capitalizacion Empresarial
FEN	- Financiera Electrica Nacional
FFAP	- Fondo Financiero Agropecuario
FFI	- Fondo Financiero Industrial
FIP	- Fondo para Inversiones Privadas
FNC	- Fondo Nacional del Cafe
ICOR	- Incremental Capital Output Ratio
ISE	- Inversiones Sustitutivas del Encaje
PROEXPO	- Fondo de Promocion de Exportaciones
TC	- Titulos Canjeables
TFP	- Total Factor Productivity

This Report is based on the findings of the mission which visited Colombia between October 1, 1988 and October 15, 1988. The mission was led by Mr. E. C. Hwa (Senior Economist, Colombia Division), and comprised Messrs. Mansoor Dailami (financial economist), William Easterly (fiscal economist), Shamsher Singh (YF), and Eduardo Wallentin (consultant). Mr. Fernando Clavijo developed a trade model for the Report, but did not participate in the mission. Ms. Hazel Amselle coordinated the entire production process of the report. Additional assistance was provided by Ms. Diana Cortijo and Ms. Laura Santalla.

COLOMBIA - COUNTRY DATA SHEET

AREA: 1139 (thou. sq. km.) POPULATION: 30 mn. Rate of Growth: 1.8

DENSITY: 26.3 per sq. km.

POPULATION CHARACTERISTICS
Crude birth rate (per 1000): 27
Crude death rate (per 1000): 7

HEALTH
Infant mortality (per 1,000 live births): 47
Population per physician: 1,900
Population per hospital bed: 600

ACCESS TO SAFE WATER
% of population - urban: 89
- rural: 30

ACCESS TO ELECTRICITY
% of population - urban: 88
- rural: 13

NUTRITION
Calorie intake per day: 2598
Per capita protein intake (g/day): 57

EDUCATION
Adult literacy rate (%): 88
Primary school enrollment
(%) of relevant age group: 117

GNP per capita (US$, FY87) 1/: 1220

GROSS DOMESTIC PRODUCT FY88

	US$ Mn	%	ANNUAL RATE OF GROWTH (%, FY75 prices) FY75-80	FY80-85	FY86	FY87	FY88
GDP at Market Prices	39573	100.0	5.4	2.2	5.1	5.4	4.2
Gross Domestic Investment	8215	20.8	8.5	-0.2	5.1	5.4	7.8
Gross National Saving	7202	18.2	..	..	..	..	..
Current Account Balance	-352	-0.9					
Exports of Goods, NFS	6648	16.8	5.7	1.6	14.7	12.0	6.7
Imports of Goods, NFS	6314	16.0	12.2	-1.6	2.8	5.0	12.0

OUTPUT EMPLOYMENT AND PRODUCTIVITY IN FY87

	Value Added US$ Mn	%	Labor Force Mn	%
Agriculture	7891	21.6	3.5	34
Industry	11033	30.2	2.5	24
Services	17609	48.2	4.3	42

GOVERNMENT FINANCE

	Consolidated Public Sector Col$ Bn		Percent of GDP		General Government Col$ Bn		Percent of GDP	
	FY87	FY88	FY87	FY88	FY87	FY88	FY87	FY88
Current Receipts	3229	4233	36.3	35.8	935	1207	10.5	10.4
Current Expenditure	2598	3523	29.2	30.1	770	1049	8.6	9.0
Curent Surplus	631	710	7.1	5.7	165	158	1.9	1.4
Capital Expenditure	754	1017	8.5	8.6	207	319	2.3	2.8

1/ World Bank Atlas methodology

COLOMBIA - COUNTRY DATA SHEET

MONEY, CREDIT & PRICES	FY84	FY85	FY86	FY87	FY88
	(Bn. of Col$ outstanding at end of period)				
Broad Money Supply	1199	1617	2652	2658	3279
Bank Credit to Public Sector	216	226	218	329	549
Bank Credit to Private Sector	286	248	296	345	365 (nov)
	(Percentage of Index Numbers)				
Broad Money as % of GDP	31	32	31	30	28
Consumer Price Index (FY78=100)	351	436	519	644	825
Annual percentage changes in:					
Consumer Price Index	18	23	21	24	28
Bank Credit to Public Sector	..	9	-6	55	64
Bank Credit to Private Sector	..	17	23	16	6

BALANCE OF PAYMENTS

	FY85	FY86	FY87	FY88
	(millions of US$)			
Exports of Goods, NFS	4744	6645	6426	6648
Imports of Goods, NFS	5467	5325	5603	6314
Resource Gap (deficit = -)	-683	1320	823	334
Interest Payments (net)	1293	1315	1399	1402
Other Factor Payments (net)	91	224	350	174
Net Current Transfers	461	784	1001	896
Balance on Current Account	-1586	565	75	-352
Direct Priv. Foreign Investment	1016	562	287	187
Net MLT Borrowing	1335	1635	-92	479
Disbursements	2167	2756	1321	2572
Amortization	832	1121	1403	2093
Subtotal (Dir.Inv. + Net MLT)	2351	2197	205	666
Other Capital (net) and Capital n.e.i.	-492	-1207	-364	24
Increase in Reserves (+)	278	1465	-24	338
Gross Reserves 1/ (end-year)	2313	3F12	3484	3822

MERCHANDISE EXPORTS (AVG: FY85-88)

	US$ Mn	%
Coffee	1921	38.8
Hydrocarbons	831	16.8
Coal	229	4.6
Minor exports	1470	29.7
Manufactured	763	15.4
Other Commodit.	494	10.0
Total	4945	100.0

EXTERNAL MLT DEBT, DECEMBER 31, 1988

	US$ Bn
Public Debt, incl. Guar.	14035
Non-Guar. Private Debt	1538
Total Outst. & Disbursed	15573

NET DEBT SERVICE RATIO FOR FY88 2/

	%
Public Debt, incl. Guar.	216.5
Non-Guar. Private Debt	21.9
Total Outst. & Disbursed	238.4

IBRD/IDA LENDING (Dec. 31, 1988)

	IBRD	IDA
	(US$ Bn)	
DOD - FY88:	3898	16
DOD - FY87:	4111	17
Outstanding incl. Undisbursed FY87:	5484	17

RATE OF EXCHANGE

US$1.00 = Col$

	FY85	FY86	FY87	FY88
Annual Averages	142	194	243	299
End of Period	172	219	284	336

1/ Includes gold holdings

2/ Debt service, net of interest earned on foreign reserves, as a percentage of Exports of Goods and NFS.

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Summary and Conclusions

1. This report analyses economic developments in Colombia in the 1980s and reviews the prospects for vigorous and sustained economic growth in the 1990s and beyond. Particular attention is paid to the fiscal balance of the economy, the behavior of private investment and the contribution of total factor productivity to growth. The report argues that it is only through improvements in productivity growth that Colombia will be able to overcome constraints imposed by the shortage of domestic and foreign savings and reach, and sustain, the level of economic growth necessary to reduce unemployment and alleviate poverty.

2. The report reviews macroeconomic developments in Colombia since the early 1980s, focusing on the 1984 economic adjustment program and its effects on macroeconomic performance during 1985-88 (Chapter I). Given the important role played by fiscal policy in the economic adjustment program, the report reviews in detail the fiscal adjustment achieved so far and assesses the appropriate size of a sustainable fiscal deficit that is consistent with the Government's desire of reducing interest rates and the current inflation rate to 20-22% by 1990 (Chapter II). The report examines several long-term development issues critical to employment generation, poverty alleviation and sustained economic growth without inflation. These include the sustainability of the recovery of private investment (Chapter III), the relationship between economic growth and employment (and poverty alleviation), the sources of economic growth and the implications of these for Colombia's future development strategy (Chapter IV). The issue of the continued redirecting of development policies towards raising the efficiency of resource use (as measured by total factor productivity growth) is analyzed as the key component of economic growth and employment strategy in the next decade and beyond (Chapter V). Conclusions and key findings of the report are summarized below.

A. Economic Adjustment Since 1984

3. The 1984 economic adjustment program, whose major domestic policy measures included the drastic reduction of the fiscal deficit, sharp devaluation and modest liberalization of external trade, restored internal and external balances of the economy. The (operational) fiscal deficit was reduced sharply from a peak of 6.8% of GDP in 1984 to 1.4% by 1987. After a brief period of recovery, the economy grew strongly, averaging more than 5% per year during 1986-87. As a result, the unemployment rate fell sharply by about 4 percentage points to around 10% by December 1987. The current account balance improved from a deficit of 6.0% of GDP to near balance and international reserves recovered to above 5 months of imports of goods and services by end-1987. However, during 1988, inflation accelerated to 28.2% -- the highest level in recent years-- while economic growth slowed to 3.7% of GDP (partly ascribable to exogenous causes such as guerilla sabotage of oil pipelines and restricted coffee export quotas) and there was no further significant reduction in the unemployment rate. In order to sustain the strong economic growth momentum of the last few years over the medium-term,

economic policy would need to focus more sharply on supply-side (i.e. resource efficiency) issues, in addition to continued good management of macroeconomic balances. This means that the economic policy setting needs to deal with the issue of stagnating total factor productivity growth as well as with the issue of modest levels of investment and savings.

B. Fiscal Policy

4. A review of fiscal policy unambiguously indicates that significant fiscal adjustment was achieved during 1985-87. Over the period 1984-87, the nonfinancial public sector (operational) deficit was reduced by about 5 percentage points of GDP, and the primary deficit was reduced by about 6 percentage points of GDP, half of which was due to improved saving and the other half due to cutbacks in investment. The Central Bank deficit was insignificant.

5. When estimated from the financing side, the net financing requirement of the Central Bank was found to be greater, about 1% of GDP. And the net financing requirement of the consolidated nonfinancial public sector was also higher than that indicated by the operational deficit (about 1.5% of GDP in 1985-86). The financing estimate may well be more comprehensive, since the operational deficit is based on a less than complete sample of public enterprises, local governments, and nationalized public entities. The inflation-adjusted net financing requirement of the public sector fell from 6.0% of GDP in 1985 to 2.5% in 1987. In addition, a major change in the composition of public deficit financing is also evident over the period. While in 1985 net external lending was still accounting for about half of total financing, it was drastically reduced in 1986-87 and replaced by internal financing. Monetary financing was the most consistently important instrument of domestic financing, accounting for about 1.7% of GDP on average during 1985-87, and contributed to the recent acceleration in inflation.

6. Although the fiscal adjustment (in flow terms) was impressive, it fell short of reducing total public debt as a percentage of GDP over 1984-87, even after correcting for the effect of currency devaluation on dollar-denominated instruments. Perhaps because of this behavior of public debt, real interest rates remained very high, while inflation accelerated. If this interpretation is correct, further reductions in interest rates and inflation would require continued reductions in the fiscal deficit to the point the stock of public debt itself begins to decline as a percentage of GDP. However, the required deficit reductions do not seem out of reach. This suggests that in addition to the commendable efforts shown so far, continued policy initiatives would be very helpful in confronting the fiscal challenges of the 1990s.

C. Private Investment and Financial Sector Policies

7. After a long period of decline, private investment (as a percentage of GDP), stimulated by improved macroeconomic conditions, staged a recovery during 1986-87. Despite this recovery, however, private investment (as a percentage of GDP) in 1987 was below the level attained in the early 1970s. In order to sustain the recovery in private investment and to improve its

efficiency, the Government will need to continue improving macroeconomic stability (e.g., a stable and low inflation, and a stable and appropriate real exchange rate) under which efficient investment planning can be undertaken. Furthermore, the Government will need to continue to implement its reforms in several financial policy areas.

8. First, after having made commendable efforts in cutting interest subsidies on development credits channeled through the Central Bank, the Government will need to continue phasing out the remaining interest subsidies by increasing the real interest rate paid on forced investment (which is negative) and by equating the rate on development credits to that on commercial loans. This should further lower the current high spread between commercial lending and deposit rates (nearly 10 percentage points), increase the efficiency of private investment by revealing better the true opportunity cost of an investment project, and lower the incentive to use debt instruments to finance private investment, thereby contributing to the development of long-term capital markets.

9. Second, the financial sector should be subjected to more competition both internally and externally in order to raise its efficiency and reduce the high intermediation costs. The draft legislation submitted by the Government to Congress for reopening the financial sector to foreign investment should bring some of the desired effects. Third, the phased-in elimination of the deductibility of interest payments on debt (from taxable corporate income) under the 1986 tax reform should correct the long-standing bias against equity financing. But this reform measure does not appear to be neutral with respect to the cost of capital, despite the simultaneous adoption of several measures to achieve neutrality, such as the lowering of corporate income taxes and the granting of more generous depreciation rules to corporations. It is estimated that the tax reform will raise the cost of capital by about 6-8 percentage points by 1996, thus adding significantly to the already high marginal cost of capital (estimated at 16% in 1987) and thereby dampening investment incentives. Perhaps due to this consideration, the Government froze interest deductions for a four-year period: 1988-91 through a decree announced at the end of December 1988. This development further suggests the need to reduce the high real interest rates in order to continue on the path of tax reform.

10. In the 1990s, when the external financial constraint is likely to be binding, the level of private investment will be ultimately constrained by domestic savings. Unless private savings can be raised substantially, the competition for funds between the public sector and the private sector could be acute. Thus public investment projects should be carefully crafted to complement private investment and overall fiscal stance should be such as to avoid a credit squeeze on private investment. Finally, improving financial and fiscal incentives might not be adequate to generate the much needed dynamic response of private investment, if entrepreneurs themselves do not need to modernize their plants and equipment because of the lack of competition. This would be the situation if they are excessively protected by import restrictions and highly controlled by regulatory policies. This leads to the final recommendation: further external trade liberalization and domestic industrial deregulation measures need to be taken in order to increase competition among firms.

D. Productivity Growth, Employment, and Development Strategy

11. An analysis based on economic growth accounting shows that growing inputs of capital have been the major source of economic growth in Colombia since 1950. By contrast, the contribution of total factor productivity to economic growth has been relatively small and has been declining since the mid-1970s at a rate of approximately 0.2% per annum. If this trend continues, the inefficiency of resource use will prove to be a major constraint to economic growth over the long-run.

12. The strong rate of economic growth during 1986-87 increased employment sharply. Most of the gains in employment were in the service and informal sectors. The manufacturing sector, for instance, absorbed only 4.6% of urban employment in 1986, as compared with 6.0% in 1980, despite the strong recovery in this sector's growth rate and in exports of manufactures. The recent economic recovery has not altered this unbalanced pattern of employment growth, which tends to aggravate urban poverty. Thus, after several years of strong economic growth, employment strategy should be shifted from emphasizing macroeconomic growth to reducing the high structural unemployment rate in order to achieve further gains in employment and more balanced employment growth. This would require solving some deep-seated structural problems. For example, labor regulations ("cesantía") permit an excessively high non-wage labor cost, which is a major contributor to the high rate of structural unemployment in the formal labor market. The protective trade regime and highly concentrated industrial structure encourage industries to use production techniques that do not adequately utilize domestic labor. These factors might have accounted for the underlying trend of rising capital-output ratio. Reducing labor market rigidities and liberalizing both internal and external trade should improve labor utilization and increase incomes of the poorer segments in urban centers.

13. To assess the economic development prospects of the Colombian economy over the next decade, two development paths have been examined, each representing a distinct strategy. The first path, Scenario A, is based on the assumption that economic growth depends solely on capital accumulation (and thus on the implied need for external and domestic financing), and that total factor productivity (TFP) growth is given no role in the economic growth process. This assumption fits well with Colombian economic growth experience of the last decade, and implies that policy measures taken in the recent 2-3 years will not succeed in improving productivity growth in the economy. The second path, Scenario B, assumes that these policies, probably bolstered by additional measures to improve the efficiency in the economy, will make a major contribution in reversing the secular decline of total factor productivity. Scenario B assumes that productivity growth in the tradable goods sector would increase by about 2.5% per annum (implying an overall increase in productivity growth of about 1.5% per annum) and that increased outward-orientation will occur in the tradable goods sector.

14. Scenario A strategy implies that domestic savings should rise significantly over the medium-term for the economy to grow at 4.5% per annum (the full capacity growth rate). This is a great challenge given that the required savings rate would have to surpass the historical average by a significant margin. Domestic savings can be encouraged through reducing the fiscal deficit, maintaining positive interest rates, reducing intermediation

costs, further developing financial and capital markets, and shifting the basis of taxation from income to consumption. If the domestic savings rate could not be raised much beyond the present level, economic growth in the 1990s would likely average about 4.0% per annum, resulting in a rising unemployment rate. Further, economic growth would likely fall below the average in second half of the next decade due to the foreign exchange constraint.

15. Scenario B, in contrast, would enable Colombia to break away from the potential domestic savings and external capital constraints because the assumed higher productivity growth allows capital accumulation to be reduced by two and a half percent of GDP. Thus, even facing the same external financial constraint, under this growth path the Colombian economy would grow at approximately 5.5% per annum or higher on average, resulting, by the year 2000, in per capita income at least 15% higher than under Scenario A and a much lower unemployment rate throughout the next decade. Further, this growth path could most likely lead to an acceleration of economic growth in the second half of the next decade, rather than the relative growth stagnation of Scenario A. The difference between the two scenarios, while seemingly small when decade average growth rates are compared, is in fact crucial. In Scenario B Colombia, ten years from now, would be poised for sustained rapid growth that could put it in the ranks of the newly-industrialized countries within 20-30 years instead of facing stagnation and a series of crises promised by Scenario A.

E. Policies for Raising Total Factor Productivity

16. Analysis of the elements of growth reveals that TFP growth has provided little to Colombia's economic growth since the middle of the 1970s. In order for the Government's employment generation and poverty alleviation targets to be met, it is clear that TFP must be improved. This can be achieved by progress on several fronts.

17. First, further strengthening public resource management, streamlining public investment projects (for example, through better sectoral planning), improving the flexibility of the budget allocation mechanism, and rational pricing of public goods and services such as utilities. The Government has launched important reforms in the management of public expenditures (the passage of the Organic Law of the Budget, the signing of a new coffee contract, and the proposal to reform the railway systems) which, if implemented effectively, should go a long way toward raising the efficiency in the public sector, which is only 40% of that of the private sector (measured by the incremental capital output ratio). Most of these issues are discussed in a companion Public Sector Expenditure Report (World Bank Report No. 7891-CO, July 1989). Successful implementation of these measures would also raise the efficiency in the private sector because a better fiscal control should reduce the inflation tax.

18. Second, the productivity of the private sector in Colombia has been hampered by the highly protected trade regime and and a highly concentrated industrial structure (see Colombia: Commercial Policy Survey, World Bank Report No. 7510-CO, February 1989, Colombia: Industrial Sector Report, World Bank Report No. 7921-CO, July 1989). These factors reduce the motivation of domestic industries to be competitive and innovative. Extensive research and

development experiences of other countries point to the significant positive contribution of external trade to economic growth. The positive association between external trade and productivity growth has also been validated by Colombian data: it is estimated that for every one percent increase in export growth, productivity growth is increased by a tenth of a percent. Perhaps because of this, the major spurts in economic growth in Colombia (1967-74, 1986-87) have been associated with improvements in the trade environment.

19. Liberalizing external trade could thus raise the TPF of the private sector. It could also be an effective instrument to reduce industrial concentration and further raise productivity growth in the private sector. However, for trade liberalization to achieve its desired objectives, the opening-up process should be closely coordinated with macroeconomic and sector policies. These includes the devaluation of the real exchange rate, the reduction of fiscal deficit, and the removal of major distortions in goods, labor, and capital markets.

CHAPTER I. Recent Economic Developments

I. Introduction

1. In 1984, Colombia implemented a major economic adjustment program designed to restore internal and external equilibrium over the medium term. Evidence for 1986-87 suggests that the adjustment program has been successful. However, many other developing countries undertook similar economic adjustment programs during the same period, without much apparent success.[1] The adjustment program of Colombia therefore merits particular attention. Chapter I discusses the evolution of economic policies and evaluates the economic performance of Colombia since 1984. It also identifies economic policies that will need further attention if the success achieved so far is to be sustained in the medium to long-term. The chapter begins with an evaluation of the events leading to the 1984 economic slow-down.

2. Despite the economic recovery of 1986-87, evidence points to a possible return to a deteriorating trend of economic growth and inflation. Fiscal control must be exercised to allow macroeconomic policies to control inflation without lowering economic growth. Chapter II is devoted to an analysis of the fiscal adjustment undertaken so far, and an assessment of the approximate size of the financeable fiscal deficit that is consistent with alternative targets for inflation and real interest rates over the period 1989-92.

3. Policies to sustain the recovery of private investment and revive total factor productivity growth are important for sustaining economic growth at a level sufficient to reduce unemployment over the medium- and long-term. Chapter III evaluates the recent performance of private investment and examines financial and fiscal policies affecting the behavior of private investment. Sustaining strong economic growth is a major strategy of the Government for reducing unemployment and is a precondition for alleviating poverty. Chapter IV begins by analyzing the relationship between aggregate economic growth and unemployment in order to assess the effectiveness of this strategy. The chapter then analyzes the sources of economic growth in Colombia and evaluates, in particular, the contribution of total factor productivity growth to the growth process. The chapter ends by elaborating two long-term economic growth scenarios of the Colombian economy, and discusses the implications of two contrasting development strategies. One scenario assumes that no significant improvement in total factor productivity growth would take place. The other assumes that policy reform, some of which has already been undertaken in the last 2-3 years, would be sustained, enabling the economy to grow more efficiently and resulting in a revival of total factor productivity growth. Chapter V discusses several major economic policies that can influence the performance of total factor productivity. These include the management of the public sector, trade and industrial policies.

1/ See "Macro Performance Under Adjustment Lending"; R. Faini, J. de Melo, A. Sehadji-Semlali and J. Stanton, Country Economic Department, The World Bank, April 1989, WPS190.

II. Economic Developments Leading to the 1984 Slow-down

4. In late 1984, the Colombian economy was in a balance of payments desequilibrium as international reserves fell quickly, approaching the critical level for satisfying import requirements. Although the episode was triggered by excessively expansionary macroeconomic policies and by the 1982 global economic recession, it was also rooted in deep-seated structural weaknesses in the economy that made it vulnerable to domestic policy mistakes and external shocks.

5. The effect of the expansionary fiscal policies, principally expenditure increases, can be seen in the behavior of the public sector deficit, which expressed as a ratio to GDP, rose from 2.5% in 1980 to 7.5% in 1983 and 6.3% in 1984 (Table I.1). Total government current expenditure rose by about 4 percentage points of GDP during 1980-84, from 11.8% to 15.9%. All categories of expenditure increased. Capital expenditure rose even more, by 4.4 percentage points of GDP, from 5.1% to 9.6%.[2] The resulting large rise in the fiscal deficit left several important negative legacies for the economy.

6. As the domestic financial system could not provide the necessary credits to finance public investment, the deficit had to be financed through a significant rise in foreign credits. Thus, in just six years from 1978 to 1984, Colombia's foreign debt tripled to US$12,037 million, with public and private debt rising by equal proportions. Most of the increase was contracted with foreign commercial banks between 1978 and 1982. After the emergence of the international debt crisis in 1982, domestic credits became the major source for financing the public sector deficit, with the central bank alone financing approximately fifty percent of the fiscal gap during 1982-84. The monetization of the fiscal debt was mainly responsible for sustaining the inflation momentum of the coffee boom in the mid-1970s into the early 1980s, when international coffee prices began to descend. This factor also contributed to the high level of real interest rates, as credits to the private sector were curtailed to accommodate the monetary program for maintaining price stability (Table I.2).

7. The fiscal deficit also aggravated the already overvalued peso as domestic inflation continuously exceeded international inflation. Under an inactive exchange rate policy, the real exchange rate appreciated by a cumulative total of 27.1% between 1974-76 and 1982,[3] seriously eroding the competitiveness of Colombian exports in international markets. During 1983-84, the authorities started to accelerate the crawling of the exchange

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2/ According to national income and products account figures, total government expenditure increased to 18.4% of GDP during 1980-84 from 14.0% during the previous five-year period. Public investment as a percentage of GDP rose from 5.3% in 1978 to 8.2% by 1982 and government consumption rose from 9.6% to 10.8% of GDP.

3/ According to the real exchange rate index of the Central Bank, which is a geometrical average of the weighted relative wholesale price indexes of Colombia and its 18 major trade partners. Detailed information can be found in Revista del Banco de la República, January 1988 issue.

TABLE I.1: Consolidated Nonfinancial Public Sector Account
(% of GDP at current prices)

	1980	1981	1982	1983	1984	1985	1986	1987/p	1988\e
1. Public Sector Deficit = (5-4)	2.5	6.1	7.6	7.5	6.3	3.5	-0.2	1.4	2.6
(primary deficit) 1/	-	4.4	5.8	5.7	3.9	0.6	-3.4	-2.4	-1.3
2. Current Revenue	14.4	16.4	16.2	18.2	19.2	21.0	23.1	..	..
3. Curr. Expenditure	11.8	14.8	15.5	15.5	15.9	15.3	14.8	..	..
Consumption	8.3	9.7	9.8	9.3	9.4	8.5	8.0	..	..
Interest Payments	0.6	1.7	1.8	1.8	2.4	2.9	3.2	..	..
- External	-	1.2	1.4	1.4	1.6	1.9	2.3	..	..
- Internal	-	0.5	0.4	0.4	0.8	0.9	0.8	..	..
Transfers	2.9	4.4	4.3	4.4	4.4	3.9	3.6	..	..
4. Current Savings = (2-3)	2.6	1.6	0.7	2.7	3.3	5.7	8.3	6.5	6.3
5. Capital Expenditure	5.1	7.7	8.2	10.2	9.6	9.1	8.1	7.9	8.9
Fixed Cap. Formation	-	7.4	7.7	10.1	8.8	8.2	6.4	..	..
6. Financing	-	4.8	7.2	7.4	6.8	4.3	-0.6	1.4	2.6
- External	-	3.0	3.1	2.5	1.9	3.8	2.7	-0.3	1.5
- Internal	-	1.8	4.1	4.9	4.9	0.5	-2.1	1.7	1.1
7. Net Residual 2/ = (1-6)	-	1.3	0.4	0.1	-0.5	-0.8	0.4	0.0	0.0
Memo: 3/									
Public Saving	6.2	4.7	3.3	2.5	3.8	4.9	8.3	5.1\e	3.3\e
Public Investment	7.7	8.6	9.4	8.8	9.0	9.6	8.5	8.4	8.1

1/ Public sector deficit excluding interest payments.
2/ The residual results from estimating the fiscal deficit through two independent approaches: i.e. one from "above-the-line" and the other "below-the-line" or from the financing side.
3/ 1980-86: DANE (Cuentas Nacionales de Colombia (1965-86); 1987-88: Banco de la República (Selected Economic Indicators)
\p = preliminary
\e = estimated

Source: Banco de la República.

TABLE I.2: Money, Inflation, and Interest Rates

	1980	1981	1982	1983	1984	1985	1986	1987	1988
Money Growth (Dec/Dec)									
Monetary Base		21.5	17.7	13.5	18.3	25.9	28.3	31.5	26.9
Money (M1)		19.9	25.4	29.7	23.4	28.2	22.8	33.0	25.8
Net dom. assets		29.4	33.6	35.3	27.8	31.6	8.2	31.9	19.4
Central Adm		4.9	11.0	11.3	12.6	2.5	-1.4	3.6	..
Private sector		26.7	24.8	25.6	18.0	22.9	20.1	25.1	16.6
Inflation Rates (period average)									
GDP deflator	27.6	22.8	24.8	20.4	22.2	24.9	29.2	22.8	27.0
CPI	26.6	27.5	24.6	19.7	16.2	24.0	18.9	23.3	28.1
WPI	24.2	24.1	25.6	21.7	18.3	24.9	22.0	25.2	28.3
Interest Rates 1/ Nominal Rates									
Lending	45.8	47.5	47.9	43.7	44.8	45.3	41.2	41.4	39.2
Borrowing	36.8	38.6	36.2	33.7	34.5	35.6	31.2	33.9	31.8
Real Rates									
Lending	19.3	20.0	23.4	23.9	28.6	21.3	22.3	18.2	11.1
Borrowing	8.6	9.7	9.8	14.6	13.7	11.0	9.2	8.0	3.7
Real Exchange Rate	73.1	70.7	65.6	67.3	71.9	92.4	100.0	99.7	97.3

1/ Effective interest rates. Lending interest rates refer to those of banks, financial corporations and commercial finance companies' averages of the period. Borrowing interest rates refer to rates of 90-day certificates of deposits in December. Real interest rates are obtained by subtracting CPI inflation rates from nominal interest rates.

Source: Banco de la República.

rate,but the amount of depreciation was not sufficient to restore international competitiveness.

8. During the early 1980s, the world economy was characterized by a sharp recession, high interest rates, and falling international coffee prices. These factors caused a contraction in foreign demand, a fall in the terms of trade, and an increase in the debt service burden (Table I.3). It is estimated that the decline in the terms of trade and the rising interest rates resulted in a drop of economic welfare averaging 2.6% of Colombia's GDP during the two periods: 1976-81 and 1982-84.[4] The loss in international competitiveness due to an overvalued exchange rate, combined with the above-mentioned external factors, considerably weakened the external account. Exports fell by an average of 4.7% per annum and export prices by 5.4% per annum during 1981-83, while imports registered robust growth. From a near balance in 1980, both the trade account and the current account balances turned negative during 1981-83, averaging 6.1% and 9.6% of GDP respectively. In four years, international reserves fell by US$3.5 billion; by the end of 1984, the reserves fell to three months of imports. (Table I.4).

9. The weakening of the external sector was accompanied by a decline in the production of tradeable goods. Manufacturing activities were particularly hard hit: the share of manufacturing in total GDP fell from 23.6% during 1974-76, when the real exchange rate started to appreciate, to 21.0% in 1983 (Chart I.1). It appears that a process of "deindustrialization" took place. The share of agriculture to GDP also fell, albeit by a smaller magnitude, from 23.5% of GDP to 22.5%. Led by the stagnation of tradeable goods production, economic growth slackened to only 1.6% during 1981-83, compared with a historical average of above 4.5%, despite the Government's attempt to revive economic growth by stimulating domestic demand.

4/ The welfare (w) effects of the loss in the terms of trade and of the increased debt service burden due to higher interest rates, measured as a percentage of GDP, are quantified by the formula:

$$\frac{\Delta w}{w} = - (\bar{R}_2 - \bar{R}_1) * (\bar{D}/\bar{Y})_2 + (\bar{PX}_2/\bar{PX}_1 - 1) * (\bar{X}/\bar{Y})_1 - (\bar{PM}_2/\bar{PM}_1 - 1) * (\bar{M}/\bar{Y})_1$$

$\bar{R}$ - average real interest rate (US GDP deflator); the nominal interest rate is the weighted interest rate on concessional and commercial debt.

$\bar{Y}$ - real GDP measured in dollars.

PX,PM- export and import price indices measured in dollars and deflated by US GDP deflator.

X,M - Exports, imports.

D - Debt outstanding, net of reserves

Subscript "1" represents the first period: 1976-81, and subscript "2" represents the second period: 1982-84.

TABLE I.3: GLOBAL ECONOMIC VARIABLES

	1980	1981	1982	1983	1984	1985	1986	1987	1988 p
G-5 GNP growth rate (%)	1.2	1.6	-0.6	3.0	5.3	3.1	2.8	3.4	4.2
LIBOR (6 months %)	14.0	16.7	13.6	9.9	11.3	8.6	6.9	7.3	8.1
Export prices									
Coffee (b, libra) 1/	178.8	145.3	148.6	141.6	147.3	155.9	220.0	123.5	142.8
Oil ($/bbL) 2/	30.5	34.3	31.0	28.1	27.5	26.7	13.5	17.2	14.5
All goods (1980 = 100)	100.0	88.4	88.6	84.4	86.6	79.4	95.9	86.2	90.4
Import prices (1980 = 100)	100.0	115.1	113.5	95.6	92.1	90.1	83.4	83.3	85.3
Terms of trade (1980 = 100)	100.0	76.8	78.1	88.3	94.1	88.1	115.0	92.9	91.6

p - preliminary

1/ Suaves colombianos
2/ Petroleum, average OPEC price

Source: Banco de la República, World Bank.

TABLE I.4: BALANCE OF PAYMENTS AND DEBT INDICATORS

As share of GDP	1980	1981	1982	1983	1984	1985	1986	1987 p	1988 e
Trade balance	0.1	-5.2	-8.1	-5.1	-5.1	0.3	5.8	5.2	2.4
Current acount balance	0.4	-6.7	-11.3	-10.8	-7.6	-4.9	1.6	0.2	-1.0
Interest payments 1/	2.6	4.2	5.1	4.0	4.3	4.0	3.8	3.8	3.6
International reserves (net) (mil. US$)	5,416	5,630	4,891	3,079	1,796	2,067	3,477	3,455	3794
(in months of imports of G&S)	10.3	9.3	7.0	5.0	3.0	3.6	5.9	5.3	5.6
External debt indicators									
Long-term debt service ratio	9.7	16.3	21.9	29.7	24.1	34.3	30.0	35.0	38.6
Debt/GDP	28.4	33.9	40.3	43.8	43.8	44.2	44.0	46.6	44.5
Debt/exports	120.3	185.7	214.8	281.2	261.3	300.1	231.5	265.2	258.5
Outstanding debt (mil. US$)	6,941	8,716	10,306	11,412	12,037	14,237	15,380	17,041	17,182
Real exchange rate index (December 1986 = 100)	73.1	70.7	65.6	67.3	71.9	92.4	100.0	99.7	97.3
Terms of trade index (1980 = 100)	100.0	76.8	78.1	88.3	94.1	88.1	115.0	94.3	91.5

1/ The data presented here differs from those in Table I.1 because the GDP in dollar term, which is used in this table, is converted at the average nominal exchange rate and adjusted for real exchange rate variations.

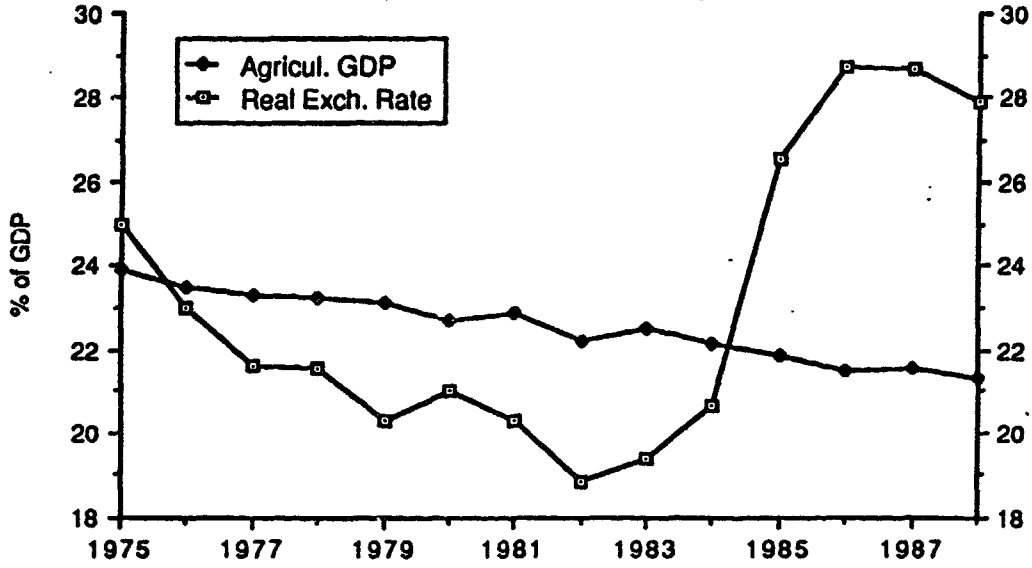
p - preliminary
e - estimated

SOURCE: Banco de la República, IBRD.

CHART I.1

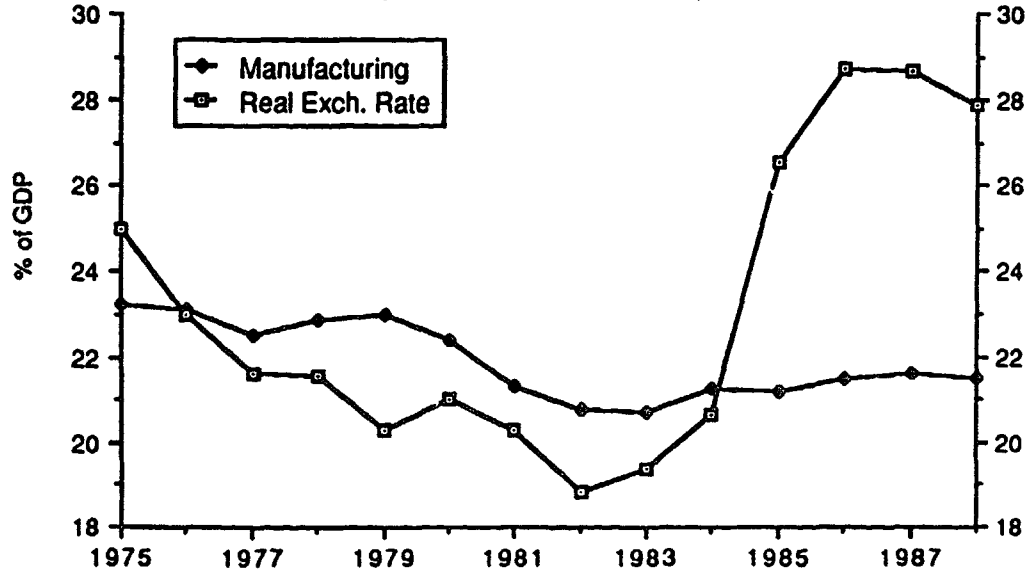
AGRICULTURE GDP & REAL EXCHANGE RATE

(As % of GDP; RER 1975=25)



MANUFACTURING GDP & REAL EXCHANGE RATE

(As % of GDP; RER 1975=25)



10. The sharp expansion of foreign debt and the simultaneous rise in interest rates during a period of stagnant output and export growth resulted in a sharp deterioration of creditworthiness indicators. From 1980 to 1984, the debt/GDP ratio rose from 28.4% to 43.8%, the debt/exports ratio rose from 120% to 261%, and the long-term debt service ratio rose from 9.7% to 24.1%.

11. As shifts took place in the structure of production, the economy witnessed a corresponding shift in employment structure. The contraction of the goods-producing sectors meant that service sectors had to absorb the growing labor force, which was increasing by 3% per annum. Employment in formal non-manufacturing urban sectors rose 40% during 1977-84. At the same time, informal sector employment rose by close to 50%. By 1984, 32% of the urban sector employment was in the informal sector.[5] The open unemployment rate in the formal sector, which was already among the highest in Latin America, continued to rise and reached an unprecedented 13.4% in March, 1984.

12. High and rising real rates of interest, overvalued exchange rate, and low domestic and external growth did not bode well for private investment. Private investment continued its downward trend into the 1980s; its share in GDP dropped from 12.3% during 1974-76 to 10.0% in 1984. National savings also fell. The national savings rate, which was 18.4% of GDP in 1974-76 fell to 15.5% by 1984. This decline reflected mainly the behavior of the public saving rate, which declined from 6.2% to 3.8% (within the public sector, the saving rate of public administration fell from 2.8% of GDP to only 0.6% of GDP (Table 1.5)).

13. The structural shifts in the composition of investment, production, and employment contributed to a deterioration in the performance of total factor productivity. This happened because the marginal productivity of public investment is lower than that of private investment and because the productivity of service employment is generally lower than that of manufacturing employment in Colombia. [6] In the ten year period preceding 1984, total factor productivity growth exhibited a secular decline and averaged only 0.12% per annum, compared with the 3.1% rate achieved during 1967-74 and the 1.9% rate of 1958-66. [7]

5/ The informal sector in Colombia as defined by DANE includes:
- Family workers without compensation.
- Domestic service.
- Self-employed, non-professional people.
- Employees of enterprises with 10 or less workers.

6/ During 1970-83, the average incremental capital-output ratio was 2.9 for private investment, 7.8 for public investment, and 4.1 for total investment. In 1984 the average salary of manufacturing employment was 1.8 times of service employment.

7/ See Chapter IV, Section 5. The productivity estimates were made by Jorge García García in "Macroeconomic Crises, Macroeconomic Policies and Long Run Growth: Part III The Colombian Experience 1950-1986", Bogotá, July 1988, draft.

TABLE I.5: SAVINGS RATES AND INVESTMENT RATES
(% of GDP at current prices)

	1970-79	1980	1981	1982	1983	1984	1985	1986	1987p	1988e
Savings										
Gross National Saving	18.1	19.6	16.9	15.1	14.7	15.5	17.1	19.6	19.5	18.6
Public	5.6	6.2	4.7	3.2	2.5	3.8	4.9	8.3	5.1	3.3
Private	12.5	13.4	12.1	11.8	12.1	11.7	12.1	11.3	14.4	15.3
Foreign Saving	0.6	-0.5	3.7	5.4	5.2	3.5	2.0	-1.6	-0.2	1.0
Total Saving	18.7	19.1	20.6	20.5	19.9	19.0	19.0	18.0	19.3	19.6
Investment										
Public Investment	6.2	7.7	8.6	9.4	8.8	9.0	9.6	8.5	8.4	8.1
Private Investment	12.5	11.4	12.0	11.1	11.0	10.0	9.4	9.5	10.9	11.5
Total Investment	18.7	19.1	20.6	20.5	19.9	19.0	19.0	18.0	19.3	19.6
Investment - Saving GAP (-)/Surplus (+)										
Public	(0.6)	(1.5)	(3.9)	(6.2)	(6.3)	(5.2)	(4.7)	(0.2)	(3.3)	(4.8)
Private	0.0	2.0	0.1	0.7	1.1	1.7	2.7	1.8	3.5	3.8
Total	(0.6)	0.5	(3.8)	(5.5)	(5.2)	(3.5)	(2.0)	1.6	0.2	(1.0)

p - preliminary
e - estimated

Source: 1970-85 DANE (Cuentas Nacionales de Colombia 1965-86); 1986-88, Banco de la República and DNP.
Total Savings: DANE. Foreign Savings: Balance of Payments. Gross National Savings = Total Sav. - Foreign Sav.
Public Savings: DANE (1970-85), DNP (1986-88). Private Savings = Gross National Sav. - Public Sav.

14. The general slow-down in economic activity during the early 1980s triggered a financial crisis in 1982, which lasted almost until 1987.[8] In addition to the slow-down in economic activity, the main causes of this crisis were i) the high debt-equity ratio of most corporations; ii) the very rapid expansion of bank credit during the coffee boom period 1975-80, which resulted in a large number of overdue and bad loans; iii) the very tight monetary control for neutralizing the stimulative impact of the coffee bonanza on the money supply and aggregate demand, that reduced the profitability of the financial sector and utlimately weakened it; [9] iv) the rapid accumulation of private sector foreign debt that occurred during 1979-80; v) the high domestic and foreign interest rates; vi) the weak capital base and high degree of concentration of loan portfolios of most financial intermediaries; and vii) the lax supervision exercised by the banking superintendency, which made possible the extension of bank credits exceeding the maximum domestic gearing ratio and the individual lending limits through foreign subsidiaries and affiliates.

III. The Economic Adjustment Program of 1984

15. In the early phase of the balance of payments crisis, the Government's main policy response was to tighten import restrictions. Since 1981, quantitative restrictions had been progressively increased. In 1984, the authorities accelerated the crawling of the exchange rate, resulting in a real depreciation during 1983-84. The Government also improved revenues through tax reform. Although these measures, combined with a world economy that was recovering rapidly from the recession, resulted in a reduction in the trade deficit in 1984 and a recovery of economic growth, they soon proved to be inadequate to arrest the continuous drain of international reserves. The government deficit remained high and the exchange rate remained significantly overvalued. In July 1984, the Government first publicly presented its goals of macroeconomic adjustment, which laid the foundation of the subsequent decisive and sweeping macroeconomic adjustment program.[10] The main elements of the adjustment program were the reduction of the fiscal deficit, the realignment of the exchange rate, the roll-back of the balance of payments protection, and the use of external loans to support the adjustment program.

16. From 1984 to 1985, the consolidated nonfinancial public sector deficit as a proportion of GDP was reduced from 6.3% to 3.5%, 60% of which resulted from the reduction of the Central Administration deficit, with the re- mostly attributable to nonfinancial public enterprises. The improvement in the Central Administration deficit was achieved almost equally by revenue enhancement and expenditure reduction measures. Import tariffs were increased, value-added tax rates raised and tax collection improved.

8/ La Evolución del Sistema Financiero en los Ultimos Años, Hernando Vargas H., Marta Lee W., Fernando Montes H. y Roberto Steiner S., Revista del Banco de la República, No. 731, Septiembre 1988.

9/ For a period, the reserve requirement was raised to 100%.

10/ See "Dinámica del Desajuste y Proces de Saneamiento Económico en Colombia en la Década de los Ochenta", Luis Jorge Garay S. and Alberto Carrasquilla B. Ensayos Sobre Política Económica, Junio 1987, No. 11.

Government employment was reduced by 4.3% after a strong growth in the two previous years (Table IV.3, Chapter IV), public sector real wages were reduced by about 10% (Table IV.7, Chapter IV), and transfers to other public entities slowed to below the rate of inflation. These measures produced an 8% reduction in current expenditure in real terms. For Government operations as a whole, fixed capital formation increased by 13%, implying an 11% reduction in real terms.[11] In the case of public enterprises, the reduction of the deficit was achieved by improvement of the operating surplus (mainly due to the National Coffee Fund) which made possible a strong increase in expenditure; fixed capital formation alone increased by about 15% in real terms. The increase in capital formation in public enterprises mitigated the reduction made by the Central Government. Hence, aggregate capital formation of the public sector even rose slightly from 9.0% of GDP in 1984 to 9.6% of GDP in 1985[12] in the face of fiscal stringency (Table I.5). In sum, the fiscal adjustment of the public sector was eased to a significant extent by a successful revenue enhancement program which prevented a larger cut in investment than might have been needed. Another important factor was the continued support given to the public investment program by external credits.

17. The fiscal adjustment continued into 1986 when a temporary mini-boom of coffee prices took place and when Colombia began to export oil. Helped by the increase in coffee and oil revenues and by the winding down of investment projects in the coal and petroleum sectors, the public sector account showed a small surplus. Even after the adjustment of the finances of the National Coffee Fund and Ecopetrol and other temporary revenues, however, the resulting "structural" public sector deficit still shrank from 3.9% to 3.2%. Further, the Government launched a tax reform program that aimed at correcting the long-standing bias against equity financing, neutralized fiscal incentives for production, investment and savings, simplified tax collection procedures, and realigned the top personal income tax rate with the corporate income tax rate. A tax amnesty program was also declared.

18. In 1987, coffee prices dropped, and a public sector deficit of 1.4% of GDP emerged. The deficit would have been higher had it not been for the surplus of Ecopetrol which resulted from a more than doubling of petroleum exports, and for the increase in revenues due to the amnesty program and the hiking of import surcharges. The structural deficit improved further to 2.6% of GDP, from 3.2% in 1986.

19. The strengthening of the fiscal position of the public sector during 1985-87 performed several important functions in the adjustment process. First, it removed a major source of money creation and thus reduced inflationary pressures. Second, the reduction of government expenditure reduced the demand for goods produced for the domestic market and thereby improved the incentive to produce for export. Therefore when foreign demand was revived by devaluation, supply could respond effectively. Further, the potential inflationary effect of devaluation was dampened by the overall

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11/ Government operations include Central Government (Central Administration, social security institution, and the national decentralized agencies) and local government.

12/ According to the data published by DANE. However, public investment contracted slightly according to Central Bank data (Table I.1)

reduction of domestic credit to the public sector and by the deflationary effect created for the nontradeable goods sector.

20. By late 1984, the pace of exchange rate depreciation started to accelerate at a rate greater than the domestic and foreign inflation differential. The rate of depreciation peaked at 56% per annum during the second quarter of 1985. From the last quarter of 1984 to the last quarter of 1986, the exchange rate depreciated by 92% in nominal terms and by 39% in real terms (according to the real exchange index compiled by the Central Bank), more than offsetting the appreciation of the real exchange rate from December 1975 to December 1984 (17.2%). The exchange rate policy since December 1986 has been to maintain the real exchange rate level attained in that month.

21. As the revised exchange rate policy was expected to strengthen the country's external position, the Government at the same time initiated a program to liberalize imports. This included steps to remove items from the prohibited and prior license lists and to expand the free list. Import restrictions were reduced from 99.5% of the tariff positions prohibited by licensing requirements in 1984 to 62.1% today, and have returned approximately to their 1981 level. In addition, during 1985-88, tariff rates and their dispersion were reduced sharply: tariff rates by 31% and the standard deviation by 50%.[13] Import surcharges were introduced in 1985 at a uniform rate of 10% and increased to 18% in 1987.

22. The adjustment program was supported by external credits. Coupled with the fiscal adjustment that reduced the overall financing needs of the public sector, external credits played a major role in fulfilling the remaining credit needs of the public sector. These might otherwise have had to be provided by an inflation tax or by crowding out the credit needs of the private sector. Thus during the first year of the adjustment program, 1985, external credits provided 90% of the financing needs of the public sector (3.8% of GDP), compared with only 28% in the previous year (1.9% of GDP) (Table I.1). Net foreign financing of the overall public sector steadily declined after 1985 and turned negative in 1987 as a result of the postponement into 1988 of disbursements of a US$1 billion loan from foreign banks. In 1987, with the decline in coffee prices at a time when foreign disbursements turned negative, the public sector deficit had to be almost entirely financed by domestic resources. Domestic credits to the public sector sector again gained prominence, rising to 2.3% of GDP. Thus, Colombia's credit policy was strongly influenced by the borrowing requirement of the public sector, the availability of foreign credit and coffee prices.

23. International Environment. The economic adjustment program was also helped by a more favorable international environment than that which prevailed during the early 1980s. The world economic recovery, which started in 1983, has continued into the adjustment period and even today. From 1984 to 1987, Colombia's major export markets grew at an average rate of about 2.2% per annum, compared with -8.4% per annum during 1980-83. The external environment would have been even more favorable, if Colombia's neighboring trading partners (e.g., Bolivia, Venezuela,) had not been mired in deep economic crises. International interest rates were also much lower than during

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13/ Colombia: Commercial Policy Survey, World Bank Report 7510-CO, February 1989.

1980-83: 8.5% versus 13.6%, (measured by six-month libor rates). As a result, the loss of economic welfare was less during 1984-86 than during 1982-84: 1.9% of GDP vs 2.6% of GDP.

IV. Medium-Term Plan and Policy Measures

24. Development Plan. While the Colombian economy has been growing on a sustained basis, thanks to a relatively conservative and flexible macroeconomic management, poverty and inequity remain as unsolved development issues. The Barco Administration, which took office in August 1986, responded to this challenge with a plan focused on measures to alleviate poverty. The dominant theme of the 1987-90 Development Plan (Plan de Economía Social) is social justice. It is to be achieved by providing for basic necessities and generating productive employment. The Plan builds on two related national programs: a "war on poverty" focused on basic services like housing, health and education, and the National Rehabilitation Plan (PNR) (a carry-over from the previous Government), which aims to develop poor and remote regions.[14] It also includes a consistent macroeconomic plan aiming at a GDP growth target of 5% a year, considered necessary for reducing unemployment and poverty, and an inflation target in range of 20-22%.

25. The Plan outlines specific sectoral priorities. In social services (health, education and water supply), the top priority is expansion of basic services based on existing systems. Universal primary education is an explicit goal, especially through increased coverage in rural areas. Institutional and organizational development are highlighted and links to decentralization are underlined.

26. Both the Plan and the Public Investment Program aim explicitly to reduce the share of investment in energy and increase the share in social and physical infrastructure and in agriculture. The power sector adjustment program involves financial and institutional rehabilitation, rationalization of the tariff system, and shifting investments from generation to transmission and distribution. Further exploration of petroleum resources and greater use of natural gas in homes and in transportation are envisaged. In transport, the Plan emphasizes improved utilization of existing infrastructure through maintenance and more effective coordination among and use of the various transportation modes. The Plan entails an aggressive investment program in national and local roads in poorer areas through the National Rehabilitation Program (PNR).

27. While agriculture is seen as a key sector, investment levels remain low and sector policies are yet to be clearly articulated. Priority goes to programs under the ongoing Integrated Rural Development Scheme (launched in the mid-1970s) and PNR, aimed at raising productivity and incomes of small farmers and ensuring food security. A long-standing agrarian reform program, based on settling and titling landless farmers on new plots of land, is to be pursued. For industry, the Plan emphasizes the need to increase competitiveness in production of manufactured consumer goods for export and domestic markets, and capital goods production.

14/ An evaluation of this plan can be found in Colombia: Social Programs and Poverty Alleviation: An Assessment of Government Initiatives, World Bank, Report No. 7271-CO, December 2, 1988.

28. Macroeconomic Policy. As an important component of the Development Plan, the Barco Administration's macroeconomic strategy has been a continued improvement in internal and external balances in the spirit of the 1984 adjustment program. Although the operational fiscal deficit has been rising since 1987, the overall fiscal policy stance is one of conservatism and the fiscal adjustment initiated under the 1984 adjustment program has been continued (see the analysis of Chapter II and Table II.1).

29. After the drastic depreciation of the exchange rate during 1985-86, the real exchange rate, as measured by the Central Bank, has successfully been kept stable in line with the Government's policy; for 1987 and 1988, respectively, the real exchange index was 99.7 and 97.0 which can be compared with a value of 100.0 prevailed in December 1986.

30. Financial Policy. The Government has taken a number of measures to improve financial sector performance, some of which specifically aimed at resolving the 1982 financial crisis. In 1982-83 monetary authorities took over temporarily the management of three banks and eight trade financing corporations, liquidated one bank and two specialized banks, and nationalized two banks. In 1984-85, the authorities tightened up bank supervision and the Monetary Board adopted several regulatory measures and resolutions to improve the position of the financial system including i) creating a special rediscount facility to finance purchases of assets which had been received by financial institutions in repayment of loans; ii) allowing commercial banks to invest part of their reserve requirement in special bonds with high interest rates; iii) raising by 7 percentage points the interest rates on class A bonds of the Agricultural Finance Fund, which are the most important forced investment of banks; and iv) restructuring private external debt.

31. To assist the capitalization of the financial system, the authorities set up a credit line to rediscount loans used to purchase shares or bonds converted into shares of financial institutions, and expanded access to the Enterprise Capitalization Fund, which was created in 1983 to finance the purchase of new shares of corporations. In 1985 the Guarantee Fund was established to provide capital or loans to financial institutions experiencing operating losses.[15] The most important operation of the Guarantee Fund in 1986 was the nationalization of the Banco de Colombia, which received about one third of the Fund's total resources. In addition, the Guarantee Fund provided capital for two other commercial banks and on trade financing corporations. There were two major operations in 1987, namely an equity investment in the Banco de Comercio and an increase in an outstanding loan to Granfinancía, a financing corporation associated with the Banco de Colombia.

32. The Government also submitted to Congress a draft legislation designed to reopen the financial sector, within limits, to investment by first rate international financial institutions. This legislation, when passed, should strengthen the capital base of Colombian banks and stimulate competition among financial institutions, thereby lowering intermediation costs. Recently, the Government has improved the interest rate structure for its directed credit lines by converting them from fixed to fully variable rates based upon the market rate (CDT). As a result, the interest subsidies

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15/ The Guarantee Fund obtained resources from the Banco de la República and a Col$40 billion loan from the National Coffee Fund.

of directed credit lines have been gradually reduced over time and sharply so in 1987 (Table III.5). At end-year 1987, the Government reduced the share of institutions' assets subject to forced investment, increased their effective yield, making forced investment paper negotiable, and permitted about half of reserve requirements to be met by them. The Government also made the credit subsidies under the agricultural directed line to be directly absorbed by the budget of the Ministry of Agriculture.

33. The central bank has gradually improved the mechanism of monetary control with the greater use of open market operations substituting for changes in reserve requirements. This is manifested by two indicators. First, open market operations as a percentage of monetary base have increased sharply since 1983 (from 12.3% in 1983 to 50.2% in 1987). However, a significant part of the open market operations was related to the need to finance deficits in various public sectors, rather than to voluntary purchases in the financial markets by the private sector. Second, the ratio of reserves to monetary assets which had been declining since the beginning of the decade, stabilized at around 30% since 1983.[16]

34. Management of Public Expenditure. Colombian authorities have long been aware of the need to strengthen the Government's capacity to manage public expenditure. Over the years consensus on this issue has developed, and several important reforms finally materialized during the Barco Administration.[17] First, the new Organic Law of the Budget was passed by Congress at the end of 1988; the new law aims at strengthening the budgetary process. The most important elements of the New Organic Law of the Budget are: i) creation of the Consejo Superior de Política Fiscal; ii) enlargement of the budget coverage; iii) elimination of "additional" budgets; iv) normalization of the function of macroeconomic programming; v) establishment of a "Banco de Proyectos"; vi) extension of Treasury's authorities to short-term borrowing to compensate for transitory fluctuations in liquidity during the fiscal year.

35. Second, in December 1988, a new ten-year coffee contract was signed between the Government and the National Federation of Coffee Growers. In this contract, and in line with the reforms introduced by the new budget law to enhance public expenditure efficiency, the Government introduced several modifications to improve fiscal control over the Coffee Fund management. These changes disallow the use of the Fund in activities beyond its original mandate of i) stabilization of coffee growers' income; ii) provision of marketing, technical assistance, quality control, and storage, and iii) promotion of economic and social welfare in coffee growing areas.

16/ Reserves ("Encaje") is defined as the sum of reserve requirements and banking reserves ("Inversiones del Encaje" plus "Reserva Bancaria"). Monetary assets include demand deposits, savings and time deposits (CDT).

17/ The following analysis is based on two recent World Bank reports: Colombia: Public Sector Expenditure Review, World Bank, Report No. 7891-CO, July 1989 and Colombia Decentralizing Revenues and the Provision of Services: A Review of Recent Experience, World Bank, Report No. 7870-CO, July 1989.

36. Third, the Government obtained legislation in February 1988 for a full restructuring of the railroad through privatization, which has been among the worst managed public enterprises in Colombia.

37. Fourth, the Barco Administration has continued the series of reforms on decentralization instituted by the previous Betancur Administration (1982-86). The objectives of the decentralization were i) to relieve the national Government of some of the burden of financing local services; ii) to raise local participation in development planning and management in order to allow the country's 1009 local government units ("municipios") greater decision-making powers on matters directly affecting their welfare; iii) to strengthen local government finances through additional national transfers as well as improved local revenue mobilization. If properly carried out, the decentralization of both spending and revenue authority should, by linking the costs and benefits of local services more closely, improve overall allocation of resources in the public sector.

38. In addition to the weakness in planning and budgeting process, the inflexibility of public expenditure has also been due to the high proportion of government expenditures that are financed by earmarked taxes. Today the proportion is estimated to be as high as 38% or 55%, depending upon the definition of earmarked taxes used. The Government has recently proposed to Congress to eliminate all earmarked taxes, with the exception of the Situado Fiscal and value-added tax (VAT) revenue sharing, but the proposal has been rejected.

39. Trade Policy. A recent Bank report concludes that the 1985-86 trade reform program did not fundamentally alter the inward orientation of productive incentives.[18] The reforms of the import licensing system launched during the 1984 adjustment program mainly reversed the protectionist trend of the early 1980s. In addition, the items which were liberalized were mostly noncompeting inputs for locally manufactured goods. Convinced of the need to raise the productivity of traded-goods sectors, the Government has recently announced that it would continue the process of opening-up the economy, that was initiated under the 1984 adjustment program.

V. Economic Performance: 1985-1988[19]

40. Developments in 1985. The two pillars of the 1984 adjustment program were fiscal and exchange rate policies. Both had completed their respective adjustment in 1986; there was no further fundamental improvement in the fiscal deficit, nor any significant real devaluation in 1987-88.

41. In 1985, the first year of the adjustment program, the economy expanded by 3.1%, which was only slightly lower than 1984. Foreign demand was the main source of demand growth while domestic demand contracted slightly. Exports grew by 14.4 % on top of the 10.3% growth of the previous year.

18/ Colombia: Commercial Policy Survey, World Bank, Report No. 7510-CO, February 1989.

19/ The analysis will be limited largely to the period 1985-87 due to the fact that 1988 data are not yet complete.

Imports, on the other hand, contracted by 6.7%. As a result, a small trade surplus of US$109 million emerged, despite the deterioration of the terms of trade. The improvement in the trade account also reduced the current account deficit to 4.9% of GDP from 7.6% in 1984. Simultaneously, the declining trend of international reserves was arrested.

42. Consumption growth, led by a strong growth of government consumption, had kept pace with the growth of the economy. The domestic savings rate thus did not increase appreciably, and therefore investment contracted by about 10% in order to accommodate the growing trade surplus (Table I.6).[20] As noted in paragraph 16, the public investment program increased by 0.6% of GDP in 1985. This meant that private investment bore the major burden of reduction in capital formation. The main sources of supply growth in this year were infrastructure, mining and manufacturing.

43. The adjustment program led to higher inflation: a rate of 24.0% in 1985, although this was still below that in 1980-82 (Table I.2). Given the sizeable devaluation, the modest increase in inflation in the short-run can be considered an achievement. The contraction of the fiscal deficit and the availability of external loans played a major role in limiting credit expansion to the public sector, eliminating a major source of inflation. The simultaneous launching of import liberalization, although modest and gradual, also helped on the inflation front. From the perspective of long run growth, though, the main concern at the end of 1985 was whether the contraction in private investment would continue and inflation run unabated.

44. Developments in 1986-88: External Account. During 1986-87, the trade surplus increased, averaging 5.3% of GDP, largely on account of the lagged effects of the major devaluation in 1985, a recovery in the terms of trade, the emergence of petroleum exports, and the strong growth in coal exports. Export volume grew by an average of 12.0%. Minor exports [21] staged a vigorous recovery with manufactures growing at an average rate of about 19% in value per year. Petroleum and coal exports increased dramatically due largely to the maturation of past investments. Imports began to grow again, but at a modest rate. As interest payments on foreign debt during the adjustment period amounted to about 4.0% of GDP, the need to generate a trade surplus large enough to offset interest payments became a necessary condition for reducing the reliance on external capital. In fact, the current account balance returned to near equilibrium in 1986-87.[22] By the end of 1987, international reserves rose to US$3,455 million, roughly double the level at the end of 1984, and approximately equal to 5 months of imports of goods and

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20/ Recalling the national income account identity: gross domestic capital formation = gross domestic savings - trade balance.

21/ Exports other than coffee, hydrocarbons, coal, gold and nickel.

22/ In 1986, Colombia experienced a mini-coffee boom, as international coffee prices rose from 155 USc/pound to 220 USc/pound. But in 1987, coffee prices retreated to 123.5 USc/pound. Thus the net effect of international coffee prices on the balance of payments during 1986-87 was insignificant.

TABLE I.6: ECONOMIC GROWTH DECOMPOSITION
(percent)

	1980	1981	1982	1983	1984	1985	1986	1987 p	1988 e
Output growth									
GDP	4.1	2.3	1.0	1.6	3.4	3.1	5.8	5.3	3.7
GDP per capita	2.0	0.3	-1.0	-0.3	1.5	1.3	4.0	3.5	2.1
Private consumption per capita	2.6	1.1	0.3	-1.3	1.1	0.1	1.3	1.9	2.0
Public consumption	12.7	3.7	4.6	-0.6	4.1	4.5	1.4	6.1	4.6
Investment	10.9	13.2	5.3	-2.2	-5.9	-9.6	4.4	6.7	7.8
Exports	5.1	-11.8	-1.6	-0.9	10.3	14.4	20.7	8.3	1.0
Imports	18.8	4.9	8.0	-9.1	-4.0	-6.6	5.6	3.9	12.0
Contribution to growth									
Demand side decomposition	100	100	100	100	100	100	100	100	100
Foreign demand	19.6	-83.3	-23.2	-7.6	40.6	65.0	55.4	38.1	15.9
Domestic demand	80.4	183.3	123.2	107.6	59.4	35.0	44.6	61.9	84.1
Supply side decomposition	100	100	100	100	100	100	100	100	100
Agriculture	12.2	32.0	-45.3	39.3	11.8	11.9	14.1	24.7	18.9
Mining	5.1	3.1	2.1	11.8	9.7	21.2	23.9	19.1	4.2
Manufacturing1/	4.8	-6.1	-29.5	7.6	29.3	20.9	20.0	23.2	21.8
Construction	11.0	10.5	15.7	29.9	7.8	11.6	0.0	-3.5	1.3
Infrastructure2/	28.9	48.7	96.8	40.1	18.2	23.5	18.4	8.0	12.8
Services	38.0	11.8	60.2	-28.7	23.2	10.9	23.6	28.5	41.0
Memo:									
Tradable sector3/	22.1	29.0	-72.7	58.7	50.8	54.0	58.0	67.0	44.9

p - preliminary
e - estimated

1/ Excluding coffee.
2/ Transportation, electricity, gas and water, and communications.
3/ Agriculture, mining, and manufacturing.

Source: DANE

services.[23] Due to the strong growth in petroleum and minor exports, their share in export earnings rose, respectively, to 26% and 30% in 1987, while the share of coffee export earnings dropped from 48% in 1984 to 31%. The strong performance of export earnings led to a sharp reduction in the debt/export ratio. However, the external debt/GDP ratio showed almost no change. (Table I.4).[24] In 1988, minor exports maintained their vigorous growth with industrial and agricultural goods growing at 20.5% in value terms, respectively. However, coffee export earnings fell slightly due to the reduction of export quotas imposed by the International Coffee Agreement. Petroleum export revenues also fell (by US$377 million) due to a combination of reduction in export volume (5%) and in the export price of crude oil (24%).

45. Economic Growth. As the external account improved, economic growth expanded at a faster rate of 5.5% per year on average during 1986-87 (Table I.6). Foreign demand constituted about 47% of the increase in demand for domestically produced goods, which was significantly lower than the corresponding figure of 65% for 1985. In the meantime, investment growth became a dominant component of the growth of domestic demand (including imports), contributing to 30% of the increase in total demand. Further, the recovery in investment was accomplished mainly by private investment. Private investment responded not only to better economic prospects as reflected by higher demand, but also to better financial conditions in the financial market, induced in no small way by the successful control of the fiscal deficit. Real lending rates gradually fell from the peak level in 1984, although the rates remained high (Table I.2). The uncertainty associated with crowding-out of credit was greatly reduced. Government consumption also showed more restraint, at least in 1986, as fiscal adjustment continued. The restraint in public consumption and investment in a growing economy also made possible a strong recovery in the growth of private consumption. It may thus be inferred that the economic recovery was led by the private sector, although the restraining of the public sector played an important role in the process.

46. From the supply-side point of view, mining and manufacturing continued to grow dynamically, contributing to 21.5% of the growth of GDP in 1986-87. A distinctive feature of the 1986-87 economic recovery was the recovery of the manufacturing sector from the stagnation that began prior to 1984. It should also be noted that the swift recovery in output was possible because of the existence of ample unutilized capacity, not because of new investment. This is borne out by the sharp decline in the incremental capital-output ratio during 1985-87 (Table IV.2).

47. In 1988, economic growth slowed down sharply to 3.7%, due to the adverse effects of falling oil and coffee export revenues and to the need to control inflation which rose to 28.2% (see paragraph 56). Also domestic demand became an even more dominant source of economic growth in 1988 than it was in 1986-87 (Table I.6). The contribution of mining to economic growth

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23/ US$1 billion of external credit was negotiated with commercial banks in 1987, but was not disbursed until 1988.

24/ The analysis of fiscal policy shows that the sharp depreciation of the U.S. dollar was not the cause for this result (see Chapter II, Section IV).

fell sharply to only 4.2% due to guerrilla's attacks on the oil pipelines and the winding-down of large investment projects in coal and petroleum sectors.

48. The financial measures adopted by the authorities (paragraph 30) as well as the strengthening of economic activity in 1986-87 contributed to improving bank profitability and to reducing the share of non-performing loans and the average risk of the portfolio of commercial banks. Most of the institutions which had obtained financial assistance from the Guarantee Fund also reported improvements, and some of those which received capital injections from the Fund are now entering a stage in which re-privatization may be considered. As of May 1988 the total amount of financial assistance provided by the Guarantee Fund totalled Col$95 billion (or about US$320 million), of which 40 percent had been granted as capital and the rest in the form of loan or repurchase agreements.

49. Investment and Saving. The economic recovery improved the profitability of domestic businesses, and private investment also recovered. As a result, real aggregate private investment outlays (in constant 1975 prices) rose from 7.3% of GDP in 1985 to an estimated 8.8% in 1987. Because of the decline in public investment from 8.3% to 7.4% of GDP during the same period, the total investment rate increased only slightly.[25] However, the recovery marked a significant change in the composition of investment. The share of private investment rose from 51% in 1985 to 60% in 1987. This change in investment composition produced a better return on capital and was a source of the higher economic growth, given that the return on private capital was 2.4 times greater than that of public capital.[26]

50. The trade adjustments and a temporary coffee boom produced a current account surplus of 1.6% of GDP in 1986. Simultaneously, both public and private savings rose. The increase in savings rates was the major factor that restored the balance of payments to equilibrium. The gross domestic savings rate (in nominal terms) rose by about 5 percentage points over the 1985 level, to 24.7% of GDP. Similarly, the national savings rate rose 2.5 percentage points to 19.6% of GDP (Table I.5). Both reached their highest levels since 1970. As the coffee boom receded in 1987, the current account surplus declined to 0.2% of GDP. As a result, gross domestic savings financed most of the capital formation and debt service payments.[27] The gross domestic savings rate fell by 0.9 percentage points from the 1986 level, to 23.8% of GDP in 1987, and correspondingly, national savings fell modestly to 19.5% of GDP.

51. The decline in the savings rate was due mostly to public savings settling back to their pre-coffee boom level. The private savings rate,

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25/ In current prices, total investment (including changes in stocks) in 1987 was 19.1% of GDP, about the same as in 1985.

26/ During 1975-85, the ICOR for public investment was 7.8, for private investment 3.2, and for the total investment 4.5.

27/ Foreign transfers more than doubled in 1986-87, reaching US$1 billion (2.8% of GDP) in 1987 and became a significant source of income to finance investment and debt service payments. But about half of this income was offset by other financial service outflows.

however, rose sharply to 14.4% of GDP[28] This is perhaps due to the fact that foreign transfers rose significantly (from 2.3% of GDP to 2.8% of GDP) during 1987. In addition, there were cyclical factors at play. As the economy underwent a recovery, corporate and personal savings tended to increase. Finally, the 1986 tax reform improved the incentive to save by reducing the top income tax rate from 40% to 30%. This improvement in private savings was sustained in 1988. It is, nevertheless, too early to determine whether the tax reform has improved the private savings rate fundamentally.

52. There was a steady deterioration in public savings after 1986, despite the reduction in the deficit of the Central Administration. In 1987, the deterioration of the National Coffee Fund due to the fall in coffee prices was partly offset by an improvement in Ecopetrol as oil became a significant export for the first time. The power sector registered large deficits, amounting to 1.2% of GDP in 1986 and 0.6% of GDP, or one quarter of the total public sector deficit in 1987. As a result, despite the respectable increases in revenues of the Central Administration attributable to the 1986 tax reforms, in 1987 the public savings rate declined to the pre-coffee boom level. In 1988, it fell further to 3.3% of GDP, about the same as the level during the pre-adjustment period 1982-84 and only about 60% of the level during the 1970s. As a result, the investment-savings gap of the public sector widened to 4.8% of GDP.

53. Employment and Wages. Total employment grew by 3.2% in 1986, at about two-thirds of the rate of expansion of the whole economy. Growth in government employment slowed as a result of the adjustment program. Manufacturing employment grew at a rate of 2.2%, while the output (value added) of the sector expanded by 6.6%, reflecting an employment-output elasticity of only about 0.3. Agricultural employment grew at an employment-output elasticity similar to that in the manufacturing sector. As a result of the relatively low absorption of labor in goods-producing sectors, most of the employment gain was obtained in service sectors. Of the slightly more than 579,000 jobs created in the urban sector during 1984-86, 98% were created in non-manufacturing sectors, 12% of which were in the informal sector. Over this period, manufacturing employment actually declined by 7,000, despite the recovery in 1986, while agricultural employment increased by 47,000. By 1986, only 36% of employment was accounted for by these two sectors, compared with 41% in 1980. Preliminary data indicate that in 1987, manufacturing employment grew by 3%, at about half the rate of growth in manufacturing output. Employment in construction grew 8.6%, despite the stagnation in the sector.

54. Part of the sluggish employment growth in manufacturing can be explained by cyclical factors. Employers are reluctant to hire if they are uncertain about whether an economic expansion will take hold, because firing a worker involves considerable costs. However, the main cause for the poor absorption in manufacturing is due to structural reasons, as evidenced by the historically very low employment elasticity of manufacturing. As a result, manufacturing employment in 1987 was still below the level attained in 1980, when it constituted 9% of urban employment or 6% of total employment.

28/ Causion should be exercised in interpreting recent data on savings. This is because savings data prior to 1986 in Table I.5 are DANE's estimates while savings data for 1986-88 are based upon Central Bank sources. There is a discontinuity in savings data during 1985-86.

Nevertheless, the cyclical expansion in employment in the service and other sectors has sharply cut the urban unemployment rate from 13.1% in December 1984 to 10.2% in December 1987. The unemployment rate remained high at 10.3% by December 1988 due to the slow-down in economic growth in 1988.

55. Wage behavior showed considerable moderation during the adjustment period. Real wages contracted across all sectors in 1985, and rose again during the economic recovery in 1986-87. By 1987 real wages in construction and manufacturing, and the minimum wage, had been restored to their 1984 levels, while those in agriculture and commerce had exceeded them. The wage restraint plus the devaluation greatly improved the competitiveness of Colombian exporters vis-a-vis foreign producers, enabling the adjustment program to successfully effect a real transfer of resources abroad. The downward flexibility of wages also facilitated the increase in employment in the informal sector and other service sectors where the labor markets are competitive.

56. Inflation and Interest rates. During the period of economic slow-down (1980-1983) inflation fell from a high of 28.8% to 19.7% (Table I.2). In the early stage of the adjustment program (1985-86), inflation was restrained by several factors: the existence of unused capacity carried over from the recession period, the successful containment of the fiscal deficit and finally, trade liberalization. Successful fiscal control at the very early stage of the adjustment program was instrumental in containing the inflationary pressures generated by the real devaluation. Inflation began rising in the middle of 1987, peaking at 30% in the summer of 1988 and declining to 28.1% by end-1988.

57. Studies have shown that excessive monetary growth, high capacity utilization, wage push, and devaluation were primarily responsible for inflation in Colombia.[29] The latest surge in inflation was primarily brought about by the re-emergence of the fiscal deficit in 1987, part of which had to be monetized.[30] The halt of trade liberalization, the surging demand for new capital from the private sector, a drought in early 1988 and a protectionist agricultural policy which caused food prices to soar also contributed to the increase in inflation.

58. High inflation, coupled with a non-accommodating monetary policy resulted in a tight liquidity situation. Interest rates rose and real economic activities began to suffer.[31] The rising inflation has resulted in

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29/ See Debates de Coyuntura Económica: El Control de la Inflación, Fedesarrollo, Bogotá, D.E. Colombia, Marzo de 1988. The Central Bank's analysis of recent inflation is contained in "Consideraciones Sobre El Fenómeno Inflacionario", Separata Revista No. 735 - Enero de 1989.

30/ The unexpected delay in disbursing the US$1 billion commercial credits (Concorde Loan) was the main reason behind the monetization of the fiscal gap by monetary authorities and was therefore also a source of inflation whose root cause, however, should be traced to the fiscal deficit.

31/ A tax auditing increase enacted in December 1987 caused a substantial withdrawal of bank deposits and contributed to a temporary rise in

Continued on next page

rising interest rates.[32] For instance, interest rates on certificates of deposit (90 days) rose from 30.7% in June 1987 to 36.5% a year later. Reacting to concern over the impact of high interest rates on investment and real activities, monetary authorities imposed interest ceilings on deposits and loans at the end of August which lowered the interest rates on certificates of deposit from 37.2% in July to 32.0%. At the same time, the Government also reduced by 2 points reserve requirements on banks, in order to inject more liquidity into the economy. In September, reserve requirements were lowered further by 4 percentage points. In late-January of 1989, as inflation seemed to be again under control, the administrative control of interest rates was reversed and reserve requirements were lowered by another point. Interest rates on certificates of deposit have risen only marginally since the decontrol.

59. Under the weight of measures to control inflation, high interest rates, liquidity shortages, the halving of agricultural growth due to a decline in coffee production, and the drop in petroleum production (due in part to guerrilla sabotages), economic growth slowed to 3.7% in 1988. For 1989, the Government's economic growth target is 4.0% and the inflation target is 24.0%. Over the medium-term, the Government plans to keep economic growth at 4.5% per annum while gradually reducing the inflation rate to the range of 20-22%.

VI. The Policy Agenda: The Need for a Transition from Economic Stabilization to Structural Adjustment

60. The Government's macroeconomic objective of controlling inflation is laudable, even if this policy produces lower economic growth in the short-run. In the long-run, higher inflation could not "buy" higher growth, but would eventually be associated with lower growth. This is because inflation and its variability create a distortion in business planning and thereby reduce the productive efficiency. This is not only supported by recent studies of the relationship between inflation and growth in developing countries, but is also consistent with Colombia's own inflation-growth experience. Chart I.2 shows the negative relationship between inflation and growth in Colombia; higher inflation, on the whole, has been associated with lower growth and lower inflation with higher growth. In the late 1960s and early 1970s (1968-

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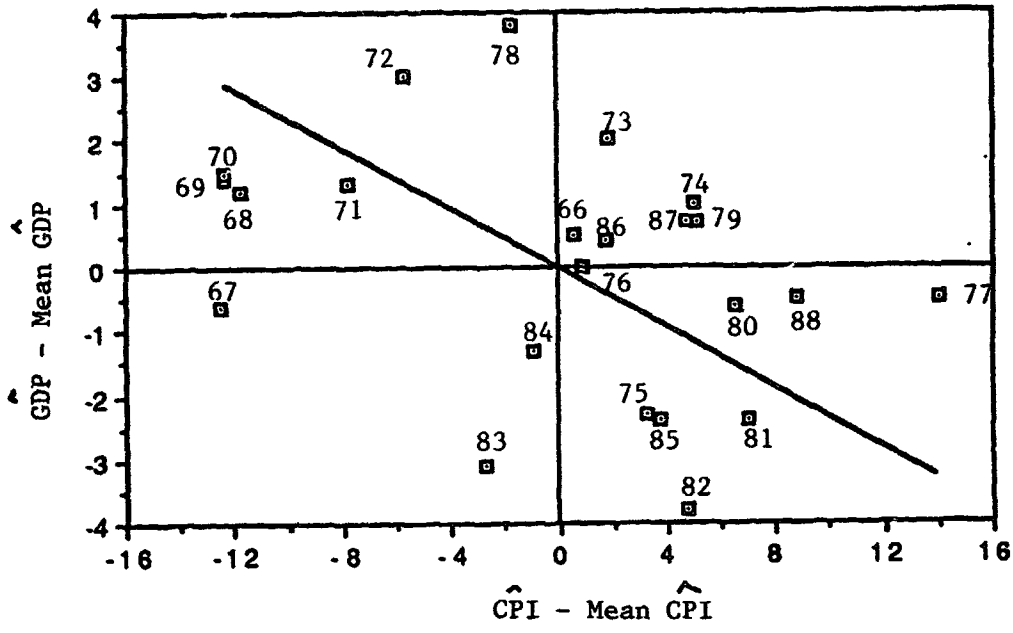
Continued from previous page
interest rates and the re-emergence of a spread between the official and the parallel market exchange rates during early 1988. An amendment of the December tax measure approved in April 1988 virtually eliminated the monetary and exchange rate disturbances caused by this measure. The tight liquidity situation was in part caused by an unexpected large increase in revenues of the Central Administration.

32/ Inflation is measured by the consumer price index (CPI). For most periods, the consumer price index, the GDP deflator, and the wholesale price index (WPI) have exhibited similar trends. 1986 was an exception, however; both CPI inflation and WPI inflation declined, but GDP deflator inflation rose substantially. The weight of food prices in CPI is about 50%. Food prices therefore frequently dominate CPI inflation in the short run.

CHART I.2

COLOMBIA: GDP & INFLATION 1966-88

Deviations from Historic Mean



LS // Dependent Variable is GDP
Date: 4-05-1989 / Time: 15:40
SMPL range: 1966 - 1988
Number of observations: 22
Convergence achieved after 3 iterations

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
CPI	-0.1127945	0.0602815	-1.8711311	0.076
AR(1)	0.5489836	0.1949160	2.8165143	0.011

R-squared	0.397144	Mean of dependent var	-0.022726
Adjusted R-squared	0.367002	S.D. of dependent var	1.960061
S.E. of regression	1.559448	Sum of squared resid	48.63756
Durbin-Watson stat	1.639027	F-statistic	13.17544
Log likelihood	-39.94354		

$\hat{GDP}$ - Deviation from Historic Mean (4.70) of GDP Growth Rate.

$\hat{CPI}$ - Deviation from Historic Mean (19.29) of CPI Growth Rate.

AR(1) - Auto Regression Correction Factor.

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Note - Regression line not drawn to scale.

1972), inflation rates were below the average while economic growth rates were about average; most of the inflation-growth configurations lie in the north-west quadrant of the Chart. Performance of both inflation and economic growth have deteriorated since then. During the 1980s, the annual inflation-growth configurations were clustered in or around the south-east quadrant of the chart. The economic recovery of 1986-87 raised the growth rate to above the historical average but at a cost of higher-than-average inflation. The concern for the below historical average performance of both inflation and growth in 1988 is that the recent economic recovery may not have broken the underlying deteriorating trend of economic growth and inflation.

61. If this deteriorating trend between inflation and growth is allowed to continue, more economic growth would need to be sacrificed in the future in order to achieve the same inflation targets; in other words, there is less room for macroeconomic policies to control inflation without running the risk of lowering economic growth. To avoid this, fiscal control must continue to be exercised. The logic behind the call for continued fiscal restraint is clear: the experience of the 1980s shows that unless there is fiscal discipline, monetary/credit, exchange rate and trade policies can easily get out of control. It is clear that the results of a mismanaged fiscal policy were high inflation and interest rates, an overvalued exchange rate, a more restrictive trade regime, and a greater need for external borrowing to sustain import requirements. Compared with the early 1980s, inflation today is higher and the international capital markets are less inclined to lend to Colombia despite its good performance within absolute terms as well as when compared to other Latin American countries. Hence, resorting to external financing to close the fiscal gap is a less viable option. (Chart I.3 attests to the historically close relationship between the fiscal balance and (net) external borrowing.) A lapse in fiscal policy, while the availability of external capital is constrained, could therefore result in much higher inflation and interest rates which could quickly undermine the strong growth record of the past few years.

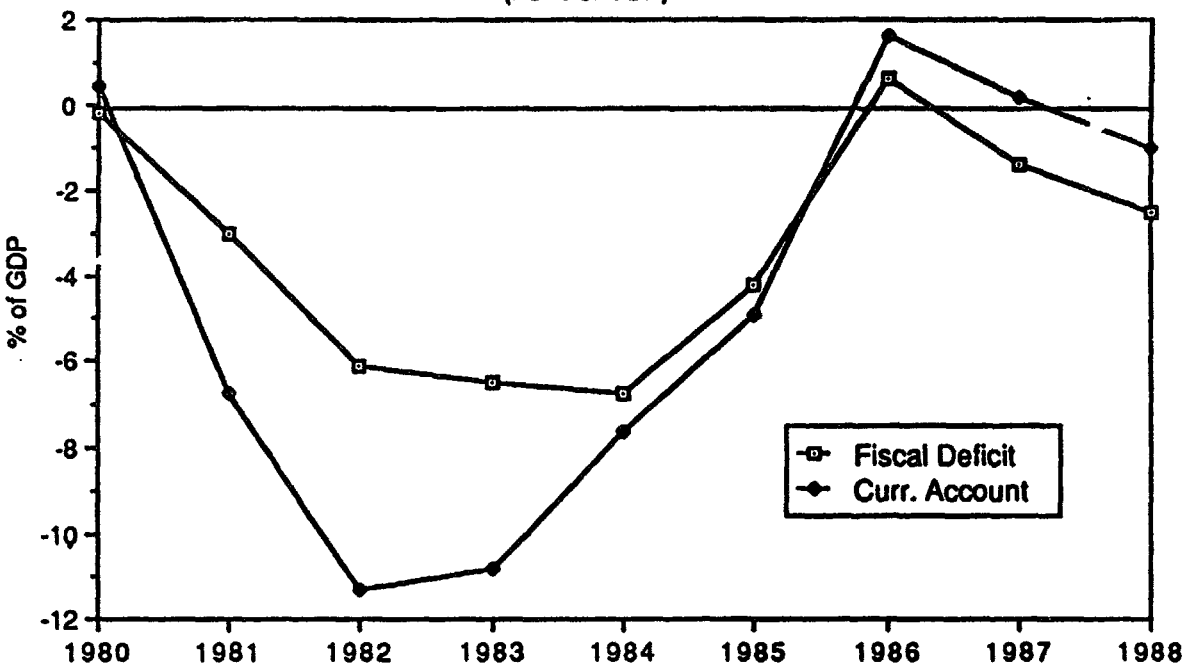
62. In order to sustain the economic recovery and reach the higher level of economic growth necessary to reduce unemployment over the medium term, there is now a need for a continued but more emphatic shift in policy emphasis away from economic stabilization, and towards structural adjustment. In addition to the need for continued fiscal control, there are two other areas which are of importance to ensuring a successful transition from economic stabilization to structural adjustment. First, the recovery in private investment and domestic savings must be sustained. This assertion is predicated on the belief that a high rate of private investment will alleviate capacity constraints and increase productivity which will moderate inflationary pressure and result in strong economic growth. In the short-run Colombia can probably resort to external financing to compensate for the short-fall of domestic savings. In the long-run, if the ongoing efforts at improving policy slacken, domestic savings will ultimately constrain the level of investment.

63. Second, total factor productivity growth must be raised. The contribution of TFP growth to economic growth has been small, and declining for over a decade. (See Chapter III). Although TFP growth partly recovered during 1985-87, it appears to have resulted from increased capacity

CHART I.3

FISCAL & CURRENT ACCOUNT BALANCES

(As % of GDP)



utilization rate, rather than from changes in fundamental factors governing TFP growth. If the low growth trend of TFP is allowed to continue, it will pose a serious constraint to economic growth in the medium- to long-run. As compared with a more intensified use of factor inputs (as has been the practice in the past), raising TFP growth leaves far more scope for raising the overall economic growth rate. A renewed emphasis on the areas discussed above is therefore needed for Colombia to consolidate its gains from economic stabilization, and to progress further along the path of structural adjustment.

CHAPTER II. A Review of Fiscal Policy

I. Introduction

64. A key component of the largely successful adjustment program that Colombia has followed since 1985 has been the improvement in the fiscal deficit. Starting from a position of severe imbalances in both the external and fiscal accounts prior to 1985, Colombia had achieved surpluses in both accounts by 1986. Although both have since reverted to deficit, the levels are much lower than before the onset of adjustment. At the same time, other indicators of economic performance have been favorable. Substantial growth returned in 1986-87 (over 5%), and export performance was buoyant, at least partially in response to the major exchange rate adjustment that accompanied the adjustment program. Inflation performance has been good for most of the adjustment period, remaining relatively constant at around 22% despite the rapid rate of currency devaluation. Only recently (in 1987-88) has inflation accelerated, for the reasons discussed in Section V of Chapter I.

65. Despite the apparent success of the fiscal adjustment, there are several questions that remain. One question is how much the fiscal adjustment that was achieved was the result of temporary and/or fortuitous events, as opposed to fundamental policy changes which have had lasting effects. A related question is how the deficit reduction was divided between reductions in investment and increases in noninterest current saving.

66. There are also more fundamental questions about how fiscal adjustment should be defined and whether the traditional analysis of the nonfinancial public sector deficit is adequate. Public financial intermediaries, especially the central bank, sometime contribute to public deficits through losses suffered on their financial operations. Development credit extended either by public financial intermediaries or the nonfinancial public sector has to be financed just as do traditional public expenditures. To capture all of these factors, the most comprehensive definition of the public sector would encompass its total financing requirements. This is also useful from the standpoint of macroeconomic analysis, since it is through its financing needs that the public sector comes to affect interest rates, private investment, inflation, and other macroeconomic variables.

67. The consideration of public financing requirements leads naturally to the analysis of public debt behavior. This is the "bottom line" of fiscal analysis, since the public debt captures the long-term cost of fiscal policies. The composition of public debt also affects domestic interest rates. It may also have fiscal implications if differentials exist between domestic and external interest rates. The fiscal adjustment of 1985-87 will therefore also be evaluated from the standpoint of the impact on public debt.

68. Finally, and perhaps most importantly, the future sustainability of current public deficits must be analyzed. This can be done by evaluating the implications of future deficits for inflation and interest rates, and checking the consistency with policy targets for these variables.

II. Structural fiscal deficit adjustment, 1985-87

69. This section will evaluate the question of how much the adjustment achieved during 1985-87 reflected temporary factors. There are several temporary shocks to consider in the fiscal accounts. The public sector benefited from the advent of a fortuitous rise in coffee prices during 1986, which yielded enormous profits to the quasi-public National Coffee Federation (FNC). This also contributed extra revenue to the National Government through the coffee export tax and through special transfers from the FNC. The rise in coffee prices was temporary, as they fell again in 1987. However, by that time, substantial new finds of oil reserves had begun yielding additional profits through the state-owned oil company ECOPETROL. Finally, a major tax reform in 1986 had a large but temporary effect on the budget through a one-time tax amnesty that took effect in 1987.

70. Table II.1 shows the effect of these factors on the overall public deficit. The unadjusted consolidated public deficit improves almost 7 percentage points of GDP between 1984 and 1986, when a small surplus is achieved. There is some slippage in 1987, when it reverts to deficit again, so that the total adjustment over 1984-87 is a little more than 5 percentage points. The corrected "structural deficit" shows much smoother behavior. There is steady improvement from 1984 to 1987, with the total adjustment amounting to slightly less than 5 percentage points. Thus, the adjustment from 1984 to 1987 is almost entirely due to structural factors, with the temporary factors mainly affecting the path of the adjustment and the level of the remaining deficit.

71. Table II.1 also shows the composition of the adjustment. We first remove the external and internal interest payments to get the "structural primary deficit". This reflects current fiscal policies, and eliminates the legacy of past deficits as reflected in interest on debt. A deficit on this account is usually not sustainable in the long-run. We see that a structural primary surplus had in fact been achieved by 1987. The improvement in the structural primary deficit amounted to about 6 percentage points of GDP over 1984-87. This exceeds the overall fiscal adjustment since the increase in public interest payments offset part of the improvement in the primary account.

72. Finally, we break out investment expenditure to see the composition of the primary deficit reversal. The "structural primary current deficit"--i.e. the primary deficit less investment--was negative throughout the period. This simply means that non-interest public saving was positive. This component of the deficit improves about 3 percent of GDP over 1984-87. Thus, half of the structural fiscal adjustment was due to improved current saving and the other half due to cutbacks in investment. It is unclear to what extent cutbacks in investment reflect actual improvement in the long-run fiscal picture. If productive investment was cut, this will lower future public income and so does not represent fiscal improvement. If projects were cut which were additions to sectors with excess capacity or which were otherwise unproductive, however, then this would be genuine fiscal adjustment. Past analysis of public investment in Colombia suggests that some of the investments cut were indeed in excess capacity sectors, such as the electric sector. The conclusion is that at a minimum 3 percentage points of the fiscal adjustment was a long-run improvement, while

TABLE II.1: Structural Trends in Fiscal Policy

Percent of GDP (+ deficit/-surplus)	1984	1985	1986	1987	Est. 1988	Proj 1989	Proj 1990
Total consolidated public sector deficit	6.76	3.55	-0.16	1.60	2.86	2.68	2.30
to be adjusted for							
FNC	-0.41	-1.36	-3.18	0.63	0.35	0.16	0.32
ECOPETROL	-0.15	1.18	0.24	-0.93	0.34	-0.09	-0.40
National government--temporary items\1	0.09	0.11	0.44	0.76	0.18	0.13	0.13
Structural deficit	7.42	3.85	3.22	2.66	2.36	2.72	2.51
corrected for:							
External interest	1.63	1.94	2.27	2.68	3.01	3.42	3.43
Domestic interest	0.77	0.89	0.76	0.88	0.99	0.90	0.81
Structural primary deficit	5.02	1.02	0.20	-1.10	-1.65	-1.60	-1.73
corrected for:							
Fixed capital formation	8.78	8.27	6.40	5.52	5.99	7.91	8.17
Structural primary current deficit	-3.76	-7.25	-6.20	-6.62	-7.63	-9.51	-9.89

\1 Includes coffee tax (2.5%), ECOPETROL transfers and backpayment of duties, FNC transfers, Decreto 399-1988, and special revenue from the tax amnesty (in 1987).

at least part of the 3 percentage points that correspond to the cuts in public investment was an improvement.

III. Profits/losses of public financial intermediaries

73. The central bank, Banco de la República, is traditionally excluded from most measures of fiscal behavior in Colombia. However, it has some revenues and expenditures which are analogous to those in the nonfinancial public sector. Table II.2 shows an account of the central bank which cover most, though not all, of its operations. This is the account known as Cuenta Especial de Cambios (CEC). It includes net income from foreign exchange reserves, which represent net interest received on the country's international reserves, of which Banco de la República is the sole custodian. Other reserve income comes from sales and/or revaluation of gold. The capital gains on holdings of foreign currency show up on a realization basis as currency is bought and sold. On the expenditure side, the main item is the interest expenditure on central bank bonds called títulos canjeables (TC's) (this category also includes another type of central bank bond known as título de participación, but for accounting purposes all of the bonds are classified as TC's). Since some of these bonds are dollar-denominated, this expenditure includes also capital losses suffered on the bonds from currency devaluation. These bonds are used in the open-market operations of Banco de la República to control the money supply. Besides administrative costs, the other main expenditure item is the exchange rate differential, which reflects differences between the exchange rate at which the central bank values its reserves and the price at which they are sold to the government for foreign debt repayment.

74. The balance on the CEC has fluctuated between plus and minus one percent of GDP. Interest on TC's grew steadily as open-market operations became more important in 1986-87. However, interest on foreign exchange reserves was also growing, as was the profit on the purchase and sale of foreign exchange, both of which reflected the rising level of net international reserves. A deficit of -0.3 percent of GDP in 1985 thus became a surplus of 0.6 percent of GDP by 1987. In recent years, the lion's share of the profit or loss of the CEC has been put into an account at the central bank which is intended to cover any future losses.

75. The CEC is not a comprehensive measure of the profit or loss of the central bank on financial intermediation. The most notable omission is the interest revenue and expenditure of the Fondos Financieros, which are the entities within the central bank that carry out development lending. The Fondos raise financing through mandatory purchases of their bonds by the financial system. They then lend at a subsidized rate to the target sectors. The sketchy data available seem to indicate that the main loss-maker among the Fondos is the Fondo Financiero Agropecuario, which carries out agricultural lending. Recent adjustments in controlled interest rates applicable to the FFAP have raised its borrowing rate faster than the rate it charges on loans, as shown in table II.3. Other fondos have a positive margin on their lending. However, to estimate the profit or loss of these entities, we need data on their operating costs and their level of defaults on loans. Table II.3 shows some hypothetical calculations which assume a 5

TABLE II.2: Cuenta Especial de Cambios - Banco de la República

PERCENT OF GDP	1984	1985	1986	1987	till June 1988
Net income from:	1.38	0.15	0.79	1.53	1.29
foreign exchange reserves (net)	0.13	0.09	0.22	0.42	0.34
interest earnings	0.26	0.25	0.41	0.54	0.57
interest payments	0.13	0.16	0.18	0.12	0.23
other net reserve income	0.44	0.01	0.21	0.29	0.04
gold	0.43	0.02	0.11	0.29	0.03
other	0.01	0.00	0.09	0.00	0.01
purchase and sale of foreign exchange	0.77	-0.01	0.29	0.79	0.93
exchange rate differentials-external credit	0.04	0.04	0.07	0.03	-0.02
Expenditure on:	0.78	0.46	0.82	0.92	0.81
Titulos canjeables	0.30	0.30	0.72	0.83	0.73
Administration costs of CEC	0.07	0.05	0.04	0.04	0.04
Reserves-exchange rate differentials	0.40	0.11	0.06	0.06	0.04
Net balance	0.60	-0.32	-0.03	0.61	0.48
delivered to Treasury	0.12				
put in fondo inversiones publicas	0.49		0.00	0.01	0.00
put in fondo estabilizacion cambiaria	0.14	-0.11		0.60	0.47
remainder	-0.15	-0.21	-0.03	0.00	0.00
amount outstanding	0.00	-0.21	-0.19	-0.14	-0.21

Source: Contraloria

TABLE II.3

INTEREST RATES FOR FONDOS FINANCIEROS AND HYPOTHTETICAL OPERATING LOSSES

	1985	1986	1987	1988 (November)
Interest rates paid on credit resources (percent)				
FFAP	18.7	18.2	19.6	22.3
FIP	22.7	21.1	24.3	26.3
FFI	23.7	21.7	22.0	24.4
FCE	24.0	21.3	24.0	25.4
Level of credit resources by Fondo (percent of GDP)				
FFAP	1.70	1.65	1.48	1.21
FIP	0.15	0.13	0.12	0.10
FFI	0.18	0.07	0.04	0.08
FCE	NA	0.04	0.16	0.17
Average interest rate for four Fondos		18.6	20.6	23.0
Interest rates received on loans by Fondos				
FFAP	16.60	18.30	19.10	19.00
FIP	25.10	24.50	26.90	26.90
FFI	22.00	22.10	23.40	24.70
FCE	18.30	19.00	23.30	25.80
PROEXPO	22.00	22.00	22.00	NA
Loans by Fondo (percent of GDP)				
FFAP	1.69	1.53	1.41	1.16
FIP	0.15	0.12	0.11	0.10
FFI	0.17	0.12	0.10	0.08
FCE	NA	0.13	0.15	0.12
Average interest rate on lending by Fondos (except PROEXPO)		18.98	20.19	20.42
Hypothetical operating profit (+)/ loss(-) of Fondos Financieros (percent of GDP)\1				
FFAP	-0.15	-0.13	-0.13	-0.13
FIP	-0.01	-0.01	-0.01	-0.01
FFI	-0.02	0.00	0.01	0.00
FCE	NA	0.01	-0.02	-0.02

\1 Assuming 5 percent operating cost and 10 percent effective default rate

Source: Revista del Banco de la Republica, November 1988

percent operating cost ratio and a 10 percent rate of default. This yields a deficit for the Fondos shown of about 0.16 percent of GDP over 1985-88. It should be stressed that this is only a hypothetical calculation, however. [33]

76. Other public financial intermediaries exist outside the central bank. These also engage in development lending and any potential losses or gains they realize should also be considered in an evaluation of fiscal behavior. One potential loss-maker is Caja Agraria, the public bank responsible for lending to the agricultural sector. It is estimated to have had cumulative losses equal to 0.7 percent of GDP in 1985, part of which were concealed by the transfer of a note payable by the government. The stock of losses had been reduced to 0.4 percent of GDP by the end of 1987. Although Caja Agraria continued to run small losses in 1986-87, the rapid growth of GDP allowed the losses to decline in relative terms.

77. Another important public financial entity is the Fondo de Garantía de Instituciones Financieras, which was created to deal with the crisis in the financial system which began in 1982. Substantial resources were contributed to the Fondo de Garantía by Banco de la República and by the Coffee Fund, with a flow of gross credit of 1.6 percent of GDP during 1986 from these two entities, as we will see below. However, the evaluation of profits or losses in an economic or accounting sense raises many difficult problems. The only source of income for the Fondo de Garantía is interest on its loans to troubled banks. It is difficult to value these loans at present, since their value depends on the return of the troubled banks to profitability, which is highly uncertain. As in the case of the U.S. savings and loan crisis, the fiscal cost of the support to the financial system may not be known for several years. A system of deposit insurance has been proposed to give the Fondo de Garantía another source of income through premiums paid on deposits. However, the system appears to be facing severe political and legal obstacles to its implementation.

78. It is clear from this discussion that data on profits or losses of public financial intermediaries, including the central bank, are fragmentary and incomplete. The next section will present another method of estimating the balances of these entities from the net financing they utilize, but this approach also has pitfalls. It is clear that more research and data-gathering efforts are necessary to evaluate the fiscal burden of financial intermediation performed by public entities. Although these preliminary calculations show the deficits of public financial entities to be small in absolute terms, they can be important at the margin when the authorities try to alter fiscal policy.

IV. Financing of public sector deficits

79. This section examines the magnitude and significance of the fiscal deficits during 1985-87 from the financing side. The results are based on a flow-of-funds exercise utilizing data on Banco de la República, the

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33/ For instance, if instead of 5 percent operation cost and 10 percent effective default rate assumed in Table II.3, 2 percent operation cost and 0 percent effective default rate are assumed, the estimated deficit for the Fondos is only 0.03 percent of GDP over 1985-88.

financial system, direct public borrowing from the private sector, and external debt flows. Annex I shows the matrices of outstanding stocks of financial assets and liabilities by agent from 1984 to 1987 (as a percent of GDP). We consider six classes of economic agent: (i) Banco de la República, (ii) the nonfinancial public sector, (iii) public financial intermediaries (Banco Central Hipotecario, Financiera Eléctrica Nacional, Caja Agraria, and Caja Social), (iv) private financial intermediaries, (v) the nonfinancial private sector, and (vi) external agents. The changes in these stocks represent borrowing or asset accumulation by each sector (as well as revaluation of liabilities or assets). Annex I also shows the flows as percent of GDP for 1987.

80. Table II.4 shows the results of the flow-of-funds exercise for 1985-87. The Table presents the financing of the consolidated nonfinancial public sector and Banco de la República in inflation-adjusted terms. The inflation adjustment subtracts the part of the flow of domestic financing that merely compensates for the erosion of the real value of debt outstanding. The financing flows also exclude the revaluation of external assets and liabilities caused by depreciation of the peso against the dollar, as well as that caused by depreciation of the dollar against non-dollar currencies.

81. The estimates of net financing shown in Table II.4 are somewhat higher than the conventional measures of nonfinancial public sector deficits. The memo part of the Table compares the conventional measures with the net financing unadjusted for inflation. There are two sources of discrepancy. One is that Banco de la República has significant net financing requirements (after correcting for capital gains on foreign exchange reserves) of around 1% of GDP. This provides another estimate of the possible loss suffered on quasi-fiscal operations by Banco de la República. This estimate is larger than that indicated by the calculations on the operations through the CEC and Fondos Financieros discussed above. Tracing the source of this possible loss would require further research.

82. Even after removing Banco de la República, we still find that the consolidated nonfinancial public sector has a higher net financing requirement in 1985-86 than that indicated by the conventional measure. The financing estimate may well be more comprehensive, since the conventional estimate is based on a less than complete sample of public enterprises, local governments, and national decentralized public entities. The financing estimate also includes some entities that are financial in nature, such as the Instituto de Credito Territorial (although not the public financial intermediaries such as FEN and Caja Agraria mentioned earlier). However, in 1987 we find that the financing estimate is nearly identical to the conventional public sector deficit.

83. Since the Table consolidates the nonfinancial public sector and Banco de la República, money creation is shown as simply another way to finance the consolidated net deficit. The inflation correction is not appropriate for monetary financing, however, since the inflationary erosion of the monetary liability is a tax on the holder which helps finance the public sector. The real change in the monetary stock represents the change in demand for money as a means of payment, the revenues of which accrue to the government. This is presented as "seignorage" in the table. In addition, the rate of inflation times the pre-existing stock gives an

TABLE II.4: Financing of Fiscal Deficits -- Inflation Adjusted

	1985	1986	1987
Currency held by public	1.11	0.73	1.16
Seignorage	0.19	-0.12	0.34
Inflation tax	0.92	0.85	0.81
Reserves	0.60	1.01	0.74
Seignorage	0.08	0.54	0.19
Inflation tax	0.52	0.47	0.55
Forced investments	0.35	0.04	-0.10
by private fin sys	0.28	0.04	-0.15
by public fin inst	0.07	0.00	0.05
Bonds of nonfin priv sector	1.01	0.40	-0.14
Lending by priv fin sys	-0.38	0.76	0.38
Lending by public fin sys	0.66	1.33	0.31
Total Domestic Finance	3.36	4.26	2.32
External lending	3.60	3.01	-0.94
Capital losses (-)	-10.39	-7.50	-7.70
Nominal change	13.99	10.50	6.76
Foreign exchange reserves	-0.75	-4.01	0.69
Capital gains	2.21	1.56	2.34
Nominal change	-2.96	-5.57	-1.66
Total External Finance	2.85	-1.00	-0.25
Total Financing	6.21	3.26	2.07
Lending by fondos financieros	-0.06	-0.04	-0.04
Financial support of banking system	-0.14	1.49	-0.10
Other rediscounts to banking sytem	-0.03	0.28	-0.26
Rediscounts to private sector	0.39	-0.50	-0.01
Total Public Nonmonetary Assets	0.16	1.23	-0.42
Total Net Financing	6.05	2.02	2.48
Memo:			
Net financing unadjusted for inflation	6.23	2.66	2.65
--consolidated nonfinancial public sector	4.99	1.31	1.76
--Banco de la Republica	1.24	1.35	0.89
Nonfinancial public sector deficit--convention	3.55	-0.16	1.60

"inflation tax" to the government. The sum of these two items is simply the nominal change in the money stock. This breakdown is shown in the table for currency and financial system reserves on deposits.

84. The Table shows that the inflation-adjusted financing requirement of the public sector decreased from 6.0% of GDP in 1985 to 2.5% in 1987. Except for financial support and other rediscounts to the banking system, the nonmonetary public assets decline in real terms over the period. The support of the banking system is concentrated in 1986. Thus, although it appears from the conventional fiscal accounts that most of the fiscal adjustment took place in 1986 and that there was slippage in 1987, the data on gross financing needs tell a different story. The large commitments for financial support of the banking system made the overall financing needs fall much less than the net deficit in 1985. In 1987, by contrast, the reduction in the flow of lending to the banking system more than offset an increase in the net deficit of the total public sector, so that the financing requirement fell.

85. A major change in the type of public deficit financing is also evident over the period. While in 1985 net external lending was still accounting for about half of total financing, it was drastically reduced in 1986-87. Gross external financing was significant in 1986, but practically all of it went into reserve accumulation. Thus, the need for internal financing actually increased in 1986, even though the total financing requirement fell significantly. In 1987, the reduction in financing needs and a small increase in net external lending allowed the domestic financing to fall again.

86. Examination of the composition of domestic financing shows that monetary financing was the most consistently important. The sum of currency creation and reserves held by the banking system amounted to about 1.7 percent of GDP in all three years. The forced investments (including both inversiones del encaje and inversiones obligatorias) are surprisingly unimportant as a source of finance. Bond sales were important in 1985-86, but turn negative in 1987. Lending by the financial system is also volatile--very significant in 1986, much less so in 1985 and 1987. Lending from the public financial intermediaries is larger than that from the private financial system.

87. Another fiscal policy in these years comes from examining the ratios of total public debt to GDP, shown in Table II.5. These ratios capture the long run impact of fiscal policy, since they measure the extent to which fiscal policy increases or lowers the requirement for future government saving. An increase in the ratio of government debt to GDP would require some future increase in government saving to pay the debt service.

88. Table II.5 shows that the initial year of the adjustment program was not successful in reversing the fiscal deterioration, as the debt ratio increased sharply in 1985. External debt increases particularly strongly.[34]

34/ This is not due to the major currency devaluation of 1985, as the external debt figures are evaluated at the 1987 real exchange rate. We also correct for revaluation of the external debt due to depreciation of the dollar against other industrial currencies.

TABLE II.5: Public Deficit Ratios
(percent of GDP)

	1984	1985	1986	1987
Money	8.49	8.30	7.89	7.92
Currency	5.45	5.35	4.69	4.73
Reserves	3.04	2.96	3.20	3.19
Net Internal Debt	5.68	6.94	8.12	7.88
Forced investments	3.08	3.28	2.98	2.69
by private fin sys	2.94	3.07	2.80	2.48
by public fin inst	0.13	0.19	0.18	0.21
Bonds of nonfin priv sector	2.49	3.36	3.43	3.06
Lending by priv fin sys less deposits	0.73	0.28	0.48	0.65
Lending by public fin sys less deposits	-0.62	0.03	1.24	1.47
Net External debt (at 1987 real exchange rate)	23.63	26.11	23.89	22.48
External liabilities less nonmon deposits	30.25	33.32	34.91	32.26
Net international reserves	-6.62	-7.22	-11.02	-9.78
Total public debt	29.31	33.05	32.01	30.36
Public nonmonetary assets	4.89	4.78	4.73	4.12
Lending by fondos financieros	2.41	2.22	1.96	1.79
Financial support of banking system	0.64	0.46	1.91	1.68
Other rediscounts to banking sytem	1.80	1.67	0.98	0.76
Rediscounts to private sector	0.04	0.43	-0.11	-0.12
Total net nonmonetary liabilities	24.41	28.26	27.28	26.25

In 1986-87, the strong fiscal adjustment reduced the overall debt ratio, but not enough to reverse the increase of 1985. Surprisingly, fiscal adjustment during 1985-87 did not actually lower the public debt ratio.[35]

89. Table II.5 also shows the changing composition of public debt. The composition of debt at the end of 1984 was heavily weighted towards external sources, which accounted for 80% of total public debt. These proportions were roughly maintained during 1985. During 1986-87, however, there was a shift towards internal debt as the external debt ratio declined. The composition of internal debt was changing at the same time. Forced investments and bonds increased in 1985, but then declined in 1986-87. The expansion in internal debt in 1986-87 was mainly fueled by lending by public financial institutions, and to a lesser extent, by the private financial system.

90. Meanwhile, public financial assets were roughly constant over 1984-86. Decreased development lending by the Fondos Financieros was offset by the increase in public financial support of the financial system. In 1987, public financial assets declined as a percent of GDP, as both development lending and lending to the financial system declined.

91. Table II.5 also shows that the real money stock declined over 1984-87. This reflects a fall in the real demand for the money base, meaning the potential for financing through money creation was also being eroded. Thus, at the end of 1987, the public sector's financial position had not improved in absolute terms compared to the end of 1984. However, the public sector's financial position was much better at the end of 1987 than it would have been in the absence of fiscal correction.

V. Evaluation of sustainable deficits

92. To evaluate the sustainable fiscal deficit and the financing tradeoff in financing it, a model is used which relates the portfolio behavior of the private sector to the financing needs of the public sector. This section summarizes briefly the model and then will summarize the results.

93. The model computes a level of (nonfinancial) public sector deficit that is consistent with a predetermined set of the Government's targets on inflation, interest rates, domestic and external debt ratios and economic growth. This level of deficit is called financeable deficit. The model

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35/ As noted earlier, however, there are many complications involved in making this calculation, so some margin of error should be allowed for interpreting this result. Possible complications include correcting for valuation changes, classification of assets and liabilities and differing accounting methods between the Government and Central Bank. Robinson and Stella [Robinson, D.J. and P. Stella, "Amalgamating central bank and fiscal deficits," in Blejer, M.I. and K. Chu, eds., Measurement of Fiscal Impact, IMF Occasional Paper 59 (June 1988)] recommend excluding Central Bank debt associated with normal monetary operations, but it is difficult to see the economic justification for doing so. Further research is needed in this area.

incorporates various financial flows to the public sector and models the behavior of the items that appear on the liability side of the public sector balance sheet: money creation, Government bonds to the private sector, foreign borrowing, borrowings from private financial institutions and from public financial institutions, forced investment and reserve requirement. The policy targets and instruments (reserve requirement and forced investment) jointly determine the interest rate on deposits and the portfolio choice of the private sector; namely, the choice between currency, other domestic financial assets (government bonds, deposits in private and public financial institutions), and foreign assets. The potential supply of credit by the private and public financial institutions is then determined.

94. The policy targets, instruments, and asset choice of the private sector also determine business investment and, through it, private demand for credit. Part of the private demand for credit is met by external credit under the guidance of the Government's external debt policy and the other part by loans from domestic private and public financial institutions. After allowing for the credit demand from the private sector, the distribution of development credits by "fondos financieros" and other lendings by public financial institutions, and the deficit of the Central Bank, financial institutions then allocate the remaining credit supply to the nonfinancial public sector. This, coupled with external borrowing under the constraint of the Government's debt policy, constitutes the financeable public sector deficit. If this deficit is greater than the planned level, this indicates that the deficit plan is not consistent with the policy targets from which the computation starts.

95. Table II.6 shows three simulations of the model. Under the first scenario, the model calculates the deficit consistent with roughly unchanged inflation and real interest rates over 1988-92. We assume the 28.2% inflation that took place during 1988 is reduced to 24% in 1989, then continues at this rate for the rest of the period. Real interest rates remain constant at their 1988 levels, which implies that the internal debt of the government will stay roughly constant relative to GDP. Real growth in GDP is 4.5% per annum. The external debt ratio also is assumed to stay constant. The resulting financing supplied to the government amounts to 4.8% of GDP in 1988, then declines to 4.4% of GDP in 1989-92. After projecting the development lending flows, this implies net financing for the consolidated public sector plus central bank of 3.1% for the rest of the period. After allowing for the net financing of the central bank and the residual between the financing definition of the public deficit and the conventional definition, this implies a conventional nonfinancial public deficit of 2.7% of GDP in 1988. This declines slightly to 2.4% of GDP over 1989-92. As shown in the Table, this implies a primary surplus of 1.3% of GDP, as compared to a primary surplus of 2% in 1987.

96. This estimate of future financing requirements is roughly consistent with the current projection of the fiscal accounts from the government's macroeconomic program. However, this outcome is not the most desirable because of the very high real interest rates that are required to maintain this financing level. Table II.6 shows the model's estimate that the real lending interest rate necessary to finance the deficit in 1988 was 15.7%, an increase of 2.8% over 1987. Since controls were in place during part of 1988, this can be interpreted as the "shadow" or market-clearing interest rate. The model implies that it is necessary for interest rates to

Table II.6: Inflation, Interest Rates, and Public Sector Deficit
(% of GDP)

	1988	1989	1990	1991	1992
Scenario A					
Inflation Rate	28.2	24.0	24.0	24.0	24.0
Real Interest Rate	15.7	15.7	15.7	15.7	15.7
Public Sector Deficit	2.7	2.4	2.4	2.4	2.4
Public Sector Primary Deficit	-1.4	-1.5	-1.4	-1.3	-1.3
Scenario B					
Inflation Rate	28.2	24.0	24.0	24.0	24.0
Real Interest Rate	15.7	13.1	9.8	6.6	6.6
Public Sector Deficit	2.7	1.9	1.7	1.6	2.1
Public Sector Primary Deficit	-1.4	-2.0	-1.9	-1.7	-1.1
Scenario C					
Inflation Rate	28.2	24.0	16.3	10.6	10.6
Real Interest Rate	15.7	13.1	10.2	6.9	6.9
Public Sector Deficit	2.7	1.9	1.6	1.3	1.8
Public Sector Primary Deficit	-1.4	-2.0	-1.8	-1.8	-1.3

Source: Annex I, Tables 2, 3, 4.

remain at this extreme level to finance the projected nonfinancial public deficit of 2.4% over 1989-92. This is likely to be inconsistent with the continuing revival of private investment necessary to support growth.

97. This projection also supposes that the current structure of interest rates remains in place. Thus, real interest rates on forced investments continue to be negative, while the interest rate on development credits remains below the rate for commercial loans. This implies that the benefits of the high real interest rate in attracting financial savings are not fully realized, since real deposit rates are nearly 6 percentage points below loan rates.

98. We thus consider an alternative simulation--shown as Scenario B in Table II.6--in which interest rates will be steadily reduced, with a total reduction of 9 percentage points over the period. This is accomplished in part by changing the interest rate through increasing the real interest rate paid on forced investments and by moving the interest rate on development credits towards the rate on commercial loans. Thus, the spread between deposit and loan rates is reduced and real deposit rates fall only 6 percentage points.

99. The fall in real interest rates reduces domestic debt financing to the government. This reduces the total financeable deficit to 1.9% in 1989 and 1.6% by 1991. However, the financeable deficit increases again to 2.1% of GDP in 1992 (and following years) after interest rates stabilize at the lower level. It is necessary for the deficit to decrease more in the short run than in the long run because the one-time portfolio shift itself reduces the domestic financing available during the transition.

100. The change in interest rate structure also affects central bank financing requirements. There are two offsetting effects. On the one hand, the increase in rates paid on forced investments without a compensating increase in development credit interest rates increase losses on development lending. On the other hand, the reduction in overall interest rates lower interest costs of central bank bonds and reduce central bank financing requirements. The net effect is to leave the financing requirement roughly unchanged.

101. This last scenario still has the shortcoming of continued high inflation of 24%. Therefore, in Table II.6, Scenario C, we present a simulation in which inflation is reduced by 14 percentage points over 1989-91, stabilizing at a rate of 10.6% in 1992. The same interest rate structure that held in the previous simulation is assumed here. The reduction in inflation requires a reduction in money creation that reduces the net financing of the total public sector from 4.8 percent of GDP in 1988 to 2.5 percent of GDP in 1991, increasing again to 2.9 percent of GDP in 1992. The decline in nominal interest rates reduce central bank financing requirements from 0.8 percent to 0.4 percent, while the nominal flow of development credit lending also falls. The conventional financeable deficit falls temporarily to 1.3% of GDP in 1991, after which it stabilizes at a long run level of 1.7% of GDP in 1992 and after.

VI. Interpretation of Results

102. The limitations of this kind of model should be well understood. Although the model can capture the transitions from one financial equilibrium to another, it does not include other short-term shocks that perturb financial markets and the general price level (bad harvests, financial panics, etc.). Thus, interest rates or inflation may move in the short run for many reasons other than those in the model. However, the model is useful to illustrate the fundamentals that determine interest rates and inflation in the absence of short-term disturbances.

103. The exact magnitudes calculated for required deficit reduction should also be interpreted cautiously, since they depend on many parameters whose values can only be approximated. The deficit reductions appear to be quite modest in view of the magnificent decreases in real interest rates and inflation in the simulation. This reflects the low elasticities with respect to interest rates of investment and financial asset demands implied by the results of Table 1, Annex I. A reduction in interest rates thus does not lead private credit demand to increase much, nor private financial saving to decrease greatly. This result is crucial to the results and thus would bear further study.

104. The results are also sensitive to the projected growth rate (4.5% over 1989-92) in the current simulations. A lower growth rate would decrease the financing available for a given debt ratio, and thus requires a greater deficit reduction. For example, if growth were to be only 2% over the period, then the deficit in the simulation of reduced interest rates and inflation would have to be reduced to 0.6% of GDP by 1991, as compared to the 1.3% with the higher growth rate.

VII. Conclusions

105. The fiscal adjustment during 1985-87 was impressive compared to the previous large fiscal deficits. It was due to structural changes in fiscal policy and not simply to fortuitous events such as the coffee boom. Although losses of public financial institutions were important in some other Latin American countries, there is no direct evidence that they were a major factor in Colombia. A small quasi-fiscal loss of Banco de la República and other public financial institutions is suggested by the data, but it was not the dominant fact in fiscal behavior.

106. Although the fiscal adjustment was impressive (in flow terms), it fell short of actually improving the net financial position of the Government. Total public debt as a percent of GDP was roughly unchanged from its 1984 value at the end of 1987, even when we correct for the effect of currency devaluation on dollar-denominated instruments. Public development lending as a ratio to GDP fell slightly from 1984 to 1987.

107. Perhaps in part because of this public debt behavior, real interest rates remained very high, while inflation accelerated slightly. To build upon the adjustment achieved thus far would likely require reductions in interest rates and inflation. The model presents attempts to calculate the fiscal deficit reductions that would be necessary to achieve this objective.

108. The results of the simulations suggest that difficult challenges will be faced by fiscal policy in the years ahead. To reduce interest rates to more manageable levels would require continued reduction in the fiscal deficit, below levels currently envisaged. To also attain the laudable goal of inflation reduction would require even tighter fiscal policy. However, the deficit magnitudes suggested do not seem out of reach, even if we allow for uncertainty as to the exact figures. This suggests that in addition to the commendable efforts shown thus far, continued policy initiative would be very helpful in confronting the fiscal challenges of the 1990's in Colombia.

CHAPTER III. Financial and Fiscal Policy and Private Business Investment in Colombia

I. Introduction

109. A remarkable feature of the recent economic recovery in Colombia has been the expansion of private investment outlays. After having declined precipitously during the recession years of 1982-85, total private investment, adjusted for inflation, increased at an average annual rate of 14.6% over 1986-87. The expansion has re-established the dominant position of the private sector in capital formation and growth (see Table III.1).

110. The recovery was engineered by the sharp contraction in the fiscal deficit, and by buoyant economic growth and wage restraint, which restored business profitability. However, despite this recovery, private investment in 1987 was still below its level at the onset of the economic recession in the early 1980s and still farther below the level of the early 1970s (Chart III.1). More importantly, private investment needs to grow faster than aggregate output in order to sustain a level of economic growth over the medium-term sufficient to reduce unemployment (see Chapter IV). This need was recognized in the Government's economic development plan (Plan de Economía Social, 1987). The Plan is predicated on the notion that a high rate of private investment will alleviate capacity bottlenecks, increase productivity, and thereby sustain strong economic growth and moderate inflationary pressures. The success of this strategy is critical to the country's future economic development, considering current high inflation and low growth in productivity.

111. In the near future, though, as economic activity slows down and wages catch up to inflation, business profitability is likely to be reduced, and the pace of recovery in private investment will slow. But these are short-term cyclical factors; structural determinants of private investment are far more important for sustaining the dynamism of private investment over the long-term. Chart III.1 clearly shows that the decline in private fixed investment has been secular and that it may take more than a cyclical recovery to restore private investment to the levels of the eraly 1970's.

112. There are several reasons for this secular pattern. First, the overvaluation of the real exchange rate since the 1970s depressed manufacturing and agricultural activities and their investment demand. Second, the secular rise of public investment seems to have crowded out private investment. (Chart III.2). Third, the lack of business competition due to a highly protected trade regime and a concentrated industrial structure gave firms little incentive to innovate and invest in order to stay competitive. Finally, even if there had been strong demand for new investment, it would have been greatly inhibited by the persistently high lending real interest rates, which averaged above 20% per annum during the 1980s (Table I.2 Chapter I) and by the lack of medium- and long-term finance.

113. The sharp devaluation and the restraint on public investment undertaken under the 1984 Economic Adjustment Program have removed at least partly the first two structural impediments against private investment.

TABLE III.1: Total Domestic and Private Investment
(constant 1975 prices), 1970-1987

	1970-80	1980	1981	1982	1983	1984	1985	1986	1987 p	1988 e
Growth Rate: Percent Per Annum										
Gross Domestic Investment	7.4	10.9	13.2	5.3	-2.2	-5.9	-9.6	6.7	5.9	7.8
Total Private Investment	6.6	-2.1	10.1	-2.3	0.3	-11.0	-15.0	13.9	15.3	
Percentage of Gross Domestic Product										
Gross Domestic Investment	19.2	19.7	21.8	22.7	21.9	19.9	17.5	17.2	17.4	18.1
Total Private Investment	12.8	11.8	12.7	12.3	12.1	10.5	8.6	9.4	10.2	
Memorandum: Share of Private Sector in Total Domestic Inv. (%)	66.6	60.0	58.3	54.1	55.5	52.5	49.4	53.5	58.4	

p - preliminary
e - estimated

Source: Banco de la Republica; National Department of Statistics (DANE), and National Department of Planning, (DNP).

CHART III.1

PRIVATE FIXED INVESTMENT AS % OF GDP

Residential and Non-Residential

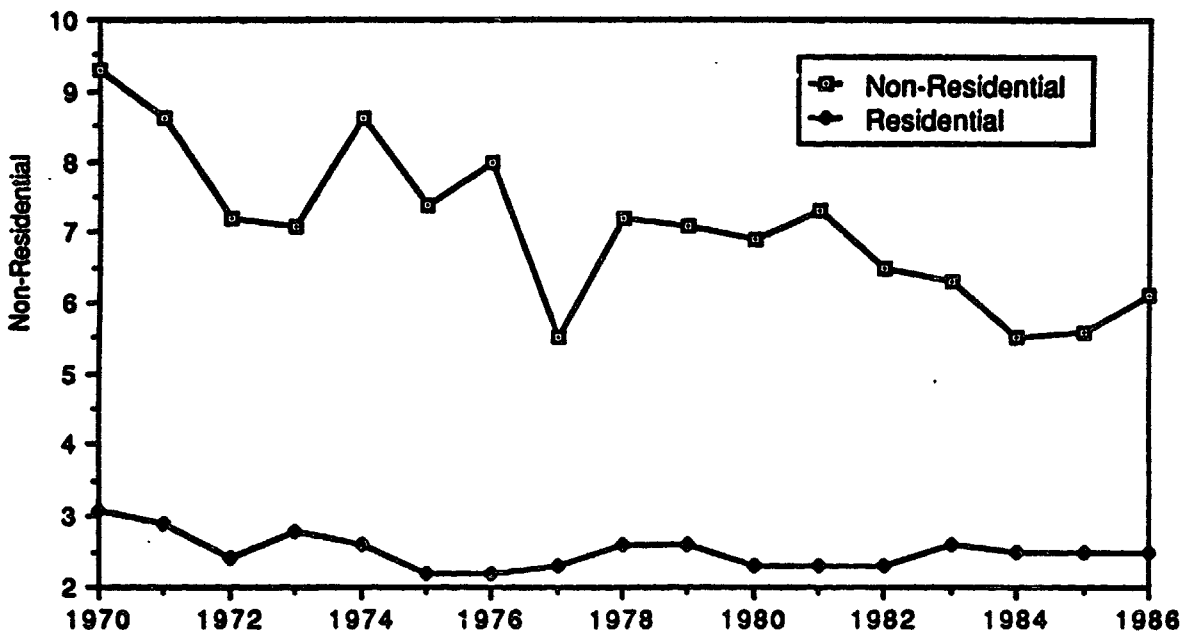
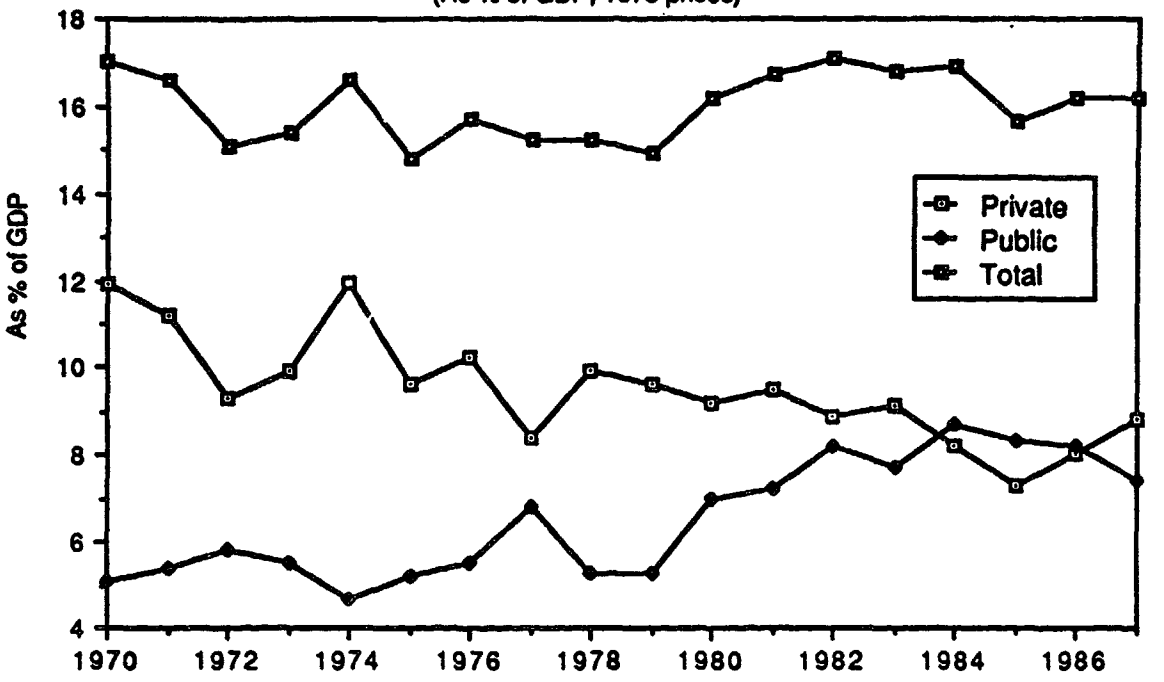


CHART III.2

REAL PRIVATE & PUBLIC FIXED INVESTMENT

(As % of GDP; 1975 prices)



However, the lack of competition, continued high interest rates, and the lack of development credit will continue to inhibit strong growth in private investment. Chapter II concluded that the fiscal adjustment initiated since 1985 needs to be continued in order to reduce interest rates. This chapter examines several aspects of a financial policy regime designed to overcome financial constraints to private investment. It also examines the impact of fiscal policy on the cost of capital, a key parameter affecting the decision to invest by businesses.

II. Financial Policy Regime and Private Investment

114. Historically, the lack of medium- and long-term credits for financing private fixed investment, and high interest rates have motivated the Government to intervene in the financial market to overcome its structural rigidities. The main objectives of the intervention have been: (i) to supplement the capacity of financial institutions to supply medium- and long-term capital to the industrial and agricultural sectors, i.e., to perform "term-transformation" of credits; (ii) to reallocate resources towards priority sectors and activities; and (iii) to deploy finance as a tool of advancing certain social/regional objectives. If a primary objective of the policy intervention is to achieve the term-transformation, what is the dimension of the short-term bias in financial intermediation? And what are the underlying causes?

115. The Short-Term Bias. Financial intermediaries in Colombia are relatively biased towards the short end of maturity spectrum. Signs of this bias are readily visible in many aspects of the financial system, including the maturity of the loan portfolio of the banking system, the virtual absence of long-term debt instruments, the small size of the equity market, and the dominant share of short-term debt in corporate capital structure. The average maturity of the banking system's loan portfolio is estimated at 4.2 years for 1970-86 when housing sector loans are included, and 2.1 when these loans are excluded.[36] The market capitalization of corporate equity in relation to GDP averaged 4% over 1980-86 in Colombia, as compared to values of 24% in Chile, 13.7% in Brazil, 48.6% in Malaysia, and an average of 31.2% in developed countries.

116. The short-term bias entails real economic costs, both in terms of higher intermediation costs resulting from higher administrative and operational costs, and in terms of failing to diversify risk. The risk on a two-year loan contract on a project with a gestation period of two years, for instance, is not equivalent to that on a one-year loan contract which can, in principle, be rolled over. Under the second arrangement, the issuing bank has the option of not rolling over the loan at the end of the first year, concentrating the risk of the investment with the borrower.

36/ Based on a classification of loan portfolio of banking systems into short, medium, and long-term, and assigning one year for short-term, three years for medium, and five years for long-term values. For the loans to the housing sector, long-term loans were assumed to have an average maturity of 12 years.

117. With regard to the short-term bias of financial intermediation in Colombia, it needs to be noted that the traditional emphasis on the role of inflation (in the context of Latin American countries) does not hold with equal force in the case of Colombia.[37] Indeed, in contrast to most other Latin American countries, the rate of inflation in Colombia has not historically been very high, neither has it been highly volatile. Quarterly data from 1980 to 1986 show that when inflation volatility is measured by the standard deviation of the unexpected component of the inflation process, the estimate for Colombia yields a value of 6.2, significantly lower than the corresponding values of 121.8 for Argentina, and 15.5 for Mexico (Table III.2). Interestingly, the estimate of inflation volatility in Colombia is strikingly close to that of Korea.

118. Thus, there appears to be no compelling evidence, at least on a comparative basis, to link inflation volatility to the short-term bias of the financial institutions. The sources and causes of the problem may reside elsewhere, particularly in three areas: (i) general uncertainties facing economic agents, which are associated with security conditions in the country and with the traditional focus on short-term macroeconomic policy; (ii) discriminatory regulatory practices and wide disparities among different financial institutions with regard to reserve requirements and forced investment, which have hindered competition and innovation of longer-term deposit instruments and facilities; and (iii) the lack of secondary markets in which financial instruments with varying maturities can be traded.

119. Directed Credit Programs. Directed credit has been the main instrument of Government intervention in the financial market. Table III.3 shows the recent evolution of directed credit programs over 1980-87, based on the year-end outstanding volume of credit extended to the business and agricultural sector to finance investment (working capital and fixed assets), and for export expansion. The directed credit programs include Fondo Financiero Agropecuario (FFAP), Fondo Financiero Industrial (FFI), and Fondo para Inversiones Privadas (FIP), all administered by the Banco de la República, and through the Fondo de Promocion de Exportaciones (PROEXPO), which is administered by another government agency.[38] Included under the rubric of directed credit programs are external credit lines supported by World Bank and IDB loans which have also been administered by the BR and channelled primarily through Corporaciones Financieras (CFs). The outstanding

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37/ High and variable inflation is thought, according to this line of argument, to increase overall uncertainty and to obscure the identification of different sources and nature of risk. For example, the conventional decomposition of risk associated with financial transactions into various components of interest rate risk, business risk, regulatory risk, is rendered meaningless when inflation exceeds a certain threshold and when its variability swamps other dimensions of risk. Under these circumstances, financial instruments tend to be overwhelmingly concentrated in the short-end of the maturity spectrum.

38/ The data exclude credits through the Fondo de Capitalizacion Empresarial (FCE) on the grounds that this line finances purchase of company shares by individuals and, hence, is not comparable with other official credit lines which are in essence debt capital, whether they originate from foreign or domestic sources.

Table III.2: Inflation Variability in Colombia and a Selected Number of Developing and Developed Countries

Developing Countries			Developed Countries		
	Autoregression Coefficient 1/	Inflation Shocks 2/	Autoregression Coefficient 1/		Inflation Shocks 2/
Argentina	0.98	121.80	Canada	0.79	1.90
Brazil	1.24	14.60	France	0.75	1.90
Chile	0.79	90.30	Germany	0.78	1.20
Colombia	0.63	6.20	Italy	0.82	3.40
India	0.24	7.10	Japan	0.58	4.10
Israel	0.97	56.50	Netherlands	0.67	1.90
Korea	0.51	6.90	Spain	0.80	3.20
Malaysia	0.42	3.80	Sweden	0.66	2.30
Mexico	0.84	15.50	UK.	0.68	4.20
Philippines	0.18	11.50	USA	0.68	2.30
Venezuela	0.75	3.60			
Zimbabwe	0.53	5.60			
AVERAGE	0.67	28.62	AVERAGE	0.72	2.64

Notes: 1/ This is the estimated coefficient (a_1) on lagged inflation in a first-order autoregression scheme of the form, $X_t = A_0+A_1X_{t-1}+U_t$, where X_t is rate of inflation in CPI, and U_t is an error term. Thus, the higher the value of A_1 the higher the degree of inflation variability. In the extreme case that $A_1 = 1$, inflation follows a random walks.

2/ Inflation shock is the standard deviation of the residual of the error term in the autoregression on equation described above.

Sources: Based on data from IMF, International Financial Statistics

Table III.3: Directed Credit: Recent Evolution and Relative Significance.
(In Billions of Colombian Pesos and in percent)
End of Year: 1980-1987.

	1980	1981	1982	1983	1984	1985	1986	1987
1. Total Directed Credit	64.5	81.6	115.9	147.8	188.1	230.9	299.2	n.a.
1.1. Development Credit (Fondos Financieros)	52.3	67.3	94.0	122.5	157.5	186.7	236.6	305.1
a. FFI	3.9	3.8	4.8	5.9	8.6	8.3	7.9	8.7
b. FIP	3.1	3.5	5.2	7.7	7.8	7.4	8.2	9.6
c. PROEXPO	22.5	31.9	45.3	57.4	73.4	87.1	118.2	n.a.
d. FFA	22.9	28.2	38.7	51.6	67.7	84.0	102.3	123.4
1.2. External Credit	12.2	14.3	21.9	25.3	30.6	44.2	62.6	n.a.
2. Total Banking System Credit	343.9	480.3	598.9	734.9	840.8	1021.3	1362.5	1843.2
3. Directed Credit/Tot. Bkg System Credit (%)	18.8	17.0	19.4	20.1	22.4	22.6	22.0	n.a.
4. Directed Credit/GDP (%)	4.1	4.1	4.6	4.8	4.9	4.6	4.5	n.a.
5. Directed Credit in Constant 1980 Prices	64.5	66.4	75.7	80.2	83.5	82.1	82.8	n.a.

Notes and Sources:

1/ Total Directed Credit=Development Credit (Fondos Financieros) plus external credit
2/ Deflated by GDP implicit price deflator

Source: Staff estimates based on data from The Banco de la Republica.

volume of all these credit lines amounted at the end of 1986 to Col$300 billion (4.5 percent of GDP), which accounted for 22 percent of total outstanding credit of formal financial markets. Of this amount, roughly 80 percent is accounted for by the development credits (Fondos Financieros), which are financed primarily by taxing the financial institutions through excessive reserve requirements or forced investments and, in the case of PROEXPO, by levies on imports.

120. Table III.4 describes the evolution of development credits (Fondos Financieros) from 1976 to 1987, and reveals two important facts. The volume of total credit facilitated through official funds (Fondos Financieros) has increased in nominal terms from Col$15.4 billion in 1976 (2.9% of GDP) to Col$305.1 billion (3.5% of GDP) in 1987. In relation to total credit market activity, however, the volume of official funds has tended to decline during this period, from an average of 24.1% in the second half of the 1970s to 16.6% in 1987. More than 40 percent of the total volume of official funds has been channeled to the agricultural sector through the FFAP (in 1986, 52% of total institutional credit extended to the agricultural sector was through FFAP). In contrast, the share of industry in development credits relative to its total demand for credit amounted in the same year to 5.7 percent excluding PROEXPO.

121. Interest rate subsidies are an important aspect of directed credit programs in Colombia, averaging 20.5% for 1976-86 (see Table III.5). In 1987, however, as a result of linking lending rates of industrial and other credit lines to the DTF rate (a market-determined composite deposit rate), interest subsidies dropped sharply to 10% for development credits as a whole.

122. The FFAP credits are also distinguished by high interest rate subsidies. The administered borrowing rate on loans secured through the FFAP in 1985, for instance, was 21%, as compared to corresponding rates of 33.8% and 32.3% applied to loans directed to industry through the FIP and FFI respectively. Agriculture credit subsidies have been perceived by the agricultural community as necessary compensation for the discrimination against the agricultural sector from macroeconomic and commercial policies.[39] Nevertheless, at the end of December 1988, the Monetary Board passed a resolution to start basing the medium- and long-term lending rates applied to FFAP credits also on the DTF. This is a major step forward towards rationalizing the interest rate structure on FFAP credits. (The structure of lending interest rates of FFAP for 1989 in comparison with 1988 is given in Table III.6.)

123. Consequences of Intervention. Although directed credit programs are intended to support private investment through the provision of sufficient development credits, their operations have also generated several negative consequences in the financial market that could have hurt private investment.

124. First, there is anecdotal evidence that the availability of subsidized credits through development funds has encouraged firms to arbitrage in the financial market by borrowing development funds and investing in financial paper at higher rates of return. In this case, development credits

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39/ See "The Political Economy of Agricultural Pricing Policies: Colombia 1960-63", Jorge García García, Bogotá, December 1987, p. 13.

Table III.4: Outstanding Development Credits to Business Private Sector
(In Billions of Colombian Pesos and in percent)
End of Year: 1976-1987.

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
1 Development Credit (Fondos Financieros)	15.4	27.1	38.4	47.5	52 3	67 3	94 0	122.5	157.5	186.7	236.6	305.1
1a. FFA	7.5	16.6	23.7	29 5	22 9	28 2	38.7	51.6	67.7	84.8	102.3	123.4
2. Development Credit/GDP (%)	2.9	3.8	4.2	4.0	3.3	3.4	3 8	4.0	4.8	3.8	3 5	3.5
3. Development Credit/Tot.Institutional Credit (%)	19.0	23.1	25.9	28 6	15.2	14.0	15 7	16 7	18 7	18 3	17.4	16.6

Source: Staff estimates based on data from The Banco de la Republica.

TABLE III.5

Interest Rates and Subsidies, 1976-1987

Year	Lending Interest Rates: Fin. Institutions (1)	Lending Interest Rates: Development Funds (2)	Interest Subsidies (1) - (2)
1976	38.1	21.0	17.1
1977	38.1	17.6	20.5
1978	36.5	17.4	19.1
1979	36.6	20.9	15.7
1980	40.2	22.7	17.5
1981	47.3	22.7	24.6
1982	47.9	22.6	25.3
1983	43.7	21.5	22.2
1984	44.7	22.6	22.1
1985	45.3	22.6	22.7
1986	41.2	22.6	18.6
1987	41.4	31.4	10.0
Average	41.8	22.1	19.6

Source: Santiago Herrera, "El Mercado de Capitales y la Política Financiera en Colombia", Macroeconomía: Mercado de Capitales y Negocio Financiero, Asociación Bancaria, 1989 (Forthcoming).

TABLE III.6

AGRICULTURAL FINANCIAL FUND (FFAP) 1/
(Interest Rates)

Type of Crop	1988	1989	89/88 (%)
Semestral	26.70	29.96	12.2
Short Term	27.40	29.96	9.3
Medium Term	27.74	30.25 2/	16.3
Long Term	29.16	30.25 2/	10.6

1/ Fondo Financiero Agropecuario
2/ DTF

Source: Banco de la República

would not have been used to finance capital formation. This factor may explain the relatively high share of financial assets on the corporate balance sheet. Table III.7 shows that financial assets accounted for 16.8% of corporate total assets during 1980-85, which was high by international standards: about twice as high as the corresponding ratio observed in developed countries, such as the U.S.A., Japan, and the U.K. It is also higher than the corresponding figure in Korea, where the non-financial sector is known to engage in a high degree of financial intermediation. As a result of these financial intermediation activities, financial revenues have become an important component of business' total income. Over the 1983-86 period, interest incomes on average contributed to about 47.8% to total income or about 150 billion pesos (Table III.8).

125. Second, the availability of "cheap" funds through the directed credit programs may also have contributed to another distinctive feature of Colombia's corporate financial structure, i.e., the concentration of total assets and liabilities in the form of debt.[40] Table III.9 shows that total liabilities in 1985, including borrowings and trade payables, accounted for about 80% of aggregate non-financial sector total assets and liabilities combined, or four times as much as the total amount of shareholders' equity. The corporate sector in Colombia is thus highly leveraged.[41] About half of the corporate debt is concentrated at the short-end of the maturity spectrum. Of this, roughly one-third is accounted for by trade payables, and the rest by short-term borrowing from financial institutions. Given the paucity of direct borrowing through bond issues, almost all long-term liabilities are in the form of borrowing, mostly from domestic financial institutions. Total loans from the domestic financial institutions to the corporate sector account for about 40% of total corporate liabilities. The bias against equity is recent, however: in the early 1970s, the ratio of corporate debt to total assets and liabilities altogether was only about half of the 1985 level, or 40%. Needless to say, this development has not been conducive to the development of equity markets, which could have been developed as an important alternative for financing business investment.

126. Third, agricultural and industrial activities funded by the directed programs have been financed by requiring financial institutions to invest a certain amount of their deposits in low-yielding Government papers and maintain high reserve requirements (Inversiones Sustitutivas del Encaje, or ISEs). This amounts to a taxation on the financial system, resulting in an increase in the wedge between savings and lending interest rates, and eventually in either higher lending rates or lower deposit rates. It is estimated that about half of the current high interest spread of ten percent

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40/ Tax policy, which will be discussed below, also has contributed to the debt bias.

41/ Classified by asset size, very small and very large firms are relatively less leveraged than medium-size firms: according to the data provided by the Superintendencia de Sociedades, firms with assets less than Col$200 million had an average debt-equity ratio of 2.75 during 1985-86. The debt-equity ratio for large firms (with assets exceeding Col$5000 million) was 2.32. The ratio was much higher for medium-sized firms. For instance, the corresponding ratio for firms with assets ranging between Col$2000 and Col$5000 million was 4.15.

Table III.7: Colombia : Composition of Corporate Assets: Non-financial, Corporate Sector, 1980-1985
(Percentage of total Assets)

ASSETS	1980	1981	1982	1983	1984	1985	Average 1980-1985
Fixed assets	27.18	30.38	32.13	31.43	31.73	33.74	31.10
Inventories	20.73	19.25	17.90	15.45	15.28	14.45	17.18
Accts receivable	31.68	29.93	27.14	28.61	27.58	24.55	28.25
Liquid assets	6.72	7.10	6.81	6.53	7.10	5.66	6.65
	86.31	86.66	83.99	82.02	81.69	78.40	83.18
Financial assets	13.69	13.34	16.01	17.98	18.31	21.60	16.82
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Staff estimates based on Superintendencia de Sociedades, Boletin Estadistico, various issues.

Table III.8:
Sources of Business 1/ Operating Income: Billions of Peso and Percentage of Total, 1983-1986.

Year	Operating Profit		Interest Income		Total Income	
	Billion Peso	Percent	Billion Peso	Percent	Billion Peso	Percent
1983	98.38	47.49	108.76	52.51	207.14	100.00
1984	140.83	53.07	124.55	46.93	265.38	100.00
1985	180.56	50.06	180.15	49.94	360.70	100.00
1986	265.24	58.33	189.49	41.67	454.72	100.00
Average	171.25	52.24	150.74	47.76	321.99	100.00

Note and Sources
1/ Refers to non-financial corporate sector as a whole.

Source: Staff estimates based on Superintendencia de Sociedades, Boletin Estadistico, various issues.

Table III.9:
Composition of Liability Side of Balance Sheet for Colombian Non-Financial Corporate Sector Year End 1985, Percentage of Total Equity and Liabilities

1. Short Term Liabilities	37.65
a. Trade Payables	12.18
b. Short term borrowing	23.03
c. Other liabilities	2.43
2. Long Term Liabilities	34.73
a. Bonds	0.15
b. Long term borrowing	34.58
3. Other Liabilities	7.91
4. Total Liabilities	80.29
5. Shareholders Equity	19.71
6. Total Liabilities and Shareholders Equity	100.00

Source: Staff estimate based on data from Superintendencia de Sociedades

is due to this factor. In 1987, forced investments and ISEs represented 21% of the total deposits of commercial banks; 28.9% of financial development banks (CFs); and 6.3% of savings and loan associations (CAVIs). As of May 1988, the average yield of these investments was 16.5% for commercial banks; 19.6% for CAVIs and 25.5% for CFs and trade finance companies (CFCs). Since then, yields on forced investment have been increased (about 20% for banks), but they are still negative in real terms and well below market lending rates.

127. Fourth, the subsidized loans have encouraged capital-intensive projects, resulting in a rising capital-output ratio in the economy as a whole (Chapter IV, Section I), and in discrimination against the use of labor. On the other hand, the induced higher interest rates at the free end of the market encourage the adoption of overly labor-intensive techniques, resulting in a slowdown of productivity growth and incomes for the disadvantaged borrowers.

128. Finally, the directed credit programs lock up a substantial share of the stock of credit, thereby impairing the financial system's ability to allocate credits efficiently, particularly in a changing environment.

III. Fiscal Policy and Private Investment

129. Until the 1986 tax reform, fiscal policy lowered the cost of capital substantially by allowing corporations to fully deduct interest payments on the use of debt against their income taxes. This is because the inflationary component of interest payments amounts, in essence, to a payment of principal; the higher the inflation, the greater the reduction in the real cost of the debt conferred by the tax policy.

130. The significance of this inflation-related tax shield for the period prior to the tax reform of 1986 in Colombia is demonstrated in Table III.10. Without the inflation tax shield, the real cost of debt would have been much higher (column 1). In 1985, for instance, the real cost of borrowing from financial institutions would have been 12.2%, as compared to the effective rate of 2.3%.

131. The tax reform of 1986, however, initiated the phasing out of the deductibility of the inflationary component of interest payments over a ten-year period. Thus, by 1996, only real interest payments will be eligible for deduction against income taxes,[42] effectively removing a tax subsidy on

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42/ To formalize the scheme let the parameter "a" denote the allowable proportion of inflation which is tax deductible in a particular year, and let the real cost of debt in that year be denoted by "c"; it can be shown, that, "c" is given by:

$$c = (1-u)r - aux \qquad (1)$$

where "u" is the corporate tax rate, "r" is the real rate of interest and "x" is the rate of inflation.

It will be seen from equation (1) that when a = 1, that is, under the previous tax regime, the real cost of debt would be reduced by the full

Continued on next page

business investment. The impact of this measure on business investment is cushioned by other provisions of the tax reform including: (i) the elimination of dividend income taxes; (ii) the reduction in the corporate income tax rate from 40% to 30%; and (iii) a more generous depreciation allowance. However, the overall impact of the tax reform on the cost of capital during the interim period remains significant, as is analyzed below.

132. Cost of Capital. The cost of debt is only one component of the overall cost of capital which is relevant for investment decisions. For investment in fixed assets, i.e. plant, machinery, and equipment, the other components of the cost of capital are: the cost of equity, the acquisition price of capital, (acquisition cost of machinery and equipment, and taxation and depreciation allowances), and the cost of asset decay (real depreciation and the obsolescence of fixed assets). The methodology for incorporating the influence of all these factors on the cost of capital under the Colombia tax code is contained in Annex II, where a general expression for the real cost of capital for the non-financial corporate sector is derived. This annex also contains the various assumptions underlying the estimates of the real cost of capital for corporations in Colombia.

133. The estimated impact of the 1986 tax reform on the cost of capital over 1986-96 is reported in Table III.11, which also contains estimates of the cost of capital for 1981-1985 for comparison. Two scenarios are derived: the first assumes that the aggregate debt-capital ratio remains constant at its historically estimated value of 0.86, and the second assumes that it declines by 5% per year due to substitution of equity for debt. In the first scenario, the real cost of capital increases from an average value of 14.6% in 1981-85 period to 22.5% in 1996. This increase is somewhat moderated in the second scenario by the posited reduction in the corporate debt ratio. The difference between scenarios is not very notable, amounting to 1.2 percentage points in the final year of simulation exercise. The increase between 1986 and 1993 is, however, quite considerable. These results, however, must be interpreted with caution because they depend, in part, upon the value assumed for the debt-capital ratio or on the degree of substitution between debt and equity, the very parameter that the tax reform is aimed at changing.

134. In eliminating the long-standing bias against equity financing by shifting tax incentives toward equity financing, the tax reform aims at reversing the past trend of high corporate leverage and bringing about a more balanced corporate capital structure. However, the success of this scheme also depends upon the supply capacity of the equity market. The family-based structure of corporate ownership and the desire to maintain operating control make company managements very hesitant to resort to outside equity financing, even if relative cost considerations favor such a financing strategy.[43]

Continued from previous page
value of the inflation tax shield, i.e., ux. But after the tax reform of 1986, "a" will gradually decline by 10% each year to reach zero in 1996. At that time, the real cost of debt will be c=(1-u)r indicating an overall increase of ux.

43/ Concerns have also been raised regarding the possible control of corporations by illegal businesses.

Table III.10: The Impact of Inflation on Real Marginal Cost of Debt (1970-1985)

Year	After Tax Real Rate of Interest (1)	Inflation Tax Shield (2)	Real Effective Rate (3)
1970	7.71	3.53	4.18
1971	9.26	3.71	5.55
1972	1.28	4.70	-3.42
1973	-3.09	7.12	-10.21
1974	0.74	10.19	-9.44
1975	9.13	9.15	-0.02
1976	7.54	10.21	-2.67
1977	4.65	11.58	-6.93
1978	12.93	6.90	6.03
1979	11.61	9.62	1.99
1980	10.95	11.02	-0.07
1981	14.82	9.12	5.70
1982	13.89	9.90	3.98
1983	14.00	8.15	5.85
1984	13.57	8.87	4.70
1985	12.24	9.96	2.28

Notes: More formally, the above columns are defined as:

(1) = (1-u)r
(2) = u*x
(3) = (1) - (2)

Where u is corporate tax rate, r is real rate of interest, nominal bank loan rate minus rate of inflation as measured by the GDP implicit price deflator; x is rate of inflation (GDP price deflator)

Table III.11: The 1986 Tax Reform and the Real Marginal Cost of Capital

Year	Historical Values
1981	16.4
1982	13.6
1983	16.1
1984	16.0
1985	11.1

Simulated Results

Year	Constant Debt Ratio	Changing Debt Ratio[a)]
1986	8.8	8.8
1987	14.5	14.5
1988	15.3	15.3
1989	16.6	16.7
1990	17.6	17.7
1991	18.6	18.6
1992	19.6	19.4
1993	20.5	20.1
1994	21.5	20.7
1995	22.5	21.3

a) Based on the assumption that aggregate corporate debt capital ratio declines by 5% a year, starting in 1989.

Nevertheless, the primary equity market has experienced an impressive growth over the past three years. The primary shares offered by listed companies increased by 53% and 72% in 1986 and 1987, respectively (see Table III.12), although from admittedly low levels. Also, it is not clear whether such an increase reflects the influences of higher tax incentives for equity financing, or the sheer pressure of credit shortage, which have compelled companies to consider alternatives to bank borrowing.

IV. Conclusions and Policy Implications

135. Macroeconomic Policy. Improved fiscal and exchange rate policies were the major factors underlying the strong growth in private investment during 1986-87. This investment recovery must be sustained in order for the economy to grow at a satisfactory rate over the medium-term. While the slackening of the rate of growth in 1988 would slow the pace of investment recovery, this should not be a major concern for economic policy-makers because the scope for fine-tuning business cycles to improve the investment outlook is quite limited. What is more important, particularly in light of the secular decline in private investment in Colombia, is a sound policy regime bearing on the long-term structural determinants of private investment. First, the improved fiscal and exchange rate policies should continue to be managed with the view to controlling inflation and maintaining international competitiveness. A stable macroeconomic framework is even more important during a period when business confidence in the economy appears to have been waning due to the existing security situation.[44] In addition to sustaining macroeconomic stability, financial, fiscal and competition policies should also be adjusted appropriately to sustain the growth in private investment over the long-run.

136. Financial Policy. This Chapter revealed several negative aspects of the current financial policy with regard to private investment, and pointed to a need for financial incentives to be overhauled. Providing subsidized development credits through direct credit programs to achieve term transformation may have contributed to the high corporate debt-equity ratios, retarded the development of the long-term capital market, encouraged firms to invest in financial paper at the expense of plant and equipment, raised market lending rates and/or reduced deposit rates (and, therefore, increased costs of financial intermediation), raised the capital/output ratio at the expense of labor, and slowed the productivity growth of borrowers with no access to direct credit programs.

137. As noted earlier, the share of directed credits in relation to total credit supply has been declining over time. Meanwhile, the Government has gradually reduced interest subsidies on directed credits through indexing their interest rates on the market-determined interest rate, DTF. The reduction of interest subsidies has allowed the Government to raise yields on

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44/ According to an article published in El Tiempo (2/27/89), FEDESARROLLO's latest business survey shows that last December only 24% of businessmen considered the economic environment favorable compared with 78% in March and 35% of those surveyed considered it unfavorable compared with 9% in March. Regarding the socio-political environment, 54% of the surveyed people classified it as unfavorable.

TABLE III.12:

Primary Share Offering by Non-Financial Listed Companies : 1985-1987

(In Billions of Colombian Pesos & Annual Percent Change)

	In Billions of Colombian Pesos			Annual Percent Change	
	1985	1986	1987	1986/85	1987/86
1. Shares	8.71	13.34	23.03	53.09	72.66
2. Convertible Bonds	4.53	4.88	2.08	7.73	-57.48
3. Total	13.24	18.22	25.10	37.57	37.80

Source: Staff Estimate Based on Data from the Comision Nacional de Valores de Colombia, Informe de Labores, 1987-88.

forced investments and lower reserve requirements of financial institutions. According to the Central Bank, real returns on mandatory investments have steadily improved since the middle of 1970s, from -11.0% in 1974 to -4.5% in 1984-88. The share of forced investment as a proportion of assets for the banking system had also fallen steadily until 1983/84 when it appeared to have stabilized. For instance, the average share for commercial banks fell from 82.1% in 1980 to 50.7% in 1984. In addition, the Government has also made the forced investment papers negotiable and permitted about half of reserve requirements to be met by them. These measures have improved the profitability of financial institutions and increased the flexibility of managing their assets, which should have contributed to the reduction of the intermediation cost.

138. Despite the steady improvements in financial policy, much remains to be done. The intermediation cost, at around 10 percent, remains high by international standards, and approximately half of this cost can be attributed to mandatory investments which carry negative real rate of return. Although interest rates on development credits have become variable and positive in real terms, the difference between directed industrial credit rates and free interest rates remains at about 9% for lending rates and 10-13% for borrowing rates. The difference is greater for agricultural credits. The segmentation between regulated and free rates thus remains significant, which not only affects the performance of banks but also distorts the allocation of credit.

139. While the directed development credit could be justified on grounds of the paucity of the much needed capital for financing fixed investment, providing the credit through interest subsidies would appear to be difficult to justify for the reasons discussed above. The case for subsidized agricultural credit lines is further weakened by the fact that this credit lines finance mainly the purchases of working capital instead of fixed capital. When interest rates on development credits gradually approach free rates, the credit demand for working capital should better be financed by commercial banks which are specialized financial institutions for financing such credit needs. Therefore, credit subsidies should be continuously reduced and completely eliminated eventually. Until the elimination of such subsidies, it is preferable to recognize the subsidy explicitly in the budget of the Government. Recently, the Ministry of Agriculture and the Central Bank have signed a contract under which losses of the agricultural credit line (FFAP) are to be charged to the budget of the Ministry of Agriculture. This is a welcome step in the right direction.

140. Mandatory investments are not the only important reason for the high intermediation cost of financial institutions in Colombia. The other important reason is the oligopolistic structure of the banking system which stifles competition and reduces efficiency. The opening-up of Colombia's financial sector to foreign investment, currently being considered by the Congress, is an effective measure to raise efficiency and reduce the operational costs of financial institutions.

141. Fiscal Policy. The 1986 tax reform corrected the long-term bias in fiscal policy against equity financing. This should lead, in time, to a more balanced corporate financial structure and stimulate the development of the equity market. However, it could also increase the cost of capital significantly over the medium-term, despite the 10 year phasing-out period, increasing the urgency of reducing interest rates. If interest rates cannot

be substantially reduced, other offsetting measures such as lengthening the phase-out period, and replacing the current historical cost accounting system might be considered.[45] The Government recently, through a decree (Decreto No. 2686, dated 12/26/88), has frozen the portion of interest payments that is not subject to deduction at the 1988 level of 30% for a four-year period: 1988-1991. After that period, the interest deductibility will be reduced by 10 percentage points per year until it is completely eliminated in 1998.

142. Competition Policy. Financial and fiscal policy regimes are important for business investment because they affect incentives. Equally important, however, is the need to invest in order to improve productivity and hence profitability. The current trade regime and industrial structure reward many firms with excess profits without requiring them to invest continuously to improve productivity. Liberalization of external and domestic trade to stimulate competition among firms would therefore represent important steps in ensuring a secular recovery in private investment and hence an improvement in long-term growth prospects.

45/ Replacement cost accounting would reduce corporate taxes by recognizing that the current accounting system understates the economic cost of a portion of fixed assets that is used up during the process of production due to inflation.

CHAPTER IV. Productivity Growth, Employment, Development Strategy

I. Introduction

143. The primary sources of long-term per capita economic growth are capital accumulation (per capita) and total factor productivity growth.[46] Policy issues related to capital accumulation in the private sector were examined in the previous chapter. The first section of this chapter discusses the sources of economic growth in Colombia, focusing on the role of total factor productivity. The second section studies the relationship between aggregate economic growth and unemployment. It will then assess the Government's strategy of reducing unemployment and alleviating urban poverty through sustaining strong economic growth. The last section of the chapter develops two economic growth scenarios based upon two development strategies. The first, Scenario A, assumes that the primary source of economic growth is capital accumulation, and reflects the experience of economic growth in Colombia of roughly the past 10 years. The second scenario, Scenario B, in contrast, assumes that development strategy will focus on raising total factor productivity growth as an important source of economic growth. Policy implications are drawn based on a comparison of the outcomes of these two development strategies.

II. Sources of Economic Growth in Colombia

144. Over the long-run, aggregate economic growth is determined by the efficiency of resource use and by the quantity of inputs of resources including labor, capital, and land. The relative importance in Colombia of these sources of economic growth over the past several decades is shown in Table IV.1.

145. Several observations are in order. First, aggregate economic growth in Colombia since 1950 has been primarily a factor of inputs of capital and labor and secondly of productivity increases. Of the average economic growth rate of 4.8% per annum over 1950-86, total factor productivity (TFP) growth accounted for about 27% of the growth in total output, which is below the average for developing and developed countries.[47] Second, the contribution of TFP growth to aggregate economic growth rose during the 1950s and 1960s,

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46/ These two sources of economic growth are not necessarily separable. Capital accumulation, for instance, contributes to economic growth not only through its physical input, but also through the technology embodied by the capital.

47/ According to Chenery, Robinson and Syrquin, the contribution of TFP growth to aggregate economic growth averages 31.0% for a group of developing countries and 49.0% for a group of developed countries. Industrialization and Growth: A Comparative Study, Table 2.2 Hollis Chenery, Sherman Robinson, Moshe Syrquin, A World Bank Research Publication, 1986.

TABLE IV.1: SOURCES OF ECONOMIC GROWTH IN COLOMBIA
(Percent)

	Average Annual Rate of Growth in							Contribution of Total Factor Productivity Growth
				Factor Productivity 1/			Capital Income Share	
	Output	Employment	Capital	Labor	Capital	Total		
	g_Y	g_L	g_K	g_{YL}	g_{YK}	g_{YT}	z	g_{YT}/g_Y
1950-1957	4.9	2.5	5.2	2.4	-0.4	1.2	44.1	24.0
1958-1966	4.9	2.4	3.9	2.5	1.0	1.9	43.3	39.0
1967-1974	6.4	2.8	4.1	3.6	2.5	3.1	42.7	49.0
1974-1980	5.5	4.1	4.9	1.4	0.6	1.0	46.7	18.0
1981-1986	2.7	2.8	4.2	-0.1	-1.5	-0.6	37.8	-22.0
1950-1986	4.8	2.9	4.3	1.9	0.5	1.3	42.6	27.0
1967-1986	4.6	3.2	4.4	1.4	0.2	0.9	40.6	19.5
1970-1986	4.8	3.2	4.4	1.4	1.0	0.9	40.7	18.0
1975-1986	3.0	3.2	4.7	0.4	-1.1	-0.2	40.7	-5.0

1/ $g_{YL} = g_Y - g_L$, $g_{YK} = g_Y - g_K$, $g_{YT} = g_Y - (zg_K + (1-z)g_L)$

Source: Macroeconomic Crises, Macroeconomic Policies and Long-run Growth: Part III The Colombian Experience 1950-1986, Jorge García García, Bogotá, July 1988.

peaking at nearly 50% during 1967-74. Since the mid-1970s, TFP growth has fallen, registering 1% per annum in the second half of the 1970s and a negative 0.6% during 1981-86. These results are consistent with other recent studies on Colombia's sources of economic growth.[48] For instance, Syrquin reported that total factor productivity growth contributed 19% to output growth during 1951-73, but only 13% during 1973-1980. Ocampo showed that the contribution of total factor productivity growth to output growth rose from 26.8% during 1956-67 to 44.5% during 1967-74, but then fell sharply to only 8.3% for 1974-80 and a negative 24.6% during 1980-87.

146. Third, over the period 1950-86, the productivity of capital grew only marginally, at a rate of half a percent per annum while the growth in labor productivity was about four times as much. In the ten years ending in 1986, the productivity of capital declined at a rate of 1.1% per annum, which was a major contribution to the low overall TFP growth during this period. This negative growth in capital productivity implies that the capital-output ratio has been rising over time, i.e., capital deepening has been taking place.[49]

147. The contribution of capital to economic growth can be further decomposed into the contribution of private and public capital (Table IV.2). The contribution of each to growth is measured by the product of the investment rate (investment divided by GDP) and the incremental capital output ratio (ICOR). Between 1971 and 1983, the investment rate of public capital was 6.6 and that of private capital was 9.4. The ICOR was 7.8 for public capital and 2.9 for private capital. Private capital, therefore, accounted for 3.5% of the growth in total output and public capital for only 0.8%. Together, they contributed 4.3% of the 4.6% growth in GDP, confirming the dominant role of capital in growth.

148. The above growth accounting analysis yields several important implications for Colombia's development strategy and macroeconomic management. First, as compared with a more intensified use of factor inputs, raising total factor productivity growth leaves more scope for raising overall economic growth. This argument is consistent with the findings of Ocampo: the contribution of factor inputs to output growth had been fairly constant during the last four decades - the difference between the highest and lowest growth rate of factor input amounted to only 1.1%. Thus variations in economic growth during successive development episodes in Colombia can be mainly

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48/ "Crecimiento Económico y Cambio Estructural en Colombia: Una Comparación Internacional", Moshe Syrquin, Coyuntura Económica, pp. 207-216, 1987 and "Acumulación de Capital y Crecimiento Económico", José Antonio Ocampo, Ahorro, Inversión y Crecimiento Ecónomico, pp. 116-135, 1988.

49/ The aggregate performance on TFP growth is consistent with the preliminary findings of a recent study, commissioned under the Industrial Sector Study, on TFP growth based upon three-digit manufacturing industries. The study reports that in the 1977-80 period, sixteen of the industries had negative rates of productivity growth while twelve had positive rates. In the 1980-83 period, productivity growth was negative in twenty-six of the twenty-eight industries.

TABLE IV.2: Output Growth, Investment Rates, Capital Productivity and Sources of Economic Growth
(percent)

Period	Output Growth			Investment Rate 1/			Incremental Capital Output Ratio 2/			Sources of Economic Growth 3/		
	Public Sector (1)	Private Sector (2)	Whole Economy (3)	Public Investmt (4)	Private Investmt (5)	Whole Economy (6)	Public Sector (7)	Private Sector (8)	Whole Economy (9)	Public Capital (10)= (4)/(7)	Private Capital (11)= (5)/(8)	Residual (12)= (3)-(10)-(1)
1970				5.1	11.9	17.0						
1971	13.7	4.8	6.0	5.4	11.2	16.6	3.1	2.9	2.9	1.7	3.9	0.3
1972	4.5	8.2	7.7	5.8	9.3	15.1	9.5	1.4	2.1	0.6	6.5	0.5
1973	12.5	5.0	6.7	5.5	9.9	15.4	3.3	2.1	2.4	1.7	4.6	0.4
1974	7.2	5.5	5.7	4.7	11.9	15.8	4.6	2.5	2.9	1.0	4.4	0.3
1975	-3.7	3.4	2.3	5.2	9.6	14.8	-9.6	3.4	6.5	-0.5	2.8	0.1
1976	2.1	5.2	4.7	5.5	10.2	15.7	19.4	2.4	3.4	0.3	4.2	0.2
1977	19.5	1.7	4.2	6.8	8.4	15.2	2.6	5.9	3.7	2.6	1.4	0.2
1978	5.0	9.1	8.5	5.3	9.9	15.2	7.3	1.4	1.9	0.7	7.1	0.7
1979	16.4	3.4	5.4	5.3	9.6	14.9	2.2	3.5	2.9	2.4	2.7	0.3
1980	4.7	4.0	4.1	7.0	9.2	16.2	9.3	2.9	4.1	0.8	3.2	0.3
1981	-7.6	4.3	2.3	7.2	9.5	16.7	-5.7	2.7	7.5	-1.3	3.5	0.2
1982	2.9	0.6	0.9	8.2	8.9	17.1	18.5	18.0	18.3	0.4	0.5	0.0
1983	4.0	1.1	1.6	7.7	9.1	16.8	9.7	12.7	10.9	0.6	0.9	0.0
1984			3.4	8.7	8.2	16.9			5.4			
1985			3.1	8.3	7.3	15.6			5.3			
1986 p			5.1	8.2	8.0	16.2			3.4			
1987 e			5.4	7.4	8.8	16.2			3.2			
Averages (1971-83)	6.0	4.4	4.6 2/	6.6	9.4	16.0	7.8	2.9	3.9 2/	0.8	3.5	0.3

1/ Fixed investment as a proportion of GDP in constant 1975 prices, excluding financial institutions whose investment averages 0.2% of GDP in 1988.

2/ For 1971-83. The average incremental capital-output ratio is calculated by dividing the sum of investments over 1971-83, by the difference of real output in 1983 and 1971. The incremental capital output ratio of a given year is computed as the ratio between fixed investment of that year to the change in output during the year.

3/ Figures may not add up due to rounding errors.

Source: DANE and staff estimates.

explained by variations in factor productivity growth. Second, increases in productivity of capital should be given top priority, as past growth had primarily relied on increases in capital inputs rather than on the improvements in productivity of capital. This is important for debt management as well: further increasing the role of capital input in the growth process would require greater reliance on foreign capital, unless domestic savings could be raised substantially. Third, while the productivity of private capital and public capital both leave room for improvement, public capital has shown greater deterioration since the late 1970s when the Government stepped up its public investment program. Thus, continued improvements in the management of the public sector should be an important part of any growth strategy in Colombia. Finally, TFP growth carries an important implication for macroeconomic management of inflation and economic growth; higher TFP growth allows for a better inflation-growth trade-off because it brings about higher growth in potential output.

III. Economic Growth and Employment Policy

149. The Social and Economic Plan of 1987 has made poverty alleviation a top priority of the current Administration. One aspect of the Government's anti-poverty strategy focuses on aggregate economic growth. Under the strategy, economic growth is expected to lead to not only more jobs in the formal sector, but also increased income in the informal sector in as much as the latter provides services to the former (the trickle-down approach). The other aspect of the strategy is a targeted approach aiming directly at the poorer segment of the labor force, which is evaluated in a separate Bank report.[50] This section is limited to exploring only the relation between economic growth and employment/unemployment in Colombia.

Recent Trends in Employment, Unemployment, and the Labor Force

150. Urban formal unemployment for the seven largest metropolitan areas reached a peak of 14.7% in June 1986, then declined to 11.9% by June 1988. The employment gains were due mostly to the rehiring of workers who lost their jobs as a result of the recession of the early 1980s.[51] During the same period, the labor participation rate in the formal labor market has increased from 56.9% to 58.9% for the seven largest cities. Thus urban unemployment rates declined in spite of rising labor participation rates.

151. From 1984 to 1986, the economic recovery created 626,000 jobs, 92% of which were in the urban areas, and virtually all of which were in the non-manufacturing sectors (Table IV.3). The informal sector created 70,000 jobs, or approximately 12% of the total employment generated by all urban sectors. However, not all sectors gained employment during this period. Employment in the manufacturing sector declined by 7,000, despite strong recovery in thesector. Employment also declined in the public sector, including the

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50/ Colombia: Social Program and Poverty Alleviation: An Assessment of Government Initiatives, World Bank, Report No. 7271-CO, January 20, 1989.

51/ Misión de Empleo. El Problema Laboral Colombiano, Informe de la Misión Chenery, eds. Jose A. Ocampo y Manuel Ramírez, Bogotá, 1987.

TABLE IV.3

EMPLOYMENT BY SECTORS

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987●
EMPLOYMENT (In thousand persons)											
1. TOTAL URBAN	4787	5033	5268	5509	5784	5941	6046	6258	6547	6829	..
Construction	389	321	319	362	384	407	405	401	400	421	457
Government	599	622	648	675	695	702	717	738	756	782	795
Manufacturing	487	501	517	516	501	489	472	464	447	457	471
Informal Sector	1329	1349	1424	1502	1619	1735	1836	1978	2099	2248	..
Rest of Urban Sectors	1983	2240	2388	2453	2515	2608	2612	2674	2963	3171	3226
2. TOTAL AGRICULTURE F&F	2804	2912	2942	2970	2986	3021	3045	3069	3069	3115	..
3. TOTAL ECONOMY	7591	7945	8225	8578	8769	8962	9065	9310	9636	9944	..
EMPLOYMENT (As % of Total)											
1. TOTAL URBAN	62.8	63.3	64.2	65.4	65.6	66.3	66.5	67.1	67.9	68.7	..
Construction	4.1	4.0	3.9	4.2	4.4	4.5	4.4	4.3	4.2	4.2	..
Government	7.9	7.8	7.8	7.9	7.9	7.8	7.9	7.9	7.8	7.4	..
Manufacturing	6.4	6.3	6.3	6.0	5.8	5.5	5.2	5.0	4.6	4.6	..
Informal Sector	17.5	17.0	17.3	16.7	18.6	19.4	20.2	21.2	23.3	23.0	..
Rest of Urban Sectors	26.1	28.4	28.9	28.6	28.9	29.1	28.8	28.7	30.6	31.9	..
2. TOTAL AGRICULTURE F&F	36.9	36.7	35.8	34.6	34.4	33.7	33.5	32.9	32.1	31.3	..
3. TOTAL ECONOMY	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	..
MEMORANDUM											
Public Sector (In thousand persons)	745	772	804	846	855	875	898	916	913	915	948

● - Estimates

Sources: National Department of Statistics (DANE)
CORP, Area Socio-Economics

Government sector. By 1986, 69% of total employment was in urban areas, compared with 65% in 1980. The informal sector engaged 21% of total employment, the public sector 7.4% and the construction sector 4.2%. The manufacturing sector's share in total fell to 4.6% from 6.0% in 1980.

152. Employment data for 1987 are not yet complete, but the underlying trends seem to hold into 1987. Non-manufacturing employment (excluding the informal sector) grew by 1.7%, adding 55,000 jobs. Manufacturing employment increased by 3%, an improvement over the 1984-86, but only about half the rate of the overall growth of the sector. In 1987, manufacturing employment was still 20% below its peak of 1979-80 when it began to fall. The public sector also reversed its employment trend by registering a 3% increase when social expenditure under the Plan de Economía Social rose.

153. The growth of manufacturing output was a major source of economic growth during 1985-87. At the same time, manufacturing exports and other minor exports were the mainstay behind the recent strong export performance. Paradoxically, manufacturing employment did not respond to the growth in manufacturing exports and production, suggesting that the observed increase in export-orientation in manufacturing has not yet increased labor intensity in the sector. Empirical evidence points to a rising share of manufacturing output (value-added) in total output but a stagnant share of manufacturing employment in total employment, suggesting that the employment intensity of the manufacturing sector is declining vis-a-vis the rest of economy. This is supported by data on manufacturing concerns. Correlating the growth of employment with the degree of export-orientation and the growth of sales (accounting for the scale effect) for 29 manufacturing industries over two periods, 1982-83 and 1986, it is found that employment growth was not positively associated with increased export-orientation. As expected, it was found to be associated with increased sales, but even this association was not significant; a one percent increase in sales increased employment by only 0.26% on average, echoing the results discussed earlier.

Economic Growth and Unemployment

154. This section examines the relationship between aggregate economic growth and unemployment in the urban areas.[52] The relationship may be hypothesized by the following mathematical function:

$$y - yp = - [\ a\ (u - u_{-1})\ ] / [\ 1 - a\ (u - u^*)\ ]$$

where y is the rate of economic growth, yp is the potential rate of economic growth, u is the urban unemployment rate, u^* is the structural unemployment rate, and u_{-1} is the unemployment rate at the beginning of the period. The coefficient a is a positive constant.

155. This function simply says that unemployment rate is negatively associated with output growth; the higher the rate of economic growth, the lower is the unemployment and vice versa. The degree of this association

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52/ In Colombia, unemployment is identified as an urban phenomenon within the formal labor market. It is generally recognized that the informal sector and rural labor markets are flexible to absorb new entrants, frequently by depressing wages.

depends upon the value a; the higher the value a, the greater the association between output and unemployment and the greater the effect of output growth on unemployment. In addition, the function represents a relation between the unemployment rate and output growth in the short-run because both output growth and the unemployment rate have been modified by their respective long-run values: potential output growth, yp, in the case of output growth and the structural unemployment rate, u*, in the case of unemployment rate. The relation further hypothesizes that when output growth reaches its potential growth, the unemployment rate will reach its structural rate.[53]

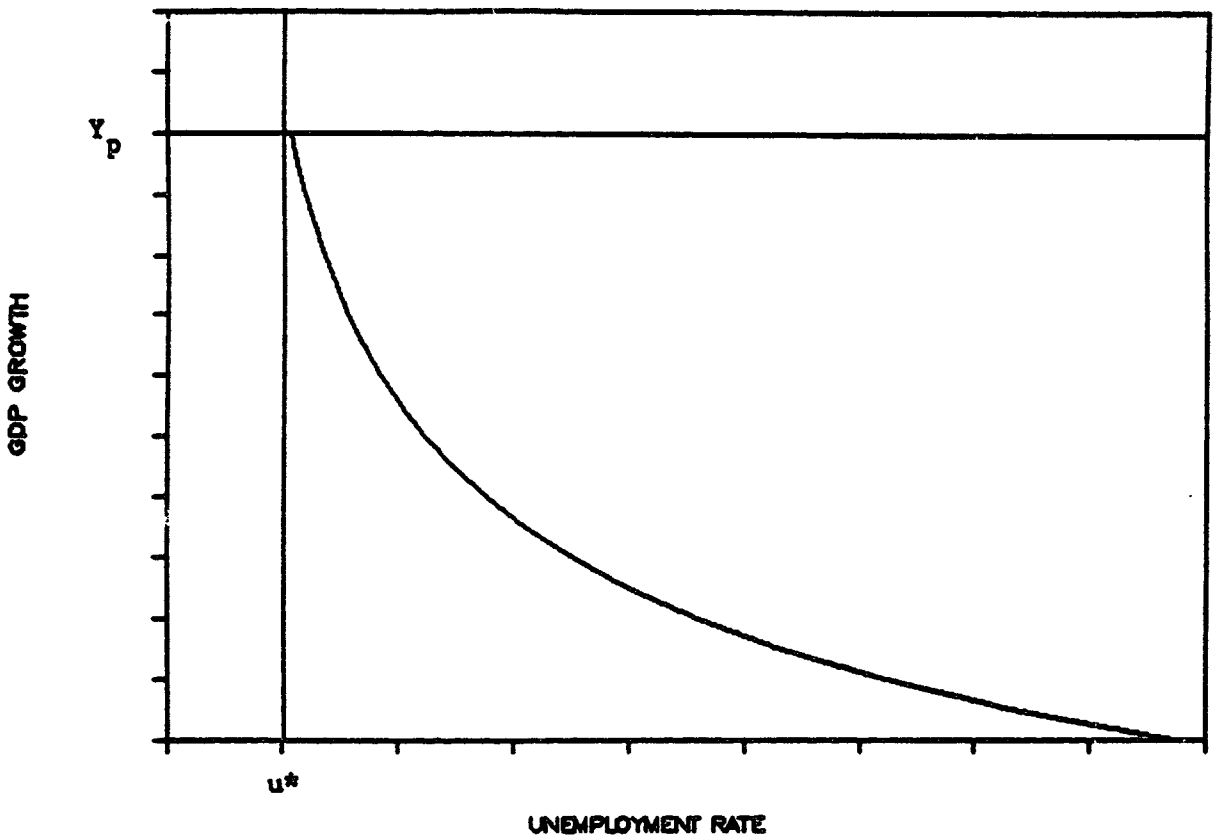
156. Using output and employment data from 1970-87 and assuming a 7% structural unemployment rate of the urban centers (based upon the Chenery Report), we estimated this relation and obtained 0.43 for the coefficient a. This coefficient implies that for every one percent increase in economic growth, say from 4% to 5% per annum, the unemployment rate declines on average by about 2 percentage points, say from 12% to 10%. However, the response of the unemployment rate to output growth (measured by the coefficient) is not linear because it also depends upon the unemployment gap (the actual unemployment rate minus the structural unemployment rate); the greater the gap, the larger the response (Chart IV.1). Thus, as the unemployment rate moves closer to the structural rate, or as the economy moves closer to full capacity, the effect of economic growth on unemployment will be smaller.

157. The estimated potential output growth was 4.5% per annum. The output-unemployment relation then suggests that if the economy starts with an unemployment rate above the structural rate, the likelihood of reducing the unemployment rate to the structural rate depends upon whether economic growth could exceed 4.5% per annum. Table IV.4 illustrates the time necessary to reduce the unemployment rate to the structural rate of 7% at different rates of economic growth. The table also computes the number of unemployed persons at different rates of economic growth. The table shows that when the economy expands at a rate of 6.2% per annum, the unemployment rate would be reduced to 7% by 1989 from the 12.2% level of 1987, and there would be some 639,000 unemployed persons. By comparison, if the economy only grows at 4.8% per annum, the 7% unemployment rate would be reached only by 1994, or five years later, and the number of unemployed persons would be 19% greater.

53/ The derivation of the relation between output growth and unemployment is given in Annex III. It should be noted that while a particular structural unemployment rate needs to be assumed for the estimation of coefficient a, the estimation result of coefficient a is invariant with respect to any particular assumption of the structural rate because coefficient a depends only on the deviation of actual unemployment rate from the structural rate, not on the absolute value of the structural rate. No distinction is made between the natural rate of unemployment and the structural rate of unemployment. Therefore, the structural rate of unemployment should be interpreted to include natural unemployment. According to the Chenery Report, the structural unemployment rate in the urban centers of Colombia is approximately 7% on average.

CHART IV.1

Aggregate Economic Growth and Unemployment Rate



Y_p - Potential GDP Growth Rate (4.5%)

u* - Structural Unemployment Rate (7.0%)

TABLE IV.4: Year by Which Urban Unemployment is Reduced to the Structural Level (7%)

GDP growth (% p.a.)	Year	Urban Unemployment (persons)	Difference with fast growth option (6.2%) (%)
6.2	1989	639,414	-*-
5.4	1990	665,630	4.1
5.0	1992	710,286	11.1
4.8	1994	757,938	18.5
4.5	after 2000	1,193,212 (1994)	86.6

Source: Table 1, Annex III.

Policy Implications

158. The estimated employment response and the observations made earlier on the capacity of labor absorption in the formal sector suggest that while aggregate economic growth is necessary for generating employment, it is by no means sufficient. Its effectiveness would approach the limit when the rate of economic growth approaches its potential, because the marginal gain in the reduction of unemployment rate would become smaller and smaller. Thus, after a period of strong economic growth, the employment policy would need to shift emphasis from focussing on economic growth to tackling structural impediments that account for Colombia's high structural unemployment rate in order to effectively reduce unemployment further without risking higher inflation.[54]

159. Among other structural factors, a recent econometric study shows that high non-wage labor costs are a major determinant of Colombia's high structural unemployment rate (cited in the last footnote). This is the result of the "cesantía" law. Table IV.5 shows that Colombia's non-wage cost share in total labor cost ranks highest among a group of middle-income developing countries.

160. As a response to "cesantía", employers have increased early lay-offs and temporary employment in order to avoid high non-wage costs. The share of temporary employment in the private sector rose from 10.6% in 1977 to 16.5% in 1987 (Table IV.6). The "cesantía" also discourages the formation of businesses in the formal sector, encouraging employment growth in the informal sector where labor regulations are not binding. Furthermore, it reduces the flexibility of labor costs and thereby also the response of employment to the changing economic environment in the formal sector. A detailed examination of distortions in manufacturing labor markets, particularly non-wage benefits, can be found in Colombia: Industrial Sector Report, World Bank Report No. 7921-CO, July 1989.

54/ In 1986, Colombia's structural unemployment rate was 2.3 times higher than that of Argentina. (See "Wage Responsiveness and Labor Market Disequilibrium", L. Riveros and R. López, WPS85, World Bank, 1988).

TABLE IV.5: Non-Wage Costs of Labor
(percentages)*

	1965	1970	1975	1980	1985
Latin America					
Argentina	0.38 (0.48)	0.38 (0.52)	0.38 (0.50)	0.46 (0.61)	0.46 (0.64)
Brazil	0.34 (0.60)	0.34 (0.58)	0.38 (0.39)	0.36 (0.38)	0.38 (0.42)
Colombia 1/	0.31 (0.10)	0.48 (0.24)	0.52 (0.49)	0.62 (0.60)	0.62 (0.69)
Chile	0.36 (0.39)	0.48 (0.48)	0.51 (0.42)	0.26 (0.25)	0.25 (0.24)
Mexico	0.37 (0.75)	0.37 (0.67)	0.39 (0.71)	0.41 (0.57)	0.45 (0.50)
Peru	0.24 (0.37)	0.24 (0.36)	0.24 (0.37)	0.25 (0.28)	0.35 (0.23)
Africa					
Kenya	n.a.	0.13 (0.89)	0.13 (0.71)	0.13 (0.62)	0.13 (0.84)
Morocco	n.a.	0.14 (0.84)	0.19 (0.92)	0.19 (0.77)	0.19 (0.79)
Malawi	n.a.	0.14 (0.91)	0.14 (0.69)	0.13 (0.64)	0.13 (0.45)
Nigeria	0.09 (0.31)	0.10 (0.29)	0.10 (0.14)	0.10 (0.15)	0.10 (0.25)
Tanzania	0.10 (0.63)	0.10 (0.68)	0.10 (0.88)	0.12 (0.89)	0.12 (0.44)
Zambia	0.09 (0.22)	0.09 (0.24)	0.09 (0.24)	0.09 (0.28)	0.09 (0.37)
Zimbabwe	0.15 (0.73)	0.15 (0.69)	0.15 (0.67)	0.19 (0.88)	0.18 (0.92)
Asia					
India	0.22 (0.95)	0.22 (1.08)	0.24 (1.24)	0.23 (1.19)	0.25 (1.08)
Hong Kong	0.11 (0.08)	0.11 (0.08)	0.15 (0.10)	0.20 (0.10)	0.20 (0.10)
Korea	0.20 (0.24)	0.20 (0.25)	0.20 (0.20)	0.20 (0.21)	0.20 (0.21)
Pakistan	0.15 (0.80)	0.15 (0.69)	0.15 (0.41)	0.15 (0.39)	0.15 (0.42)
Singapore	0.11 (0.14)	0.14 (0.08)	0.28 (0.14)	0.29 (0.12)	0.35 (0.17)
Sri Lanka	0.25 (0.71)	0.25 (0.62)	0.35 (0.63)	0.25 (0.84)	0.33 (0.38)

* NWC are expressed as a proportion of labor earnings. Between brackets, the ratio formed by the year equivalent monetary value of NWC of labor and the hourly per capita income.

1/ Non-wage costs are equal to labor compensation net of labor earnings. They include:

- Social security contributions
- Medical insurance schemes
- Vacation & other non-regular bonuses
- Days of vacation
- Payroll taxes and/or employment taxes
- Contributions to different funding schemes.

Source: "Wage Responsiveness and Labor Market Disequilibrium, L. Riveros and R. Lopez, WPS85, World Bank, 1988.

TABLE IV.6: Permanent and Temporary Employment
(Percent)

	PUBLIC SECTOR		PRIVATE SECTOR	
	Permanent	Temporary	Permanent	Temporary
1977	97.6	2.4	89.4	10.6
1978	97.5	2.5	88.7	11.3
1979	98.0	2.0	89.7	10.3
1980	97.5	2.5	89.5	10.5
1981	96.9	3.1	87.8	12.1
1982	97.1	2.9	87.7	12.3
1983	96.7	3.3	87.0	13.0
1984	96.6	3.4	84.8	15.2
1985	96.0	4.0	84.7	15.3
1986	96.0	4.0	84.0	16.0
1987e	95.8	4.2	83.5	16.5

e: Estimates

Source: National Department of Statistics (DANE)

161. Another structural factor accounting for the low employment absorption capacity in such sectors as manufacturing and mining is that the capital intensity of production is higher than can be justified by the country's labor-abundant factor endowment. Large public investments in petroleum and coal in the early 1980s were capital-intensive and did not directly contribute much to employment generation. The capital deepening mentioned earlier, however, might be partly the result of rising labor costs.

162. With these structural factors operating on the labor market, it is thus not surprising to find that the response of employment growth to sector output growth in the formal sectors was sluggish. The employment elasticity for the economy as a whole was 0.9, but for manufacturing and government it was only 0.4 during 1980-87 (see Statistical Appendix, Table A.4.6). The result is that the process of economic growth and the accompanied urbanization have "pushed" more and more employment into the informal and service sectors, thereby depressing their already lower wage levels and contributing to the widening of the wage gap between these sectors and the formal sector.[55] As recently as 1977, 43.6% of total employment was either in the informal sector (17.5%) or in other urban sectors (26.1%). By 1987, the share rose to 52.5% (informal sector 20.6%, other urban sectors 31.9%). Given that wages earned

55/ The widening of the wage gap between the informal and formal sectors cannot be explained away by skill differentials. It is suggested that the segmentation of labor markets plays a role and that cesantia contributes to the labor market segmentation. (Colombia: Country Economic Memorandum, Chapter III, October 1987, World Bank).

in the formal sector are typically large multiples of the wages in the informal sector and that manufacturing jobs pay about four times more than service jobs, this trend implies that more and more people are employed in lower-paying jobs (Table IV.7). This could have exacerbated the poverty associated with the urban informal sector.

163. The Plan de Economía Social recognizes the existence of labor market rigidities. As a partial solution, the Plan calls for re-orienting public expenditure in such a way that the neediest persons participate actively in the execution of social projects, such as highway construction and maintenance, housing, water and sewage construction. While this approach could help address part of the employment and poverty issue at the local level, by itself it does not present a long-run strategy since it does not deal with the structural issues discussed above.

IV. Two Growth Paths of the Colombian Economy over 1989-2000

164. This section compares two long-term growth paths of the Colombian economy with a view to plotting long-term growth strategy. The first growth path requires an economic growth strategy based upon the accumulation of capital as the major source of economic growth, and is called the Scenario A path. The second, the Scenario B path, does not place as much weight on capital accumulation, but more on the growth in productivity, or more efficient use of resources.

A. Scenario A Case: Assumptions

165. Economic Growth and Investment. The previous analysis indicates that capital accumulation, rather than the efficiency with which capital is employed, has been the primary source of Colombia's economic growth. The relationship between economic growth, capital accumulation, and the productivity of capital can be expressed by:

$$y = \frac{1}{\alpha_p} * i_p + \frac{i}{\alpha_B} * i_B$$

where y is the rate of economic growth; i_p and i_B are, respectively, the investment rate (investment as a proportion of GDP) of private capital and public capital; and α_p and α_B are, respectively, the incremental capital-output ratio (ICOR) for private capital and public capital, which measure the efficiency of capital use.

166. The Scenario A Case assumes that the Colombian economy grows at the estimated potential rate of 4.5% per annum. Assuming that there will be no changes in the productivity of capital over the projected period, the aggregate incremental capital-output ratio for the economy will continue to be around 4.5, the ICOR that prevailed during 1975-83. With this ICOR, the growth equation discussed above implies that the required investment rate to achieve a growth rate of 4.5% is 20.3%, as compared to an investment rate of 18% between 1986-87. Hence, the investment rate would have to rise by 2.3% of GDP over the medium-term.

TABLE IV.7

REAL AND NOMINAL WAGES BY SECTORS

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
REAL WAGES (1980=100)											
Construction	72.5	83.6	92.2	100.0	104.6	107.2	114.1	112.6	104.6	102.5	111.2
Commerce	..	..	..	100.0	103.2	108.3	109.1	109.1	104.6	113.1	119.6
Manufacturing	89.3	96.9	100.3	100.0	102.4	106.2	112.2	119.3	116.7	121.4	126.9
Public Sector	97.9	100.2	99.5	100.0	100.9	103.3	113.8	118.4	106.1	107.2	..
Agriculture 1/	93.6	102.3	106.1	100.0	99.3	96.6	98.9	98.2	96.4	100.5	103.8
Minimum Urban Wage 2/	77.4	86.7	97.6	100.0	100.1	104.9	112.4	115.9	113.4	116.4	114.6
Informal Sector	74.8	88.7	97.6	100.0	120.4	119.2	110.5	107.6	..	..	..
NOMINAL DAILY WAGES (Colombian Pesos)											
Construction	100.3	135.4	185.4	249.0	329.1	419.0	528.4	664.1	692.9	818.7	1052.3
Manufacturing	256.6	334.9	428.0	582.3	748.0	999.5	1284.2	1555.3	1918.0	2318.7	..
Public Sector	288.9	389.6	521.8	489.5	523.0	668.3	853.4	1049.0	1154.5	1468.5	..
Agriculture 1/	87.5	113.5	144.3	182.3	227.3	275.0	332.8	391.8	465.0	593.0	762.8
Minimum Urban Wage 2/	..	..	115.0	150.0	198.0	247.0	308.7	376.6	451.9	560.4	688.7

1/ Jornal Clima Frio Sin Alimentacion
2/ Urban Industrial Minimum Wage

Source: National Department of Statistics (DANE)
Reportes de la Mision Chenery for Informal Sector data

167. The Government's public investment program for 1988-90 focuses on infrastructure, education, agriculture, and social investments. The program stipulates that the investment rate will gradually rise from approximately 7% of GDP in 1987 to 9.0% in 1990, or an average of 8.5% for the period in constant 1986 dollars. Compared with an average of 8.9% during 1984-87, this investment rate represents both a restoration of the role of public investment in the economy and a shifting of investment priorities from the past focus on the energy sector (Tables IV.8 and IV.9).

168. Thus if the aggregate investment rate is to rise to 20.3% by 1990, the private investment rate would have to increase to 11.3% of GDP for an average of 11.0% of GDP during 1988-90. The Government's 1987 Plan de Economía Social reached the same conclusion on the need to raise private investment to roughly this level over the medium-term.

169. With an investment rate of 8.5% for the public sector and 11.0% for the private sector, respectively, for 1988-90, and with an ICOR of 7.8 for public investment and of 3.2 for private investment (assuming that no changes in capital efficiency are to take place), the contribution of public investment to aggregate economic growth would average 1.1% per annum and that of private investment 3.4% per annum. The total contribution to economic growth by capital would thus be 4.5% per annum, which is consistent with the originally assumed growth rate of the economy. With the share of private output in total GDP being 76%, the growth rate of the private sector would be 4.5% (3.4/0.76) and that of the public sector 4.6% (1.1/0.24). With an assumed investment rate of nearly 20% by 1991 and thereafter, the economic growth rate during the 1990s would continue at 4.5% per annum.[56]

170. This path of economic growth and investment has important implications for domestic and external financing. On the one hand, growth and investment generate demand for imports of capital goods and raw materials which constitute 80-90% of the total import requirements in Colombia. Thus, sufficient foreign exchange proceeds are needed to meet the import bill. Part of the foreign exchange can be obtained through exports and the other part by external borrowing. On the other hand, investment can be financed by domestic savings and therefore more internal savings can substitute in part for need for foreign financing. The following macro identity summarizes these relationships:

investment - savings = current account deficit = (net) external financing.

56/ The assumed ICORs of public and private sectors are those that prevailed during 1975-83, and imply an aggregate ICOR of 4.5. The assumed ICORs are reasonable because first, the aggregate ICOR during 1960-84 was 4.0, which is not very significantly more favorable than 4.5. Second, as noted, total factor productivity growth has exhibited a decline since the mid-1970s due mostly to the decline of the productivity of capital. There is no evidence to suggest that this underlying deteriorating trend has been broken, even though the economic recovery of 1986-87 has raised the total factor productivity growth. This, however, appears to be the result of improved utilization of existing capacity, rather than reflecting a fundamental change in the productivity performance.

TABLE IV.8: PUBLIC AND PRIVATE FIXED INVESTMENT
(percent of GDP at current prices)

					Assumptions			
	1984	1985	1986	1987 p	1988	1989	1990	1988-90
Public investment								
a) Macroeconomic Program	8.8	8.3	6.4	5.5	6.0	7.9	8.2	7.4
b) DANE	8.8	9.4	9.0	7.7	8.4	11.1	11.5	10.3
Private investment								
a) Macroeconomic Program	8.2	9.2	11.3	13.3				
b) DANE	8.2	8.1	8.7	11.1				
Total investment	17.0	17.5	17.7	18.8				

p - preliminary

Source: DNP, DANE, Staff estimates. DANE's investment estimates include financial institutions which were apportioned to public and private sectors according to 1:4 ratio. Private investment is derived as a residual between total investment and public investment. For 1987-1990, DANE's version of public investment is based upon the investment rate implied in the public investment program.

TABLE IV.9: PUBLIC AND PRIVATE FIXED INVESTMENT
(percent of GDP at constant 1986 prices)

					Assumptions				
	1984	1985	1986	1987 p	1988	1989	1990	1988-90 average	1984-87 average
Public investment									
a) Macroeconomic Program	10.2	7.6	6.4	5.5	5.7	7.2	7.0	6.6	7.4
b) DANE	10.6	8.8	9.0	7.1	7.3	9.2	9.0	8.5	8.9
Private investment									
a) Macroeconomic Program	7.8	8.9	11.3	12.2			13.3	12.9	10.1
b) DANE	7.4	7.7	8.7	10.6			11.3	11.0	8.6
Total investment	18.0	16.5	17.7	17.7			20.3	19.5	17.5

p - p eliminary

Source: Derived from Table IV.8. The derivation requires projections of the inflation differentials between investment goods and GDP, which are assumed to be 6.0% per annum during 1988-90. This is the average rate that prevailed during 1984-87. Private Investment is derived as a residual between total investment and public investment.

171. The examination of the consistency of economic growth and investment with the availability of domestic and foreign financing requires an analysis of both the current and capital accounts of the balance of payments.

172. The Current Account. The evolution of the current account will depend on domestic policy performance as well as on the international environment. On domestic policy, the most important indicator is the real exchange rate.[57] It is assumed that the conduct of macro economic policy will, over the medium-term, maintain the exchange rate at the level that prevailed in 1987 and that there will be no fundamental changes in other components of trade and industrial policies. The pace of import liberalization will be gradual and there will be no significant import-substitution so that the relation between output and imports of consumption goods and raw materials, on the one hand, and between investment and imports of capital goods, on the other, will follow their respective historical patterns. The degree of export-orientation, represented by the relationship between capacity output and exports, will also remain unchanged, so that the growth of manufacturing and other minor exports will be solely determined by the growth of the productive capacity of the tradable sector. The latter, in turn, is assumed to be the same as the growth rate of the private economy, i.e, about 4.5% per annum.

173. It is assumed that exchange rate and trade policies determine manufacturing and agricultural exports (minor exports), while exports of petroleum, coal, and other mineral exports over the medium-term are determined largely by existing capacity and some anticipated additions to new capacity, irrespective of exchange rate and trade policies. The past few years have witnessed a significant rise of foreign transfers, which reached US$ 1.0 billion in 1987, or 2.7% of GDP. They fell to US$ 900 million in 1988 but still are a significant source of foreign exchange. The projections assume that this level is to be maintained. Global economic growth, inflation, and interest rates are also important determinants of the current account. Global economic growth is important for the expansion of export market, particularly for minor exports. International inflation is a relevant indicator for determining international competitiveness and the terms of trade. It also directly affects the import bill. And finally, international interest rates are crucial for the calculation of debt service and for the determination of domestic interest rates. Export price, volume and global assumptions are given in Table IV.10.

174. The Capital Account. The investment and import requirements and interest payments on foreign debt can be financed by new borrowing and drawing from international reserves. At the current reserve (net) level of US$ 3,794 million, or 5.6 months of imports of goods and service payments, Colombia has some room to use part of the reserves to meet the foreign exchange needs over

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57/ The real exchange rate is defined as the price ratio between foreign tradables and domestic nontradables. This exchange rate takes into account both international competitiveness as captured by a purchasing-power type real exchange rate (such as the one used by Banco de la República) as well as the domestic terms-of-trade between tradables and nontradables (Annex IV, para. 19). The nontradable price is proxied by manufacture wages in the estimation of the export supply function.

TABLE I/.10

PRICE AND VOLUME OF COLOMBIA'S MAJOR PRIMARY EXPORTS
AND GLOBAL ECONOMIC ASSUMPTIONS

	1987	1988p	Projections 1989	1990	1992	1995	2000
EXPORT PRICES 1/							
Coffee (US$/lb)	1.11	1.25	1.29	1.32	1.44	1.64	2.08
(% Change)		(12.3)	(3.4)	(2.3)	(4.5)	(4.5)	(4.8)
Crude Oil (US$/bl)	17.21	13.51	16.51	17.00	19.39	23.61	35.71
(% Change)		(-21.5)	(22.2)	(3.0)	(6.8)	(6.8)	(8.6)
Coal (US$/ton)	27.40	30.30	32.30	34.63	39.30	48.34	65.31
(% Change)		(10.6)	(6.6)	(7.2)	(7.2)	(6.7)	(6.2)
EXPORT VOLUME 2/							
Coffee	1632.0	-12.4	-1.0	1.0	1.0	1.0	1.0
Crude Oil	943.0	-5.3	29.7	32.7	20.4	-2.7	0.0
Coal	263.0	12.5	23.1	24.1	4.2	9.0	9.0
GLOBAL ASSUMPTIONS							
(Growth rates in %)							
G-5 Real GNP	3.4	4.2	2.9	2.1	2.7	2.7	2.8
World Inflation US$ 3/	12.7	6.3	3.2	5.2	5.2	5.2	4.7
Import Prices 4/	9.7	8.0	2.9	5.5	5.5	5.5	4.4
LIBOR (US$, % p.a.)	7.3	8.1	10.5	9.8	9.2	8.4	7.3

p - Preliminary

1/ 1988-2000 figures in parenthesis are growth rates in percent.
2/ 1987 figures are in millions of US dollars. 1988-2000 figures in parenthesis are annual growth rates.
3/ Aggregate G-5 GNP Deflator.
4/ MUV Index in US$ (LDC weights)

Sources:
Export Prices - Coffee & hydrocarbon: World Bank; Coal: Carbocol & Banco de la Republica.
Export Volume - Carbocol, Ecopetrol & Banco de la Republica.
Global Assumptions - World Bank

Memorandum:

Coffee - Export volumes are expected to remain stable for the next 2-3 years although production will continue growing and peak at 14.2 million bags by 1993/94. Volume is projected under the assumption that the ICA quota system prevails. Prices are also expected to remain stable in real terms for the next years.

Crude Oil - According to ECOPETROL, production will grow until 1993-94 (600 kbd) with exports averaging 320 kbd for 1990-95. IBRD projects real increases in oil prices over the next years. The latest revised ECOPETROL projection shows that the export volume of crude oil will decrease at an annual average rate of 11.5%, starting in 1994. This projection is much more pessimistic than the one assumed in this table.

Coal - According to Carbocol, increased activity in the Cerrejon North and La Loma-Drummond venture will boost coal exports from its current level of 11.5 mill. tons to 17 mill. tons in 1990 and 40 mill. tons in 2000 with prices increasing 1.5% p.a. in real terms.

the medium-term. Historical experience in Colombia suggests that a comfortable range of reserves would be at least above four months of imports (the 1984 economic adjustment program was triggered when reserves fell to three months of imports).

175. In recent years, the bulk of Colombia's external financing needs has originated from the public sector. Multilateral institutions and commercial banks have been the major sources of external credits for the public sector. Direct foreign investment has been the principal form of capital inflow to the private sector. Most of the recent foreign investments participated in the development of the mining sector. In 1985, foreign investors invested US$ 1 billion in Colombia. This, however, was an unusual year, with the norm being a few hundred million per year. Loans have been of secondary importance in financing the external capital needs of the private sector. On a net basis, almost all foreign capital inflows have been medium and long-term. The composition of the US$17,041 million foreign debt at the end of 1987 was as follows: multilateral institutions 34.0%, commercial banks 28.7%, bilateral institutions 14.6%, suppliers credits 4.0%, private non-guaranteed debt 8.9%, and short-term debt 9.8%.

176. Colombia's external financing plan during 1989-1990 is fairly set (External Financial Needs 1989-1990, Republic of Colombia, July 1988). The plan seeks to refinance only the amortization falling due to commercial banks in 1989-90 no new money is sought. After this period, it is assumed that net external capital inflows will be sufficient to keep the economy growing at approximately 4.0% per annum while maintaining external equilibrium. This assumption implies that the average annual net inflows of external capital (excluding foreign direct investment) amount to approximately US$780 million over the period 1991-2000, of which 52% (US$403 million) is contributed by multilateral institutions, 29% (US$222 million) by commercial banks, and the rest by bilateral and suppliers credit (Table IV.11). Multilateral institutions as a group are projected to increase their debt exposure from 33% in 1988 to 39% in 2000 while commercial banks roughly maintain their exposure at 29%.

TABLE IV.11

CAPITAL INFLOWS (Net)

(Millions of US dollars)

			Projections	
	1987	1988p	1989-90*	1991-2000*
Direct Foreign Investment	287.0	187.0	330.5	424.7
Net Disbursement on MLT Debt	-81.9	559.9	344.1	774.0
Multilateral	239.7	300.4	218.2	402.7
Bilateral	16.2	66.0	89.7	81.3
Suppliers Credit	5.6	10.7	102.4	127.0
Financial Inst. & Bonds	-282.9	169.1	16.7	221.7
Private non-guaranteed	-60.5	13.7	-82.9	-58.7
Net Short-Term Capital Flow	-250.0	107.0	7.5	0.0
Memo: Current Account Balance	75.4	-352.7	-487.7	-1198.4
(As % of GDP)	0.2	-0.8	-0.9	-1.2

p - Preliminary
* - Annual averages

Sources: World Bank & Banco de la Republica

B. Scenario A Case: Policy Implications

177. The implication of the above domestic and external assumptions for the current account of the balance of payments over the period of 1988-2000 are summarized in Table IV.12.[58] First, we note that the current account deficit rises to 0.9% of GDP in 1989 and then falls continuously until 1992 when it becomes a surplus of 0.1% of GDP. After 1992, however, the current account deficit starts rising again until it reaches 1.7% of GDP by year 2000. The trade balance registers surpluses throughout the projection period, rising sharply from 2.3% of GDP in 1989 to 3.6% of GDP in 1992 and declining from that level thereafter. The performances of both the current account and the trade account are dominated by the behavior of petroleum export revenues which grow strongly prior to 1992 but taper off afterwards due to the fall of oil exports that is not compensated for by the recovery of oil prices projected after the mid-1990s.

178. The projections show that the share of crude oil exports revenue in the total merchandise export bill will rise from 13% in 1988 to 29% in 1992, the share of manufactures and other minor exports will fall slightly from 35% to 31% (of which, the share of manufactures falls from 23% to 21%), and the share of coffee will fall sharply from 30% to 21% during this period. Because of the projected fall of petroleum exports after 1992, the share of petroleum will drop to 25%, but that of manufactures and other minor exports will rise to 34% by 1995 as a result of a 10.9% growth in export value per annum. The share of coffee will drop further to 20% of merchandise exports.

179. As a result of the easing of debt-service obligations, the export boom in petroleum and coal, and the continual expansion of manufacturing and other exports, creditworthiness indicators are projected to improve throughout the 1990s. Due to the petroleum factor, greater gains will be made prior to the middle of 1990s than after. The debt-service ratio is likely to have peaked at 52.0% in 1988, and is expected to fall sharply to 28.9% by 1995 and still further to 25.3% in 2000. The debt/exports ratio which peaked at 258% in 1987, will fall to 160% in 1995 and further to 132% in 2000, helped in part by the recovery of petroleum prices. The debt/GDP ratio is also projected to decline throughout the projection period from 42% in 1987 to 30% by 1992 and then to 20.3% in 2000. These indicators suggest that the increase in external debt is sustainable in that the growing Colombian economy could generate enough future income to pay back all the debt eventually.[59]

180. The financing of the current account deficit with the assumed capital inflows implies that international reserves, expressed in terms of months of

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58/ The projection model is described in Annex IV. It should be pointed out that the projections must be considered very tentative. They are presented here merely to indicate the underlying long-term trends.

59/ The long-run sustainability of debt requires that discounted future income (before interest payments), net of initial debt, be greater than expenditures (consumption and investment). For this condition to be fulfilled, the debt/GDP should not increase over time.

TABLE IV.12

SCENARIO A

ECONOMIC GROWTH, CURRENT ACCOUNT AND DEBT SERVICE INDICATORS

	1987p	1988p	Projections 1989	1990	1991	1992	1995	1990-2000 avg
GDP (% p.a.)	5.3	3.7	4.5	4.5	4.6	4.6	4.6	4.6
GDP (US$ mill.)	41343	44568	49285	54168	59244	64795	84771	116119
Per Capita								
GDP (US$)	1267	1249	1272	1346	1368	1397	1488	1[illegible]
Consumption (% p.a.)	5.8	2.2	0.3	2.3	4.4	1.7	2.7	2.6
TRADE BALANCE	1458.9	988.4	1112.7	1248.1	1798.6	2383.6	2688.3	2235.6
As % of GDP	3.5	2.0	2.3	2.3	3.0	3.0	2.5	2.0
EXPORTS OF GOODS	5251.9	5359.4	6646.0	6797.2	7845.0	8943.5	11673.7	14138.7
Coffee	1632.0	1666.3	1644.9	1766.3	1812.7	1913.0	2248.0	2
Crude Oil	943.0	661.3	1666.3	1476.6	2023.7	2601.2	2762.0	3
Coal	263.0	327.2	429.5	571.2	623.5	696.2	1181.2	1
Minor Exports	1556.0	1834.6	2026.0	2257.0	2507.3	2788.7	3798.9	5
Manufacturing	1021.5	1218.1	1356.5	1515.3	1689.4	1879.7	2566.5	3
Other Minor Exports	534.5	6[illegible].5	670.1	742.5	817.9	901.0	1294.4	1
Other Goods	857.9	866.0	858.7	791.1	877.0	957.4	1140.0	1[illegible]
IMPORTS OF GOODS	3793.0	4401.0	4927.4	5557.0	6046.9	6644.9	8985.5	11894.0
Consumer Goods	488.0	549.0	575.0	632.6	7[illegible]1.1	776.2	1044.1	1384.0
Raw Materials & Interm.	1924.0	2329.0	2610.0	2959.3	3329.0	3767.9	5111.0	6668.5
Capital Goods	1381.0	1523.0	1740.7	1965.1	2015.2	2109.0	2829.0	3661.7
CURRENT ACCOUNT BALANCE	76.4	-352.7	-444.0	-531.1	-284.0	35.0	-1688.9	-1885.2
As % of GDP	0.2	-0.0	-0.9	-1.0	-0.3	0.1	-1.3	-1.7
DEBT SERVICE INDICATORS								
Debt Service/Exports G&S	42.7	52.0	51.0	45.5	38.0	33.0	28.9	27.1
Debt/Exports G&S	257.5	249.3	225.0	208.3	192.3	178.3	168.3	144.2
Debt/GDP	41.2	38.0	35.5	33.2	31.7	29.4	25.7	22.2
Interest/GDP	3.4	3.4	3.3	3.1	2.0	2.7	2.2	1.0
Debt Outstanding (bill US$)	17.0	17.2	17.5	18.0	18.0	19.7	21.0	24.3
International Reserves (Net in months of Imports of G & S)	5.5	5.0	5.2	5.0	5.0	6.0	5.5	3.5

p - Preliminary

Source: World Bank

imports of goods and services, will fall initially but then strengthen to 6.6 months of imports by 1992, and will average 5.6 months for 1989-92. After 1992, however, international reserves are projected to fall, averaging 3.5 months of imports of goods and services by 1996-2000 due to a growing current account deficit.

181. This scenario is particularly sensitive to the projected peaking of petroleum exports in 1992. This is because the strong growth in petroleum exports during 1987-92 will make petroleum the largest single commodity export by 1992, contributing to 29% of total merchandise exports. The exact timing of the peaking of petroleum exports cannot be predicted with certainty, but as long as petroleum exports eventually stabilize, a pattern similar to one under this scenario is likely to emerge.

182. Thus, as a result of the relatively high initial reserves and strong growth in oil and coal exports, the increase in public investment and in private investment necessary to reach 4.5% economic growth prior to the stabilization of oil exports can be adequately financed by external credits. However, if and when the growth in oil exports stabilizes around the middle of 1990s, foreign exchange could quickly become a constraint to achieving the country's growth potential.

183. The Scenario A Case requires that the real gross national savings rate (constant 1986 dollars) be increased by about 1.6% of GDP during 1989-90, from 17.6% of GDP in 1988 to 19.2% of GDP for 1990, in order to be consistent with the projected current account deficit. Correspondingly, the real gross domestic savings rate needs to increase from 19.1% of GDP to 21.1% of GDP.[60] The need for higher domestic savings could pose a challenge, considering that the national saving rate which prevailed during non-coffee boom years was about 16.5% on average. The savings issue is explored below.

C. Savings Behavior and Policy Recommendations

184. Trends in Savings. Between 1970 and 1987 Colombia's gross national savings rate (GNS) fluctuated between 13 and 22 percent of GDP, and averaged 17.8% of GDP. Although there is no obvious overall trend over this period, there does seem to be a pattern: from 1970-74 and again from 1980-84, GNS averaged about 16.5% of GDP, while during the coffee boom of 1975-79 and 1986 it averaged about 19.5%.[61] Most of the variability in the national savings rate stemmed from changes in public savings rates. Between 1970 and 1987, public savings rates have varied from as low as 2.5% of GDP to more than 8%, averaging 5.1%. Coffee booms have played a key role in raising the level of

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60/ The real savings rates have been adjusted for the change in the terms-of-trade. Since the projected real savings rates are consistent with the trade account projections, they are not comparable with the real savings estimates published by DANE. However, the terms-of-trade adjusted real national savings rate is comparable with the nominal national savings rate in Table I.5. (This is explained in Annex IV).

61/ This pattern is also apparent if the real volume of savings is examined: GNS more than doubled between 1970 and 1979, peaked in 1980 and then declined until 1983 after which it began to increase once again, peaking in 1986.

public savings, which averaged almost 7% of GDP in 1975-79 and over 8% in 1986, compared with 4.2% during 1970-74 and again during 1980-85. The public savings rate has been sharply reduced since 1986, to only 3.3% in 1988. Private savings maintained a more stable course than public savings. It had stagnated during the low growth period 1980-85, but recovered strongly during 1987-88, to reach 15.3% of GDP in 1988.

185. Private savings are generated by households and private financial and non-financial institutions (enterprise savings). Between 1970 and 1985, the latest year for which detailed figures are available, household savings on average accounted for more than two-thirds of all private savings. This was equal to between 8% and 9% of GDP and also to approximately half of gross investment. Enterprise savings averaged 4% of GDP with non-financial firms providing 3.7% and financial enterprises 0.3%. The share of household savings in total private savings has, however, declined since 1984 when it accounted for 71% of private savings, to 58% in 1985, and an estimated 47% in 1986. This seems to be the result of the combination of a decrease in the household savings rate and an increase in that of non-financial enterprises. Although few details are available, it appears that the jump in the private savings rate from 12.1% in 1985 to 14.9% in 1987-88 came mostly from enterprise savings, as the economic expansion has greatly improved the profitability of the corporate sector.

186. Foreign Savings: Foreign savings (current account deficit) have played a significant role in financing Colombia's investment needs for a number of years. In only seven of the past 18 years (seven years in which Colombia achieved a current account surplus) have foreign savings been negative; of these, the surplus exceeded 0.2% of GDP only two times and all were due to coffee booms (1977-1978). The behavior of foreign savings has mirrored the financing requirements, or the dis-saving, of the public sector. This was true for 1970-79 and again in recent years (Table I.5, Chapter I).

187. Previous analysis shows that the private savings rate in Colombia has not exhibited any visible trend over the long-term. Factors that have proven to be most relevant for determining the private savings rate are the terms-of-trade and the inflation rate (Chart IV.2).[62] To the extent that inflation has been due to the fiscal deficit (public sector dis-savings), inflation has transferred private savings to the public sector and has not necessarily raised the aggregate national savings rate. A positive real interest rate has been a necessary but not sufficient condition for raising private savings. The inflation tax, the financial sector liberalization that provided new saving instruments, as well as positive real interest rates, are probably the main reasons behind the near doubling of the personal savings rate during 1974-1980.[63]

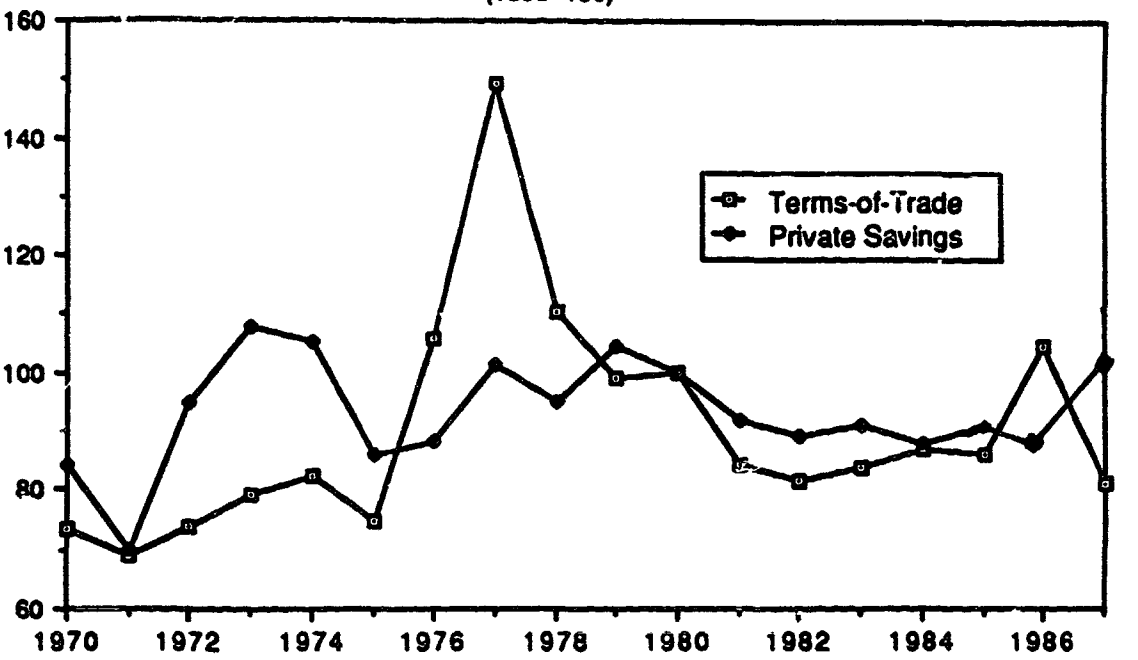
62/ With the data of 1970-86, it is estimated that a 1% improvement in the terms-of-trade would increase the private savings rate by about 0.2% and a 1% increase in CPI inflation would increase the private savings rate by 0.9%.

63/ Colombia: Manufacturing Sector Developments and Changes in Foreign Trade and Financial Policies. Volume II: Detailed Analysis and Appendices. Chapter IV. January 21, 1983. World Bank Report No. 4093-CO.

CHART IV.2

TERMS-OF-TRADE & PRIVATE SAVINGS

(1980=100)



188. Policy Recommendations. The 1986 tax reform ended the double taxation of dividends and reduced the top personal income tax rate, thus providing a positive environment for encouraging private savings. However, granting further tax incentives to savers, such as exempting interest earned on long-term savings instruments from taxation, will be limited by the need to control the fiscal deficit. Private savings can still be encouraged in a number of ways. First, a stable macroeconomic environment to ensure lower and stable inflation rates would be most helpful, because this would reduce the risks in holding financial assets, especially those with longer maturities. Second, the further development of financial and capital markets to provide an increased number of savings instruments would also be conducive over the long-run. Third, real interest rates should be kept at positive levels. For controlled rates such as for savings accounts held in Corporaciones de Ahorro y Vivienda (CAVs), this means that more flexible alignments of interest rates with inflation rates are needed. Fourth, reducing the high intermediation cost of the financial sector through the removal of interest rate subsidies, could increase the reward to savers and thus increase private savings. Fifth, the shift of the basis of taxation from income to consumption should be considered. Finally, given the long-term stability of the private savings rate, the most effective means of raising the national savings rate would be to raise the low public savings rate through a further reduction of the fiscal deficit.

D. Scenario B Path

189. The Scenario A suggests that domestic savings and foreign financing could be critical determinants for Colombia's future economic growth. For the economy to grow at about 4.5% annually over the medium-term, and given the projected availability of foreign financing, domestic savings would need to rise to finance the required increase in investments. After the strong growth in petroleum exports tapers off in the 1990s, balance of payments pressures could emerge and force the economy to grow at a much lower rate resulting in higher unemployment. Thus, Colombia's economic development in the next decade under the Scenario A would be subjected to both internal and external financing constraints. This model of economic growth relies overly upon the expansion of inputs via investment, domestic savings, and foreign capital inflows, and fails to take into account the potential contribution of increases in productivity to economic growth. It resembles an increasingly vulnerable growth strategy, not least because the uncertainty associated with external financing is not expected to recede soon. Furthermore, while the emergence of crude petroleum exports has helped export diversification, the dominance of oil and coffee in the export bill in the 1990s under this scenario would still expose the balance of payments to the high risk of price and volume instability of these two commodities.

190. In order to reduce the vulnerability of the Colombian economy to external shocks, the future growth strategy should be based less on capital formation, and more on the efficient use of capital, especially in manufacturing and agriculture. The more efficient growth path supported by lower investment would require less financing from domestic savings, fewer imports of capital and other complementary goods, hence generating a lower demand for foreign capital. In addition, by enlarging the growth potential of the economy, efficient economic growth contributes to improving the inflation and growth trade-off in the long-run.

191. Finally, if the more efficient growth path derives from higher productivity growth in the tradable goods sector, it also benefits the trade balance and relieves the balance of payments constraint. This is because an increase in productivity in the tradable goods sector concommitantly raises the rate of capacity growth. This allows increased exports without squeezing domestic consumption and reduces imports. As far as exports are concerned, capacity expansion is one of the key factors for sustaining their future growth. In the case of Colombia, this capacity effect is strengthened by a relatively high price elasticity of foreign demand for Colombian exports and a high elasticity of export growth with respect to capacity growth.[64]

192. The expansion of capacity alone would not, however, bring about a fundamental change in the behavior of exports. Without fundamental change, minor exports will not increase rapidly enough to overcome the potential foreign exchange constraint, isolate the country sufficiently from oil and coffee price shocks, or make a significant difference in the employment capacity of the manufacturing sector. This is because most of the current tradable sector production is for the domestic market. In 1987, for example, the manufacturing sector exported not more than 10% of its production. The expansion of this sector's productive capacity therefore will not increase exports significantly, unless it is accompanied by an increase in the response of export growth to capacity growth, that is an increase in the outward-orientation of exportable production. An efficient growth is therefore defined here to mean not just higher productivity and higher capacity growth but, more importantly, an increase in outward-orientation.

193. A more efficient import-competing sector, in turn, implies that domestic producers would be able to compete freely with imports in domestic markets and perhaps eventually in foreign markets as well. When domestic producers can compete freely in domestic and foreign markets, the more efficient growth path also implies that production technology employed by domestic producers will be more in line with Colombia's comparative advantage. Hence, this growth path also implies a greater rate of employment absorption compared with the Scenario A.

194. Needless to say, it is not possible to foresee with quantitative precision all the potential effects of this more efficient growth path. Nevertheless, it would be useful to contrast the implications of this growth path for major economic indicators with those of the Scenario A. This would allow us to see the likely directions, if not the precise magnitudes, of the change in these variables resulting from a development strategy that pays more attention to the efficiency of capital as the source of economic growth.

195. This case assumes that the economy grows in a more efficient way during the decade of 1990s. This is manifested through an increase in the productivity of public and private capital. In order to underscore the important role of manufacturing and agricultural sectors in mitigating the potential deterioration in the balance of payments when petroleum exports

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64/ The high price elasticity suggests that the increase in the volume of exports due to the expansion of capacity would not be much offset by the negative effect on exports due to the simultaneous fall in the export price. The econometric estimates of the price and capacity elasticities are given in Annex IV.

stabilize, in export diversification, and in generating employment, it is assumed that the productivity growth of the private sector is completely derived from its tradable sector. The increase in productivity allows the reduction of capital input. For the private sector, it is again assumed that the reduction comes from the tradable goods sector.

196. This case includes the following changes in assumptions, compared to the previous case. The public investment rate is reduced from 9% in 1990 to 7.5% in 1992 and the private investment rate from 11% to 10%, reducing the total investment rate of fixed capital by two and a half percentage points of GDP. The negative effect on growth due to lower investment rates is offset by higher productivity. For the public sector, the productivity growth of capital is assumed to contribute to growth of that sector by 0.7% per annum (ICOR declines from 7.8 to 6.8). As result, economic growth of the public sector is 4.8% per annum, which is slightly higher than the 4.5% growth of Scenario A.

197. For the private sector, increases in productivity are assumed to contribute 2.6 percentage points to that sector's growth. As a result, the tradable sector grows by almost two percentage points more than the Scenario A, or 5.6% per annum, despite a lower investment rate.[65] The higher capacity growth of the tradable sector, in turn, allows a greater expansion in manufacturing and agricultural exports (minor exports). The model calculates that this "capacity effect" would raise the volume growth rate of manufacturing exports by 5.5% per annum and that of other minor exports by 4.7% per annum, respectively, above that of the previous case. For the reasons discussed above, this effect alone would not be able to break the foreign exchange constraint on economic growth, and an increased export-orientation must take place. Therefore, the calculation of the scenario reported below assumes a greater response of export growth to capacity growth than the established relationship would indicate; this response is raised by just enough to help economic growth break the foreign exchange constraint.[66]

198. The nontradable sector is assumed to grow at the same rate as in Scenario A, i.e, 4.5% per annum. The private sector as a whole thus grows at 5.7% per annum, compared with 4.5% in Scenario A. Of this growth, 1.6% is contributed by the productivity increase, implying that private sector ICOR is reduced from 3.2 to 2.3. Combining public sector growth of 5.0% with private sector growth of 5.7% yields an average growth rate of 5.5% for the whole economy, one and one half percentage points above that in the Scenario A. Thus the economy could grow at a higher rate even with lower investment. due

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65/ The share of tradable sector GDP in private sector GDP is 62%. This is derived dividing the share of tradable goods sector GDP (mining, manufacturing, and agriculture) in total GDP, 0.47, by the share of private sector GDP in total GDP in 1987, 0.76.

66/ In practical terms, this means that the Scenario B path assumes a higher export elasticity of capacity growth for minor exports than the Scenario A path (the value is 1.4 times higher). One mechanism to bring this about is through a real devaluation. On the other hand, Scenario B does not take into account the potential effect of more efficient import-substitution on imports and therefore its positive effect on the trade balance could be greater than is assumed.

to a productivity increase of 1.4% per annum (which implies an ICOR of 3.2 for the whole economy in Scenario B, compared with 4.3 in the Scenario A).

199. The implications of Scenario B path can best be seen by comparing it with Scenario A, as summarized in Table IV.13.

200. The higher economic growth obtained under Scenario B path results in a level of per capita income 15% higher than in Scenario A by the year 2000: or US$1892 versus US$1652. The unemployment rate is much lower in Scenario B, stabilizing at the structural rate.[67] These outcomes are primarily the result of the higher productivity growth and greater outward-orientation in the tradable goods sectors.

201. The increase in productivity enables the economy to grow with less capital input, which, in turn, calls for a lower level of domestic savings and foreign capital inflows. The gross domestic savings rate is 1.0% lower during 1989-91 and the ratio of the current account deficit to GDP is 0.5% lower in years 1996-2000. The share of minor exports is greater as a result of greater outward orientation, 46% versus 38% of total merchandise exports, making the economy less dependent on oil and coffee and thus less vulnerable to their price and volume instabilities. Finally, debt service capacity is also improved, providing Colombia easier access to international capital markets in the 1990s and thus possibly resulting in a greater capital inflow and even higher economic growth.

202. The two scenarios presented here are not economic forecasts, merely two possible growth strategies. The growth strategy symbolized by Scenario A is based upon capital accumulation as the only source of economic growth, allowing no productivity increases. While this might sound extreme, it is not too far from the way the Colombian economy has been growing in the past 10 years. Scenario B strategy, by contrast, assumes a revival of productivity growth in the tradable goods sector resulting in 1.4% p.a. increase in productivity for the economy as a whole. To achieve productivity growth of this magnitude or more, from a poor productivity performance, should be a reachable objective. However, it does mean that the structural reforms that have been initiated in the recent years in the areas of fiscal, financial, budgetary, and trade policies for improving the efficiency of resource use, can be effectively implemented and sustained.

203. Finally, even though the two scenarios discussed above are not forecasts of the Colombian economy, the quantitative indicators representing each scenario do depend upon the underlying assumptions. To determine the sensitivity of projections of GDP growth and the balance of payments to variations in key parameters assumed, several additional scenarios based on Scenario A have been developed. In all these cases international reserves (expressed in months of imports of goods and services) were constrained to be the same as in Scenario A for 1991-2000 through the adjustment of the

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67/ The simulation does not take into account the possible reduction in the structural unemployment rate. If greater outward-orientation leads to a better alignment of Colombia's factor endowment with her comparative advantage, as expected, the unemployment rate may well fall below 7%.

TABLE IV.18

COMPARATIVE TABLE: SCENARIOS A & B
(Annual Averages)

		SCENARIO A		SCENARIO B	
	1990	1991-95	1996-2000	1991-95	1996-2000
Economic Growth (%)	4.5	4.0	4.0	5.5	5.5
GDP per capita (US$)	1339.0	1427.5	1585.9	487.5	1767.0
GDP (US$ Million)	54167.7	71437.0	110119.0	74574.2	122945.9
Export Volume Growth (%)	8.0	3.9	2.9	5.4	5.0
Import Volume Growth (%)	6.9	4.3	4.9	5.8	6.0
		1995	1996-2000	1995	1996-2000
			---avg---		---avg---
As a percentage of GDP					
Current Account	-1.0	-1.3	-1.7	-1.1	-1.2
Trade Account	2.3	2.5	2.0	2.7	2.5
Exports of Goods	12.5	13.1	12.0	13.3	13.4
Minor Exports	4.2	4.5	4.7	5.3	5.7
Manufacturing	2.0	3.1	3.2	3.9	4.3
Imports of Goods	10.3	10.6	10.0	10.6	10.9
External Debt	35.0	25.7	22.2	24.0	20.0
Interest Payments	3.2	2.2	1.0	2.1	1.0
Debt Service/Exports	40.3	20.9	27.1	20.9	23.0
As a percentage of Exports					
Crude Oil	21.7	25.0	20.1	22.9	10.0
Coffee	25.0	20.3	19.0	10.0	10.1
Minor Exports	33.2	34.3	30.1	39.0	45.0
Manufacturing	22.3	23.4	20.3	27.2	32.1
Others	10.9	10.9	11.0	12.4	13.7
International Reserves (In months of imports of goods & services)	4.4	5.5	5.5	5.4	5.0
Memo: Productivity Indicators (1991-2000)					
Total factor productivity increase (% p.a.)			0.0		1.4
Incremental capital-output ratio (ICOR)					
Whole economy			4.3		3.2
Public sector			7.0		0.0
Private sector			3.2		2.3

Source: World Bank

investment rate (this mechanism can be seen from the model presented in Annex IV). These cases correspond, respectively, to: (1) US$2.00 per barrel higher crude oil prices during 1990-91 and the same growth rate of oil prices for 1992-2000, (2) the breakdown in the International Coffee Agreement (ICA) in 1989-90,[68] and, (3) two percentage points higher international interest rates. These results are summarized in Table IV.14. Suffice it to say that none of these variations in assumptions has resulted in a significantly different outcome from that of Scenario A. This suggests that rather than relying on favorable shocks, the way to a significant increase in long-term growth is via policies to increase productivity.

68/ There is great uncertainty surrounding the world coffe market at present. The ICA export quota system, which has been in operation since October 1980, is to expire at the end of September 1989. Discussions so far by the current ICA members to extend the Agreement have been unsuccessful. Our judgement is that there is more than a 50% probability that the ICA will not be in operation beyond September 1989 because of disagreement among members over the allocation of the export quotas and over sales to non-members at substantial discounts. According to simulation runs made with the World Bank global coffee model, world coffee prices would likely decline sharply in the short-run in the absence of ICA. Colombian coffe exports, however, would likely increase to counter the negative impact of the fall in prices or export revenues. The projected prices and export volume of Colombian coffee for the non-ICA scenario are given below:

	1989	1990	1995	2000
Prices (US$/lb)	1.18	1.11	1.54	2.18
Volume (mill bags)	10.1	11.0	10.5	10.5

TABLE IV.14 Sensitivity Runs

I.- Scenario A

	1990	1991	1992	1993	1994	1995	1996-2000 -- avg --
GDP (% p.a.)	4.5	4.0	4.0	4.0	4.0	4.0	4.0
GDP per capita (US$)	1340	1388	1397	1427	1457	1488	1586
Current Account (US$ mill)	-531	-205	35	-537	-747	-1084	-1885
(as % of GDP)	-1.0	-0.3	0.1	-0.8	-1.0	-1.3	-1.7
Trade Balance (US$ mill)	1240	1798	2304	2111	2132	2088	2236
(as % of GDP)	2.4	3.0	3.6	3.0	2.8	2.5	2.0
International Reserves	4175	5213	6515	6981	7190	7187	5515
(as months of imports G&S)	5.0	5.8	6.6	6.4	6.0	5.5	3.5

II.- $2.00 Increase in Crude Oil Prices 1990-1991

	1990	1991	1992	1993	1994	1995	1996-2000 -- avg --
GDP (% p.a.)	4.5	4.4	4.4	4.4	4.4	4.4	4.4
GDP per capita (US$)	1340	1373	1408	1444	1480	1518	1636
Current Account (US$ mill)	-852	-17	239	-411	-663	-1059	-2283
(as % of GDP)	-0.6	0.0	0.4	-0.6	-0.8	-1.2	-2.0
Trade Balance (US$ mill)	1414	1981	2501	2236	2227	2141	1981
(as % of GDP)	2.6	3.3	3.8	3.1	2.8	2.5	1.7

III.- Non-Quota Coffee (ICA) Scenario 1990-2000

	1990	1991	1992	1993	1994	1995	1996-2000 -- avg --
GDP (% p.a.)	4.5	3.8	3.8	3.8	3.8	3.8	3.8
GDP per capita (US$)	1340	1366	1393	1420	1448	1477	1586
Current Account (US$ mill)	-995	-340	-90	-637	-805	-1096	-1740
(as % of GDP)	-1.8	-0.6	-0.1	-0.9	-1.0	-1.3	-1.6
Trade Balance (US$ mill)	791	1688	2210	2042	2099	2096	2354
(as % of GDP)	1.5	2.9	3.4	2.9	2.7	2.5	2.2

IV.- 2% Increase in LIBOR 1990-2000

	1990	1991	1992	1993	1994	1995	1996-2000 -- avg --
GDP (% p.a.)	4.5	3.8	3.8	3.8	3.8	3.8	3.8
GDP per capita (US$)	1340	1367	1394	1422	1451	1480	1571
Current Account (US$ mill)	-569	-223	30	-532	-733	-1059	-1817
(as % of GDP)	-1.1	-0.4	0.0	-0.8	-1.0	-1.3	-1.7
Trade Balance (US$ mill)	1240	1833	2360	2182	2220	2193	2404
(as % of GDP)	2.3	3.1	3.6	3.1	2.9	2.6	2.2

CHAPTER V. Policies for Raising Total Factor Productivity

204. Chapter IV showed that Colombia's total factor productivity (TFP) growth has contributed little to economic growth since the middle of the 1970s. Unless this phenomenon is reversed, Colombia's future economic growth could be unduly constrained by the availability of domestic savings and external capital. The Government's 1987 Plan de Economía Social recognizes that an economic growth rate of 5% per annum is a necessary condition for reducing unemployment and alleviating poverty and the analysis in Chapter IV supports this conclusion. A low-growth economy could thus frustrate the attainment of these objectives. Hence, raising TFP growth should be considered an important component of Colombia's growth strategy.

205. The productivity issue is both complex and simple. It is complex because in Colombia, as elsewhere, factors that potentially could affect productivity performance are numerous and interacting. As a consequence, they do not readily lend themselves to easy diagnosis. At the same time, the issue is simple because TFP is not an abstract concept. Improving TFP means simply producing more output with the same or fewer inputs, and a more efficient allocation and better use of resources. Thus, it is possible to identify several areas where economic policy can make a significant difference to the TFP performance in Colombia.

I. Public Resource Management and Macroeconomic Policy

206. Macroeconomic policy should aim at reducing both the level and variability of inflation. Empirical evidence points to a negative correlation between persistent high and variable inflation and TFP growth in developing countries.[69] Colombian data also support this result. Over the period 1966-86, a one percent acceleration in inflation was found to be associated with a decline of one tenth of one percent in TFP growth.[70] Inflation in Colombia has been intimately tied to the loss of fiscal control which, in turn, is often the result of poor management of public sector finances. For

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69/ For example, see "The Medium-Term Relationship Between and Performance Indicators and Policy: A Cross Section Approach", by Hans Genberg and Alexander K. Swoboda, The World Bank, March 1987. Tsiang, S. C., "Theories of inflation in less developed countries," prepared for the conference on inflation in East Asian Countries (Taipei, Taiwan: 20-22 May 1983), Chung-Hua Institute of Economic Research.

70/ This result is based upon the regression of GDP growth (y), on the investment rate (I/Y), inflation (p) measured by CPI, and on export growth (x):

$$y = \underset{(0.068)}{0.324\ (I/Y)} - \underset{(0.061)}{0.110 * p} + \underset{(0.044)}{0.109 * x}$$

The numbers in parentheses are standard errors. This is a production function with the investment rate standing for capital accumulation, and both inflation and export growth for contribution to TFP growth. Both the investment rate and export growth are significant at above the 5% level while inflation is significant at the 10% level.

instance, the large and persistent deficit of the power sector (1.6% and 0.6% of GDP in 1986 and 1987, respectively) was in part financed by monetary emission. A major cause for the acceleration of inflation in the early 1980s was the large earmarked transfers from the Central Administration to local authorities that also had to be financed by monetary emission. This process resulted, in part, from the "automaticity" of earmarking revenues that might have weakened the resource mobilization efforts of the recipient agencies.

207. The steady increase in the fiscal deficit since 1986 (2.6% in 1988), the concommitant widening in the public sector investment-savings gap (4.8% of GDP in 1988), and the stubbornly high real interest rates, which are necessary to generate a savings-investment surplus in the private sector (3.7% of GDP in 1988) and simultaneously discourage private capital outflows in order to finance the fiscal deficit, are indications that there is still substantial room for improving the management of public resources with the view to both improving macroeconomic balance and raising the efficiency of resource use in the public sector.

208. The large disparity existing between the marginal productivity of capital in the public and private sectors atests to the inefficiency of resource use in the former. This is so even after allowing for the long-gestation and supportive (complementary) nature of public investment in physical infrastructure. Further, public investment over the last two decades appears to have "crowded out" private investment: increases in public investment have frequently been matched by declines in private investment (Chart III.2, Chapter III).[71] This outcome is puzzling because some important public investment such as infrastructural investment (transportation, communication, power, irrigation, etc.,) should presumably be complementary to private investment. Public investment in export-oriented sectors such as petroleum, coal and other mineral products generates foreign exchange and enlarges import capacity. This investment should also contribute to private sector development, even if only indirectly. However, the fact remains that public investment, on the whole, has exhibited a tendency to displace capital formation in the private sector. The diversion of resources from a more productive private sector to a less productive public sector naturally means a fall in aggregate productivity growth.

209. The rational pricing of public goods and services is an important way for raising efficiency in the use of public resources which contribute to about half of the capital formation in the country.[72] Evidence points to current under-pricing of power, gasoline, and water in irrigation.[73] The

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71/ Private investment could have been crowded out by public investment either through the credit market as a consequence of higher interest rates or through the labor market as a result of higher wages.

72/ Some of the issues related to the efficient use of public resources are covered in detail in the World Bank report: Public Sector Expenditure Review, World Bank, Report No. 7921-CO, July 1989.

73/ In 1988 the subsidy on gasoline consumption, estimated on the basis of the price excluding taxes and distribution margins as compared to the CIF cost, was US$210 million or about 0.5% of GDP. The subsidy would have been higher, had there been no softening in international oil prices.

pricing of petroleum products is a particularly important issue, considering that Colombia's dependence on petroleum exports is increasing and that consumption is likely to outgrow production by the mid-1990s, resulting in a stabilization or perhaps even a decline in petroleum exports. The above analysis suggests that strengthening public resource management, streamlining public investment projects, and proper pricing of public goods and services such as utilities could go a long way in raising TFP in Colombia.

210. With the passage of the Organic Law of the Budget, the Government now has the mandate to implement the budgetary reform with the view to raising the efficiency of public expenditures. The coffee contract, the restructuring of the railroad sector and other inefficient public enterprises, the rationalization of earmarked taxes, and the sound implementation of decentralization should also pave the way to a more efficient public sector.

211. The productive efficiency of the private sector, which is the leading sector of the economy (producing 85% of the nation's output), can be increased by stimulating more competition among producers. Here trade, industrial, and financing policies are the most important instruments for achieving the objective.[74] Chapter III has discussed the agenda of financial reforms from the viewpoints of sustaining recovery of private investment and raising the efficiency of capital. This Chapter then discusses trade and industrial policies, essentially summarizing up the findings and recommenations of two companion World Bank reports.

II. Trade policy

212. The underpinning of the Scenario B discussed in Chapter IV is a recovery of productivity growth and an increase in outward orientation in the tradable goods sectors of the Colombian economy. The long and gradual deterioration in the productivity performance of the two primary traded goods sectors, agriculture and manufacturing, vis-a-vis the rest of the economy, is a clear indication that the current incentive system needs to be altered fundamentally to bring about higher productivity growth and a greater degree of outward orientation in these sectors. Trade policy could make an important contribution to this end.

213. The current Colombian trade regime is characterized by the pervasive use of quantitative restrictions (QRs), which has resulted in a wide disparity of effective protection rates among different producing sectors and in a bias against exporting activities.[75] Reducing the protection level accorded the import-substitution sector by eliminating QRs would work toward equalizing incentives between this sector and the export-oriented sector. This "neutralization" of production incentives could re-orient the incentive system toward favoring exports and efficient import substitution and thus bring about a greater outward orientation. It could also increase productivity growth

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74/ Although it is not discussed in this report, manpower development is also critically important from the viewpoint of productivity, because it improves the quality of labor force.

75/ See Colombia: Country Economic Memorandum, Report No. 6626-CO, October 15, 1987, World Bank. Colombia: Commercial Policy Survey, World Bank Report No. 7510-CO, February, 1989.

through two channels: first, through the reallocation of resources from the protected and less efficient import-substitution sector to the export-oriented sector; second, through greater exposure of domestic firms to international competitive pressures that would result in more efficient production of all tradables, i.e., import-competing as well as export-oriented industries. Given that most Colombian industries are predominantly based upon the domestic market and given that industries and firms may differ substantially in their levels of productivity due to the complexity of the protection regime, the potential gain in productivity as a result of trade liberalization could be quite significant.

214. The benefit of a more outward-oriented development policy can also be seen from the costs and limitations of the alternative development policy based largely upon import-substitution. The protective policies practiced through the imposition of pervasive quantitative restrictions is inefficient and adds costs to domestic production. It encourages smuggling, thus creating unfair competition for legitimate businesses, and reduces customs revenues. It injects uncertainty into the business decision-making process since regulations governing the import of consumer and capital goods and raw materials are not totally transparent. The high costs of production due to import protection need to be offset by various export promotional measures such as tax exemptions and interest subsidies in order to enable exporters to become competitive in the international market. These measures reduce Government revenues that have to be made up by taxing other sectors of the economy. For instance, PROEXPO, the export-promotion agency is funded by levies on imports. Despite the compensating measures for exporters, anti-export bias still exists due to the high cost of protection. Further, the protection regime benefits industrialists more than agricultural producers by making the terms-of-trade unfavorable to the agriculture sector. This was at least part of the motivation for the Government to provide interest subsidies on agricultural credits through the Fondo Financiero Agropecuario. Like other directed credits, this subsidy was funded by taxing the financial sector and indirectly, private savers. Thus, the distortion in the trade regime spills over to the financial sector, compounding the negative impact of trade distortions on growth in productivity.

215. Colombia has made efforts to open up its economy for external competition, but they have not been far-reaching enough. Colombia, thus, has a long history of relying for economic growth on the domestic market through import protection. Because of the inefficiency of import protection, the major spurts of economic growth above the trend level since the late 1960s were associated with strong export growth or greater outward orientation, such as during 1967-74 and 1985-87, as a result of improved trade policy (defined broadly to include the exchange rate policy).[76] It is estimated that an acceleration of export growth by one percent has raised TFP growth by about

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76/ The adoption of export promotion measures and some import liberalization measures was the main reason for the good export performance during 1967-74.

one-tenth of one percent during 1966-86.[77] Chart V.1 shows a positive relationship between export growth and GDP growth in Colombia. International evidence also suggests that greater outward orientation exerts an independent positive influence on real output growth. That is, after account is taken of the effect of capital accumulation and labor force growth, outward orientation is found to have a strong and statistically significant positive effect on GDP growth.[78] The double digit growth rate experienced by the outward-oriented Asian newly industrialized countries, also suggests what outward orientation could do to productivity growth.

216. If the weight of evidence in favor of an outward-oriented or trade-neutral regime is undeniable, what then, are the arguments for not pursuing the opening-up policy? The reasons given from the viewpoint of the external economy have been associated with two arguments, both of which would weaken the case of opening-up if proven valid. First is the argument of "elasticity pessimism" popularized in the 1950s; namely that the price elasticities of demand for developing countries exports are typically small. This is the theoretical basis for industrialization through import protection. Because of inelastic export demand, export growth would depend much less on domestic supply incentives than on foreign demand factors that are basically outside the control of domestic policy. Another implication is that the realignment of the exchange rate (devaluation) would produce a loss in the terms of trade and an accompanying loss in the economic welfare, with little gain in export growth. This argument has not proven valid in general, however. It is also not valid in the case of Colombia. The price elasticity of foreign demand for Colombian manufacturers is estimated to be much greater than unity: 3.3 (Section II in Annex IV). What therefore matters for increasing Colombian exports are policies to improve supply incentives.

77/ This result is based upon the production function reported in footnote 2. It is also supported by the regression of directly estimated TFP on export growth:

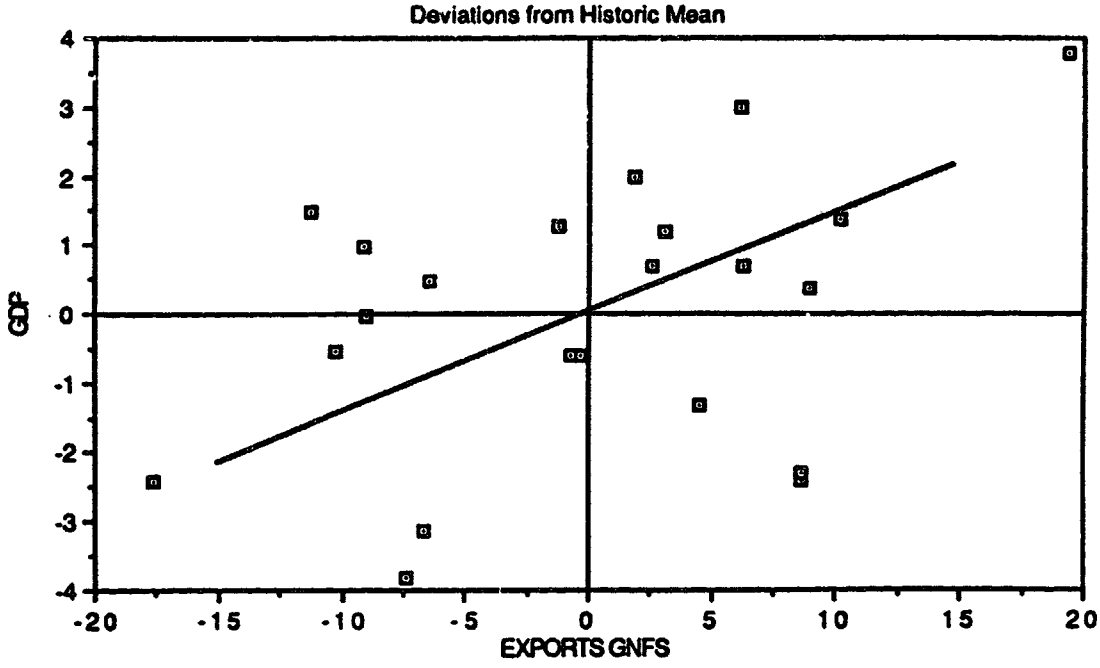
$$TFP = \underset{(0.043)}{0.096} * x, \qquad \text{sample period 1966-86,}$$

where TFP is TFP growth and x is export growth, which is significant at 5% level; the number in parenthesis is the standard error. Data on TFP are derived from the same source as those reported in Chapter IV.

78/ See "On Exports and Growth", Journal of Development Economics, by Feder, G., 1983 (Feb./April), pp. 59-74. In a recent article "Why LDC Growth Rates Differ: Measuring "Unmeasurable" Influences", by E. Scholing and V. Timmermann, World Development, Volume 16, Number 11, November 1988, international competitiveness is found to be a significant determinant of LDC economic growth, next only to the role of capital. The result is consistent with the reasoning that raising international competitiveness would enable a country to realize greater gains from international trade. Sebastian Edwards also finds that "... after taking into account the roles of capital accumulation, growth in the labor force, and technological gap, countries with higher degrees of trade intervention tend to grow, on average, slower than countries with lower trade restrictions..." (see "Openness, Outward Orientation, Trade Liberalization, and Economic Performance in Developing Countries", Country Economics Department, The World Bank, June 1989, WPS 191).

CHART V.1

COLOMBIA: GDP & EXPORTS 1966-87



LS // Dependent Variable is GDP
Date: 4-05-1989 / Time: 12:02
SMPL range: 1966 - 1987
Number of observations: 22

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
EXPORT	0.0854849	0.0441518	1.9361575	0.066

R-squared	0.151471	Mean of dependent var	2.30E-07
Adjusted R-squared	0.151471	S.D. of dependent var	1.960061
S.E. of regression	1.805523	Sum of squared resid	68.45818
Durbin-Watson stat	1.075340	Log likelihood	-43.70363

GDP - Deviation from Historic Mean (4.72) of GDP Growth Rate

EXPORT - Deviation from Historic Mean (5.79) of Exports Growth Rate.

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Note - Regression line not drawn to scale.

217. The second argument against opening-up the economy is the protectionist threat from the industrialized countries. Increased protectionism would reduce the potential gain from the opening-up. But protectionism appears to have been not much more than a threat. Manufactured exports from developing countries have continued to penetrate industrialized country markets even when protectionism is on the rise.[79] Some successful countries have not only been able to nullify protectionism through evasion (exporting through a third country where the protectionist measures are less binding, for instance), but have also used it to their advantage by upgrading their products. Protectionism has clearly not been a constraint to Colombian exports; the estimated price elasticity of export demand would not be nearly as big if it were. (In the extreme case where all Colombian exports are effectively constrained by protectionist measures, the price elasticity of export demand would be zero). Thus, Colombia's export performance is largely determined by its own trade regime, and is not constrained on the demand side. Even if these arguments were valid, Colombia would still gain from opening-up due to more efficient import substitution. The Government is well aware of all this and has been working on a trade reform program.

III. Industrial Policy

218. While trade policy can be a very effective instrument to raise productivity growth of the traded-goods sectors through external competition, industrial policy can equally be used as an instrument to increase internal competition among domestic producers. According to a World Bank industrial study, the structure of the Colombian manufacturing sector shows a significant degree of concentration of production, and that concentration has increased over time.[80] Intermediate and capital goods industries showed clear tendencies toward greater concentration of production between 1968-84, which is likely to have negative effects on consumer goods industries in which small- and medium-scale firms are predominant. The historic tendency toward concentration of ownership and control via horizontal and vertical integration imply limited internal competition and barriers to entry which, in turn, results in a loss in efficiency. Thus, this study also finds that concentrated industries have lower rates of productivity growth, but higher price-cost (profit) margins, than less concentrated industries.

219. The lack of competition may have also resulted in the meager performance of productivity growth of manufacturing industries. During the 1977-80 subperiod, overall TFP growth of twenty-eight 3-digit manufacturing industries was negative, at -1.6% per year, even though real output grew at 7.9% per year. Of the twenty-eight industries, sixteen had negative rates of productivity growth: of these, twelve had experienced positive output growth. During the 1980-83 recession TFP growth averaged -3.2% across all manufacturing. Productivity growth was negative in twenty-five of twenty-eight industries. Of the twenty-five industries with negative TFP growth,

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79/ This evidence is provided by Hughes and Krueger in their paper "Effects of Protection in Developed Countries on Developing Countries". In R. Baldwin and A. Krueger, eds. The Structure and Evolution of Recent U.S. Trade Policy. Chicago University Press for the N.B.E.R. 1984.

80/ Colombia: Industrial Sector Report, World Bank, Report No. 7921-CO, July 1989.

twelve experienced output growth. These productivity estimates imply that the main source of manufacturing output growth has been the use of greater quantities of resources rather than a more efficient use of inputs. These estimates are consistent with the productivity estimates at the aggregate level for the economy as a whole discussed in Chapter IV. These results suggest that industrial output gains have been achieved at high cost, and that sustained output growth will require improvements in dynamic efficiency (i.e., better TFP growth).

220. The domestic orientation of industrial sales due to the anti-export bias of the trade regime, coupled with the small size of the domestic market, and the existence of economies of scale in certain industries contribute to the concentrated structure of many industrial markets. On the other hand, according to the industrial report, the barriers to entry and exit of firms in general are not strong, say compared with the United States. It would appear then, that the efficient way to reduce the degree of industrial concentration and the associated market power is to reduce the level of import protection accorded to domestic industries. In this regard, eliminating quantitative restrictions will be a more effective tool to reduce the monopoly power than reducing tariffs.[81] This is because a tariff does not completely insulate domestic firms from foreign competition while a quota, by contrast, establishes a fixed limit. Even a single domestic producer of a particular product line is unable effectively to limit production and hence raise the price if imported alternatives are available. Thus, a more liberal trade regime can be an effective antitrust policy. In addition, legislation controlling market structure and non-competitive behavior will also need to be strengthened.

IV. Complementary Policies for the Trade Reform Program

221. The above analysis indicates that trade policy is an important policy instrument for raising the productive efficiency and outward orientation of the Colombian economy. However, trade policy will not necessarily achieve its objectives without the proper coordination with macroeconomic and sectoral policies. This section discusses this issue.

222. While reducing the level of protection through opening-up the economy will stimulate productivity growth, thereby resulting in higher real wages and incomes over the long-run, the economy may suffer from a loss of international reserves, lower output and employment in the protected industries, and perhaps higher inflation during the transitional period. The extent of this transitory dislocation of the economy depends upon a number of factors and can not be predicted with certainty. Among them, the consistency between the trade policy and macroeconomic policy, the initial condition of the economy at the time of trade reform, the intensity of the reform program, and the possibility of external financing and its magnitude. As far as the initial condition is concerned, the level of international reserves, the distortions in goods, factor, and financial markets, and the extent of macroeconomic

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81/ Bhagwati showed a long time ago that the effects of protection depend on its form, with quotas worse than tariffs, i.e., yielding a higher domestic price and lower output for the monopolist. [Bhagwati, J. (1965), "On the Equivalence of Tariffs and Quotas" in R. Baldwin, ed., Trade, Growth, and the Balance of Payments, Chicago; Rand McNally.]

disequilibrium (e.g., fiscal and current account deficits) are important factors. If the dislocation is significant, it may cause a reversal in the trade reform.[82]

223. The substance of trade reform is to transfer resources out of inefficient activities to efficient activities of traded goods. This transfer requires an increase in the relative prices between traded and nontraded goods, or a depreciation of the real exchange rate, which can be sustained throughout the adjustment period. It thus becomes necessary that macroeconomic policies be undertaken in a way not causing a reversal in the desired real exchange rate adjustment.

224. If the Government is to implement the trade reform program in the near future, the initial conditions of economy, barring external shocks, can be characterized as follows. The fiscal deficit will be in the range of 2.5-3% of GDP. This fiscal deficit will not allow inflation to drop much below 24.0% per annum and as a consequence, a significant easing of monetary policy to lower interest rates (Chapter II). The current account deficit will be in the range of 1-2% of GDP, and international reserves will be around 5-6 months of imports and goods and services, which is adequate but not necessarily comfortable. The central bank is expected to maintain the present level of the purchasing-power-parity real exchange rate, or to achieve at slight depreciation, through continuously crawling the Colombian peso against a basket of foreign currencies.

225. There are certain distortions in the goods, labor, and financial markets, such as modest price controls, excessive labor regulations, and subsidized directed credit programs, that are likely to reduce the potential gains from trade liberalization. The trade regime is restrictive and industries are concentrated, both of which contribute to the loss of economic efficiency. The financial sector has just emerged from a crisis that lasted from 1982 until 1987, but remains under close custody of the Government. Constrained by modest productivity growth, the economy is not likely to grow much beyond 4.5%, which is not sufficient to reduce unemployment. As a result, urban unemployment is likely to be persistently high, at around 10%. Under these initial conditions, trade, macroeconomic, and sector policies will need to be coordinated very carefully. A possible sequence of policy measures might be as outlined below.

226. For the reasons discussed in paragraphs 213 and 220, the first step of the trade reform program should be the substantial elimination of quantitative restrictions (QRs). This should then be followed by a program to reduce the level and dispersion of tariffs.

227. The exchange rate should be devalued to obtain a real depreciation that is sufficient to offset the adverse effects of the appreciation in the real exchange rate associated with the opening-up of the trade regime on the balance of payments. The real depreciation should be even greater than this,

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82/ The research by the World Bank argues that the inconsistency between the trade policy and macroeconomic policy was the major cause for the failure of a number of liberalization attempts in Latin American countries (Trade Liberalization: The Lessons of Experience, Internal Discussion Paper, Latin America and The Caribbean Regional Series, April 1988)

if the initial real exchange rate is believed to be overvalued at the beginning of the trade reform.[83] After the devaluation, the crawling peg should be resumed to maintain the external competitiveness. The devaluation is not only justified from the view point of the balance of payments, but it also can offset partly the negative effects of trade liberalization on output and employment.

228. The opening-up of the economy calls for a reduction of the fiscal deficit. First, this is because in the short run, before productivity growth, brought about through the trade reform, will raise output growth, the improved trade balance would need to be accommodated by a squeeze in domestic absorption, given the output constant. Thus if public expenditure, as well as private consumption, can not be reduced in the trade adjustment process, private investment would suffer. The inability to control the fiscal deficit and, in particular, cut public expenditures, could be a significant factor underlying the commonly observed contraction of private investment that followed large devaluations in developing countries. Yet the trade reform will need to be supported by a rise in investment if economic growth is to be increased over the long-run.

229. Second, the curtailment of fiscal deficit would reduce the domestic credit demand from the public sector, thereby offsetting the stimulative effect of the devaluation on the monetary base and hence its inflationary consequences. It thus would eliminate the need for the monetary authorities to adopt a restrictive monetary policy which, if pursued, would raise the real interest rates even higher than the present level and repress the financial system. Finally, because higher interest rates would not only hurt private investment and economic growth, but also result in a real appreciation, as a consequence of greater international capital flows induced by the widening of the differential between domestic and foreign interest rates, the reduction of the fiscal deficit would avoid an appreciation and increase the credibility of trade reform.

230. During the later stage of the trade reform when import tariffs are gradually reduced, alternative sources of fiscal revenue will be needed to compensate for the loss of import tariffs because trade taxes, which constitute about a quarter of government revenues (or about 2.4% of GDP), are an important source of fiscal revenue. Because during the later stage of trade reform, the fiscal issue may become a constraint to trade liberalization, the government needs to access the need for a tax reform in order to reduce the reliance of government revenue on trade taxes, particularly import tariffs and surcharges.

231. In a market-oriented economy like Colombia, the signal of trade policy reform is transmitted through changes in the relative prices between traded and nontraded goods on the one hand, and between imported and exported goods on the other hand. The changes in the relative prices, in turn, prompt economic resources to move among economic activities in the spirit of the principle of comparative advantage. Thus for the trade policy to achieve its desired objectives, or to maximize the potential gains from trade, impediments

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83/ The World Bank report: Colombia: Commercial Policy Survey (1989) suggests that the present level of the real exchange rate may be overvalued according to some criteria.

to a smooth transfer of resources among economic activities in the goods, labor and financial markets will need to be identified and removed.

232. The industrial sector study of the World Bank, cited earlier, argues that barriers to entry and exit of firms in Colombia do not appear significant. Thus industrial regulations do not appear to be a major impediment that could prevent inefficient industries from declining, and new industries and profitable activities from emerging.[84] However, the labor regulations such as cesantia and the wage indexation that harm the free functioning of the labor market in the urban formal sector could impede trade reform. For instance, when trade reform results in a decline in some inefficient industries but the costs involved in releasing employees from these industries are prohibitively high, one would witness an increase in labor redundancy rather than a reduction in the work force. This would either retard firms' adjustment to become more efficient or prevent them from closing down altogether in the event of an unsuccessful adjustment.

233. The issue with the indexation of wage increases to past inflation is that indexation tends to neutralize the impact of trade reform over time. For instance, when a nominal devaluation produces a real depreciation, the real wages (in terms of the price of traded goods) will fall and help increase production and exports of tradables. However, as nominal wages, via the indexation mechanism, gradually catch up with prices, and as nominal devaluation slows down, real wages will increase. This will result in a real appreciation, thus offsetting the initial depreciation. This is not to deny the need to raise real wages which, after all, is the basic objective of trade reform. It does caution against raising real wages prematurely, at least not until higher productivity growth is attained. The continuous rise in real wages, or appreciation, is sustainable over time, only if it is consistent with higher productivity growth. While productivity growth will be stimulated by trade reform, it will materialize only gradually.

234. During the initial stage of trade reform, the output and employment effects are mostly likely produced by a reallocation of labor with the existing capital stock. Over the longer-run, however, new capital must be invested efficiently in tradable goods sectors for the trade reform to succeed in raising production and export. The efficient reallocation of capital among economic activities requires the support of an efficient financial sector. This underscores the need of implementing financial policy reforms as discussed in Chapter III.

84/ Doubts expressed by some authors regarding the use of trade liberalization for raising productivity growth are sometimes based upon the argument that the assumption of functionless entry to and exit from the industry in developing countries has no empirical foundation. See, for example, "Closing The Technology Gap: Does Trade Liberalization Really Help ?", Dani Rodrik, John F. Kennedy School of Government, Harvard University, March 1988.

Annex I: Model of Government Deficit Finance

The financial behavior of the private sector is modeled with a standard Tobin-style portfolio model with some simplifications. The demand for currency depends only on inflation and real GDP, as shown in the regression in Table 1. This implies that the demand for currency is strictly a transactions demand, with the real demand declining as the "tax" on currency holdings increases. The demand for non-currency domestic financial assets depends on real interest rates and real GDP, as shown in the second regression in Table 1.

These results must be translated into portfolio demands for each of the assets shown in the matrices in the Annex. We make the simplifying assumption that all domestic noncurrency assets are perfect substitutes and carry the same interest rate. The shares of each of these assets in the domestic non-currency portfolio are assumed to remain the same as in 1987. The real demand for currency is independent of the size of the portfolio, with the desired ratio of currency to GDP depending only on the inflation rate. The share of the noncurrency assets which go to domestic assets depends on the domestic real interest rate, with the elasticity given by the regression in Table 1. The remainder goes into foreign currency assets.

The asset side of private financial behavior is assumed to be strictly separated from the liability side.[1] The demands for credit by the private sector are modeled as part of the investment decision. Regression 3 in Table 1 shows the ratio of private investment to GDP as a function of the real interest rate. We assume that private foreign borrowing is rationed by external capital markets and/or the government. Lending by public financial institutions and the central bank is determined exogenously as a matter of government credit policy. Domestic borrowing then becomes the residual source of finance for investment, and thus is a function of real interest rates as in regression 3.

The financial institutions have their behavior determined largely by regulation. They are required to set aside fixed percentages of their portfolio in reserves, reserve investments, and forced investments. The private financial system supplies the credit demanded by the nonfinancial private sector at a given interest rate, then supplies the remainder to the government. Public financial intermediaries deliver credit to the public and private sectors in fixed proportions, which are based on the 1987 portfolio shares. Private financial intermediaries are defined to include nationalized private banks, since data do not exist on these separately.

The external sector is determined on the assumption that there is external credit rationing and government targets for its own external borrowing. The external credit rationing takes the form of fixed external

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1/ This could reflect, for example, an institutional distinction between consumers and private firms.

debt ratios for the private sector and financial system. The government sets targets for its external borrowing and reserve accumulation at the central bank, and external flows are determined accordingly.

The model is closed by endogenously determining the government deficit on the basis of available financing. The inflation rate and interest rate are set exogenously, which then implies a given financeable government deficit. This can be thought of as determining the consistency of the fiscal deficit with macroeconomic targets for interest rates and inflation.

The matrix shows the liabilities of each agent reading horizontally, with each agent's assets shown vertically. For example, the money base is shown as a liability of Banco de la República, and an asset of public and private financial intermediaries (reserves on deposits) and of the nonfinancial private sector (currency). The balancing item for each sector is the "net" column, which measures financial assets minus liabilities, i.e. financial net worth. For example, Banco de la República is shown with a net worth of 1.5 percent of GDP in 1987, while the nonfinancial public sector has a net debt equal to 35.4 percent of GDP.

The net column represents the net borrowing or asset accumulation of each sector. For example, the central bank is shown to have net asset accumulation of 0.8 percent of GDP (as compared with the 0.6 percent shown as the CEC balance in table II.2). The 0.8 percent represents the difference between 3.4 percent of GDP in asset accumulation, including loans to the public and private sectors, rediscounts to the financial system, and accumulation of international reserves, and 2.5 percent of GDP in liability accumulation, including money creation of 1.9 percent of GDP, forced investments of .3 percent of GDP and deposits and bonds of .3 percent of GDP.[2]

Model equations

The model presented in equations (1) - (23) has a simple structure, although the notation is rather dense. The first part of the model is a conventional set of portfolio equations for the private sector. There are six assets: currency, BR bonds, government bonds, deposits in public financial institutions, deposits in private financial institutions, and foreign assets. We assume a three stage process of portfolio choice. First, individuals determine how much currency they need based on transaction volume and the rate of inflation. Second, they divide their remaining portfolio between domestic and foreign assets, according to the domestic interest rate less the rate of devaluation (which is assumed to equal the rate of inflation).[3] Third, they divide domestic assets into the four types based on fixed proportions. The fixed proportions reflect convention, since the four domestic assets are assumed to carry the same

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2/ The Fondos Financieros are consolidated with Banco de la República.

3/ Foreign interest rates enter here of course, but they are assumed to stay constant and so drop out of the equations expressed in terms of changes.

interest rate and to be perfect substitutes. The proportions used in the model are those existing at the end of 1987.

Private savings is assumed to be determined by the requirement that the ratio of gross financial assets to GDP stay at the desired level, which is here taken as the 1987 level. The flow of savings will thus be this ratio times the rates of current inflation and growth. There will be an adjustment factor in the denominator reflecting the fact that we use last year's ratio to give this year's saving. The ratio needs to be accordingly deflated by one plus the rates of inflation and growth. Thus, no matter what the (positive) rates of inflation and growth, the factor which multiplies the desired asset ratio will always be between zero and one.

The net savings of Banco de la República, public financial institutions, and private financial institutions will be given as their interest income minus their interest expense, shown in equations (7) through (9).

External debt flows are assumed to be such as to maintain the ratio of debt stocks to GDP constant. However, as a policy parameter, we allow for a change in the ratio of government debt to GDP.

Private sector credit demand is assumed to be separated from private sector asset accumulation decisions. We have in mind a world where the private sector is divided functionally between those who save (e.g. households) and those who borrow and do physical investment (e.g. firms). The private sector credit demand can thus be thought of as an investment demand function. The credit demand is a function of the real interest rate on loans. If the real interest rate is unchanged, then the ratio of private credit to GDP is maintained over time.

The loan interest rate can be related to the deposit interest rate by taking into account reserve requirements and forced investments. If the only variables that change are other domestic interest rates, then the change in the deposit rate will be given by the change in the loan rate adjusted for the reserve requirement, minus the change in the differential between loans and forced investments times the forced investment ratios (equation 14).

Reserves and forced investments are determined on the basis of fixed ratios applied to deposits in public and private financial institutions (equations 15 through 21). The ratios are calculated on the basis of stocks outstanding at the end of 1987.

Other financial flows not represented in these equations are determined on the basis of maintaining constant the ratio of the financial stock to GDP that prevailed at the end of 1987.

Equation (22) shows the total net financing available to the government. This represents the nominal change in net financial assets, including the effect of devaluation on foreign assets and liabilities. Thus, this can be thought of as the total public deficit plus net capital losses. Adjustments for capital gains and inflation are then made to get to the figures shown in the main text.

The financing of the government deficit includes loans from Banco de la República, public financial institutions, and private financial institutions, forced investments from public and private financial institutions, government bonds held by the private sector, and external debt. We have to subtract asset accumulation, which includes deposits in Banco de la República, and in public and private financial institutions, as well as foreign deposits.

The loans from Banco de la República in turn must be financed by reserves from financial institutions, currency holdings by the private sector, forced investments by financial institutions, bond sales to the private sector and financial institutions, and foreign debt. We must subtract other credit creation by BR, including rediscounts to public and private financial institutions and the private sector, and the loans of the fondos financieros. Finally we must subtract international reserve accumulation by BR.

The two financing identities can be consolidated by substituting for central bank credit in (22) using (23). We then arrive at financing for the total public sector, which is what is shown in the tables shown in the text.

Solution of model

The model has two key equilibrating variables--inflation and the real interest rate. In principle, the model could be solved for equilibrium inflation and interest rates for a given fiscal deficit and assumed composition of its financing. However, it is computationally easier and intuitively appealing to turn the model around and solve for the fiscal deficit and its financing composition for given inflation and interest rates. This can be seen as giving the required deficit level and financing composition for target rates of interest and inflation. The model then becomes a set of recursive equations which can be solved in any simple software such as Lotus 1-2-3.

The solution of the model proceeds as follows. An inflation rate and real loan interest rate are set exogenously. The model then solves for the real deposit rate using (14). Private sector currency, deposit, and loan flows follow from (1) through (5) and (13). Reserve and forced investment flows follow from (15) through (21). External debt flows are determined from (10) through (12). The balancing item in the balance sheet of private financial institutions is credit to the public sector. In effect, any credit resources left over after private credit demands have been satisfied at the given interest rate are delivered to the government. Banco de la República also delivers residual credit to the public sector. Public financial institutions are assumed to share out their credit resources between public and private sectors in fixed proportions, according to a policy-determined rule.

This procedure thus gives us total financing available to the government, and the public sector deficit is determined endogenously. The composition of the deficit between different types of finance is also determined by the private sector money and deposit accumulation in response to the specified inflation and interest rates. Different simulations can then be performed for different target inflation and interest rates.

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NONFINANCIAL PRIVATE SECTOR

Demand for currency

$$(1)\quad \frac{\Delta H_p}{PY} = \frac{\left[\ \phi_H\ (\ r + \Delta r + g\ ) + \phi_H^{\cdot}\ \Delta r\ )\ \right]}{(\ 1 + r + \Delta r + g\ )}$$

Demand for bonds of BR

$$(2)\quad \frac{\Delta B_p}{PY} = \frac{\left[\ \phi_B\ (\phi_D(n_p - \phi_H)\ (r + \Delta r + g) - \phi_H^{\cdot}\ \phi_D\ \Delta r + \phi_D^{\cdot}\ (n_p - \phi_H)(\Delta i_D - \Delta r)\right]}{(\ 1 + r + \Delta r + g\ )}$$

Demand for government bonds

$$(3)\quad \frac{\Delta T_p}{PY} = \frac{\left[\ \phi_T\ (\phi_D(n_p - \phi_H)\ (r + r + g) - \phi_H^{\cdot}\ \phi_D\Delta r + \phi_D^{\cdot}\ (n_p - \phi_H)(\Delta i_D - \Delta r)\right]}{(\ 1 + r + \Delta r + g\ )}$$

Demand for deposits in public financial institutions

$$(4)\quad \frac{\Delta D_{JP}}{PY} = \frac{\left[\ \phi_J(\phi_D(n_p - \phi_H)\ (r + \Delta r + g) - \phi_H^{\cdot}\ \phi_D\Delta r + \phi_D^{\cdot}(n_p - \phi_H)(\Delta i_D - \Delta r)\right]}{(\ 1 + r + \Delta r + g\ )}$$

Demand for deposits in private financial institutions

$$(5)\quad \frac{\Delta D_{PP}}{PY} = \frac{\left[(1 - \phi_B - \phi_T - \phi_J)(\phi_D\ (n_p - \phi_H)(r + \Delta r + g) - \phi_H^{\cdot}\ \phi_D\ \Delta r + \phi_D^{\cdot}(n_p - \phi_H)\ (\Delta i_D - \Delta r)\right]}{(\ 1 + r + \Delta r + g\ )}$$

Private savings

$$(6)\ \frac{S_P}{PY} = \frac{n_p\ (\pi + \Delta\pi + g)}{(1 + \pi + \Delta\pi + g)}$$

CENTRAL BANK (Banco de la República) net saving

$$(7)\ \frac{\Delta N_B}{PY} = \frac{\left[(i_H + \Delta i_H)\ q_{FF} + (i_R + e) r_B - (b_J + b_F + b_P)\ (i_D + \Delta i_D) - (i_F + e) f_B - (i_G + \Delta i_G)\ (ie_{BJ} + ie_{BF}) \right]}{(1 + \pi + \Delta\pi + g)}$$

PUBLIC FINANCIAL INTERMEDIARIES net saving

$$(8)\ \frac{\Delta N_J}{PY} = \frac{\left[(ie_{BJ} + ie_{GJ})\ (i_G + \Delta i_G) + (i_H + \Delta i_H)\ (l_{CJ} + l_{GJ}) - (i_D + \Delta i_D)\ (d_{JG} + l_{JF} + d_{JP}) - (i_F + e) f_J \right]}{(1 + \pi + \Delta\pi + g)}$$

PRIVATE FINANCIAL INTERMEDIARIES net saving

$$(9)\ \frac{\Delta N_P}{PY} = \frac{\left[(ie_{BF} + ie_{GF} + ie_{JF} + ie_{CF})\ (i_G + \Delta i_G) + (b_p + l_{GF} + l_{JF} + l_{CF} - q_{FF})\ (i_C + \Delta i_C) - (d_{FG} + d_{FP})(i_D + \Delta i_D) - (i_F + e) f_F - (q_{FF} + d_{FB})\ (i_D + \Delta i_D) \right]}{(1 + \pi + \Delta\pi + g)}$$

External debt flows

$$(10)\quad \frac{\Delta F_B}{PY} = \frac{(\pi + \Delta\pi + g)}{(1 + \pi + \Delta\pi + g)} \quad f_B$$

$$(11)\quad \frac{\Delta F_G}{PY} = \frac{(\pi + \Delta\pi + g)}{(1 + \pi + \Delta\pi + g)} \quad f_G + \Delta f_G$$

$$(12)\quad \frac{\Delta F_C}{PY} = \frac{(\pi + \Delta\pi + g)}{(1 + \pi + \Delta\pi + g)} \quad f_C$$

Private sector credit demand

$$(13)\quad \frac{\Delta L_{CF}}{PY} = \frac{\left[\phi\,(\pi + \Delta\pi + g) + \phi'\,(\Delta i_C - \Delta\pi)\right]}{(1 + \pi + \Delta\pi + g)}$$

Deposit interest rate

$$(14)\quad \Delta i_D = (1 - \mu_F)\Delta i_C - (\Delta i_C - \Delta i_G)\,(\iota_{BF} + \iota_{JF} + \iota_{CF} + \iota_{GF})$$

Reserves and forced investments

$$(15)\quad \frac{\Delta H_J}{PY} = \mu_J \left(\frac{\Delta D_{JG}}{PY} + \frac{\Delta D_{JP}}{PY}\right)$$

$$(16)\quad \frac{\Delta H_F}{PY} = \mu_F \left(\frac{\Delta D_{FP}}{PY} + \frac{\Delta D_{FG}}{PY} \right)$$

$$(17)\quad \frac{\Delta IE_{BJ}}{PY} = \iota_{BJ} \left(\frac{\Delta D_{JG}}{PY} + \frac{\Delta D_{JP}}{PY} \right)$$

$$(18)\quad \frac{\Delta IE_{GJ}}{PY} = \iota_{GJ} \left(\frac{\Delta D_{JG}}{PY} + \frac{\Delta D_{JP}}{PY} \right)$$

$$(19)\quad \frac{\Delta IE_{BF}}{PY} = \iota_{BF} \left(\frac{\Delta D_{FP}}{PY} + \frac{\Delta D_{FG}}{PY} \right)$$

$$(20)\quad \frac{\Delta IE_{GF}}{PY} = \iota_{GF} \left(\frac{\Delta D_{FP}}{PY} + \frac{\Delta D_{FG}}{PY} \right)$$

$$(21)\quad \frac{\Delta IE_{JF}}{PY} = \iota_{GF} \left(\frac{\Delta D_{FP}}{PY} + \frac{\Delta D_{FG}}{PY} \right)$$

Government financing

$$(22)\quad \frac{-\Delta N_G}{PY} = \frac{\left[\Delta L_{GB} + \Delta L_{GJ} + \Delta L_{GF} + \Delta IE_{GJ} + \Delta IE_{GF} + \Delta T_P + \Delta F_G - \Delta D_{BG} - \Delta D_{JG} - \Delta D_{FG} - \Delta R_G \right]}{PY}$$

Central bank financing

$$(23)\quad \frac{\Delta L_{GB}}{PY} = \frac{\left[\Delta D_{BG} + \Delta H_J + \Delta H_F + \Delta H_P + \Delta IE_{BJ} + \Delta IE_{BF} + \Delta B_J + \Delta B_F + \Delta B_P + \Delta F_G - \Delta Q_J - \Delta Q_F - \Delta D_{FB} - \Delta Q_{FP} - \Delta Q_C - \Delta R_B \right]}{PY}$$

Variable definitions

H_P	currency held by private sector
P	General price level
Y	Real GDP
π	inflation rate
g	growth rate
B_i	Banco de la República bonds held by sector i
np	ratio of gross private financial savings to GDP
T_i	government bonds held by sector i
D_{ij}	deposits in sector i by sector j
S_P	private saving
N_i	net financial assets of sector i
IE_{ij}	inversiones del encaje or forced investments made in sector i by sector j
L_{ij}	loans to sector i by sector j
F_i	peso value of external debt of sector i
i_D	deposit interest rate
i_H	interest rate paid on loans of fondos financieros
i_G	interest rate paid on forced investments
i_R	interest rate paid on foreign reserves (in dollars)
i_F	interest rate paid on foreign debt (in dollars)
i_C	interest rate paid on loans from banking system
e	rate of exchange rate depreciation
R_i	foreign reserves of sector i (peso value)
Q_i	Central bank rediscounts to sector i
Q_{FF}	Loans by fondos financieros

Parameters

μ_J	reserve requirement for public financial institutions
μ_F	reserve requirement for private financial institutions
ι_{ij}	forced investment ratio - directed to sector i from sector j
ϕ_H	ratio of currency to GDP
ϕ'_H	derivative of currency ratio wrt inflation
ϕ_B	share of BR bonds in private domestic non-currency assets
ϕ_T	share of government bonds in private domestic non-currency assets
ϕ_J	share of deposits in public financial institutions in private domestic non-currency assets
ϕ_D	share of domestic assets in private sector non-currency assets
ϕ'_D	derivative of ϕ_D wrt domestic real deposit interest rate
ϕ	ratio of private credit to GDP
ϕ'	derivative of ϕ wrt real loan interest rate

Notation conventions

Subscripts:

B	Banco de la República (Central bank))
G	Non financial public sector
J	Financial public sector
F	Financial private sector
P	Nonfinancial private sector

Other:

Δ	change during year
lower-case letter	Ratio of variable denoted by upper case letter to GDP

REGRESSION I

TABLE 1

SMPL 1972 - 1987
16 Observations
LS // Dependent Variable is LCUREA
Convergence achieved after 3 iterations

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	-6.6216688	2.4247631	-2.7308519	0.018
CPIYTY	-0.5148596	0.2800343	-1.8385588	0.091
LGDP	0.9379755	0.1837274	5.1052574	0.000
AR(1)	0.9788390	0.2492560	2.3222665	0.039

R-squared	0.941127	Mean of dependent var	5.548805
Adjusted R-squared	0.926408	S.D. of dependent var	0.188232
S.E. of regression	0.051063	Sum of squared resid	0.031289
Durbin-Watson stat	1.212913	F-statistic	63.94250
Log likelihood	27.19350		

REGRESSION II

SMPL 1973 - 1987
15 Observations
LS // Dependent Variable is LRM2CU
Convergence achieved after 3 iterations

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	-21.087270	3.1139532	-6.7718649	0.000
LGDP	2.1221520	0.2363584	8.9785327	0.000
RLR2	0.4062346	0.2555644	1.5895587	0.140
AR(1)	0.6134617	0.2422598	2.5322475	0.028

R-squared	0.985502	Mean of dependent var	6.779140
Adjusted R-squared	0.981548	S.D. of dependent var	0.403074
S.E. of regression	0.054753	Sum of squared resid	0.032977
Durbin-Watson stat	1.398098	F-statistic	249.2397
Log likelihood	24.61590		

REGRESSION III

SMPL 1972 - 1985
14 Observations
LS // Dependent Variable is IVPGDP

VARIABLE	COEFFICIENT	STD. ERROR	T-STAT.	2-TAIL SIG.
C	11.755552	0.4764354	24.673966	0.000
RLR2	-11.633157	5.1697259	-2.2502463	0.044

R-squared	0.296749	Mean of dependent var	11.35919
Adjusted R-squared	0.238145	S.D. of dependent var	1.897656
S.E. of regression	1.656336	Sum of squared resid	32.92220
Durbin-Watson stat	1.946165	F-statistic	5.063609
Log likelihood	-25.85077		

Notes

Regression I

LCUREA: log of real currency; source for currency: Revista del Banco de la Republica, various issues.

CPIYTY: Consumer Price Index, year-to-year rate using December data; Source: BESD, World Bank.

LGDP: log of real GDP; source: Revista del Banco de la Republica, various issues.

AR(1): Auto regression correction factor.

Regression II

LRM2CU: log of real M2 minus real currency (both deflated by year-to-year CPI rate using December data); source for M2 and currency: Revista del Banco de la Republica, various issues.

LGDP: log of real GDP; source: Revista del Banco de la Republica, various issues.

RLR2: Nominal CDT interest rate (yearly average) deflated by Consumer Price Index, year-to-year rate using December data; source for 1972-1986 CDT rate: Colombia CEM, World Bank, Oct. 15, 1987, for 1987 Revista,; source for CPI: BESD, World Bank.

AR(1): Auto regression correction factor.

Regression III

IVPGDP: Private Investment as a ratio to GDP, source: Cuentas Nacionales, DANE, various issues.

RLR2: Nominal CDT interest rate (yearly average) deflated by Consumer Price Index, year-to-year rate using December data; source for 1972-86 CDT rate: Colombia CEM, World Bank, Oct. 15, 1987, for 1987 Revista; source for CPI: BESD, World Bank.

Flows-of-funds matrices, 1984-87:

Stocks, Nominal Flows, and Inflation-Adjusted Flows

assets (down)/ liabilities (across)	1984 STOCKS (% OF GDP)							
	1 BR	2 Nonfin pub	3 Fin pub	4 Fin priv	5 Nonfin priv	6 External\4	7 Total	8 Net
Banco de la Republica--total\1		0.0156	0.0088	0.0531	0.0681	0.0092	0.1548	0.0138
--money base			0.0069	0.0235	0.0545		0.0849	
--inversiones del encaje			0.0005	0.0251			0.0256	
--deposits and bonds		0.0156	0.0015	0.0045	0.0135	0.0092	0.0443	
Nonfinancial public sector	0.0646		0.0093	0.0215	0.0113	0.2247	0.3314	-0.2792
--inversiones del encaje + obligatorias			0.0008	0.0044			0.0052	
--other	0.0646		0.0085	0.0171	0.0113	0.2247	0.3263	
Public financial intermediaries\2	0.0052	0.0161		0.0057	0.0507	0.0063	0.0840	0.0075
--inversiones del encaje + obligatorias				0.0053			0.0053	
--deposits	0.0052	0.0161		0.0003	0.0507	0.0063	0.0787	
Private financial intermediaries\3	0.0486	0.0142			0.2910	0.0362	0.3900	-0.0039
--financial rescue\4	0.0064						0.0064	
--fondos financieros	0.0241						0.0241	
--deposits	0.0180	0.0142			0.2910	0.0362	0.3594	
Nonfinancial private sector	0.0004		0.0734	0.3059		0.1045	0.4841	0.0034
--inversiones del encaje + obligatorias				0.0065			0.0065	
--other	0.0004		0.0734	0.2994		0.1045	0.4777	
External	0.0498	0.0083			0.0684		0.1225	0.2584
Total	0.1686	0.0523	0.0915	0.3861	0.4875	0.3810	1.5668	-0.0000

assets (down)/ liabilities (across)	1 BR	2 Nonfin pub	3 Fin pub	4 Fin priv	5 Nonfin priv	6 External\4	7 Total	8 Net
	1985 STOCKS (% OF GDP)							
Banco de la Republica--total\1		0.0217	0.0080	0.0537	0.0728	0.0116	0.1677	0.0142
--money base			0.0080	0.0235	0.0535		0.0830	
--inversiones del encaje			0.0011	0.0257			0.0268	
--deposits and bonds		0.0217	0.0009	0.0045	0.0193	0.0116	0.0580	
Nonfinancial public sector	0.0613		0.0141	0.0165	0.0143	0.3166	0.4228	-0.3616
--inversiones del encaje + obligatorias			0.0009	0.0050			0.0058	
--other	0.0613		0.0133	0.0115	0.0143	0.3166	0.4170	
Public financial intermediaries\2	0.0044	0.0138		0.0053	0.0519	0.0139	0.0894	0.0083
--inversiones del encaje + obligatorias				0.0051			0.0051	
--deposits	0.0044	0.0138		0.0002	0.0519	0.0139	0.0843	
Private financial intermediaries\3	0.0436	0.0131			0.3024	0.0451	0.4042	-0.0264
--financial rescue\4	0.0046						0.0046	
--fondos financieros	0.0222						0.0222	
--deposits	0.0167	0.0131			0.3024	0.0451	0.3773	
Nonfinancial private sector	0.0043		0.0736	0.3024		0.1449	0.5251	0.0005
--inversiones del encaje + obligatorias				0.0057			0.0057	
--other	0.0043		0.0736	0.2966		0.1449	0.5194	
External	0.0684	0.0126			0.0842		0.1651	0.3670
Total	0.1819	0.0612	0.0957	0.3778	0.5256	0.5321	1.7744	

assets (down)/ liabilities (across)	1 BR	2 Nonfin pub	3 Fin pub	4 Fin priv	5 Nonfin priv	6 External\4	7 Total	8 Net
	1988 STOCKS (% OF GDP)							
Banco de la Republica--total\1		0.0603	0.0055	0.0602	0.0665	0.0138	0.2063	0.0088
--money base			0.0039	0.0281	0.0469		0.0789	
--inversiones del encaje			0.0008	0.0235			0.0244	
--deposits and bonds		0.0603	0.0007	0.0086	0.0196	0.0138	0.1030	
Nonfinancial public sector	0.0645		0.0173	0.0153	0.0146	0.3361	0.4479	-0.3494
--inversiones del encaje + obligatorias			0.0009	0.0045			0.0054	
--other	0.0645		0.0164	0.0108	0.0146	0.3361	0.4425	
Public financial intermediaries\2	0.0028	0.0047		0.0062	0.0486	0.0144	0.0768	0.0087
--inversiones del encaje + obligatorias				0.0055			0.0055	
--deposits	0.0028	0.0047		0.0007	0.0486	0.0144	0.0713	
Private financial intermediaries\3	0.0425	0.0206			0.2921	0.0374	0.3925	-0.0252
--financial rescue\4	0.0131	0.0060					0.0191	
--fondos financieros	0.0196						0.0196	
--deposits	0.0098	0.0146			0.2921	0.0374	0.3538	
Nonfinancial private sector	-0.0011		0.0627	0.2858		0.1509	0.4981	0.0180
--inversiones del encaje + obligatorias				0.0052			0.0052	
--other	-0.0011		0.0627	0.2804		0.1509	0.4929	
External	0.1064	0.0129			0.0942		0.2135	0.8891
Total	0.2151	0.0985	0.0855	0.3673	0.5161	0.5526	1.8350	

assets (down)/ liabilities (across)	1987 STOCKS (% OF GDP)							
	1 BR	2 Nonfin pub	3 Fin pub	4 Fin priv	5 Nonfin priv	6 External\4	7 Total	8 Net
Banco de la Republica--total\1		0.0439	0.0052	0.0563	0.0636	0.0139	0.1829	0.0151
--money base			0.0032	0.0287	0.0473		0.0792	
--inversiones del encaje			0.0013	0.0207			0.0221	
--deposits and bonds		0.0439	0.0006	0.0069	0.0163	0.0139	0.0816	
Nonfinancial public sector	0.0609		0.0196	0.0148	0.0144	0.3234	0.4330	-0.3541
--inversiones del encaje + obligatorias			0.0008	0.0040			0.0048	
--other	0.0609		0.0188	0.0107	0.0144	0.3234	0.4282	
Public financial intermediaries\2	0.0027	0.0047		0.0061	0.0488	0.0153	0.0775	0.0069
--inversiones del encaje + obligatorias				0.0058			0.0058	
--deposits	0.0027	0.0047		0.0003	0.0488	0.0153	0.0718	
Private financial intermediaries\3	0.0378	0.0157			0.2906	0.0306	0.3746	-0.0204
--financial rescue\4	0.0123	0.0046					0.0168	
--fondos financieros	0.0179						0.0179	
--deposits	0.0076	0.0111			0.2906	0.0306	0.3398	
Nonfinancial private sector	-0.0012		0.0597	0.2770		0.1510	0.4866	0.0145
--inversiones del encaje + obligatorias				0.0039			0.0039	
--other	-0.0012		0.0597	0.2732		0.1510	0.4827	
External	0.0978	0.0148			0.0837		0.1961	0.3380
Total	0.1979	0.0789	0.0845	0.3542	0.5010	0.5341	1.7507	

FINANCING MATRIX FOR COLOMBIA--FLOWS AS PERCE

assets (down)/ liabilities (across)	1 BR	2 Nonfin pub	3 Fin pub	4 Fin priv	5 Nonfin priv	6 External\4	7 Total	8 Net
	1985 FLOWS (% OF GDP)							
Banco de la Republica--total\1		0.0095	0.0011	0.0125	0.0199	0.0044	0.0475	0.0035
--money base			0.0007	0.0052	0.0111		0.0171	
--inversiones del encaje			0.0007	0.0062			0.0069	
--deposits and bonds		0.0095	-0.0003	0.0010	0.0088	0.0044	0.0235	
Nonfinancial public sector	0.0111		0.0069	-0.0002	0.0055	0.1421	0.1654	-0.1448
--inversiones del encaje + obligatorias			0.0002	0.0016			0.0018	
--other	0.0111		0.0067	-0.0018	0.0055	0.1421	0.1636	
Public financial intermediaries\2	0.0004	0.0013		0.0009	0.0125	0.0090	0.0241	0.0005
--inversiones del encaje + obligatorias				0.0009			0.0009	
--deposits	0.0004	0.0013		-0.0000	0.0125	0.0090	0.0232	
Private financial intermediaries\3	0.0059	0.0021			0.0764	0.0170	0.1013	-0.0233
--financial rescue\4	-0.0003						-0.0003	
--fondos financieros	0.0035						0.0035	
--deposits	0.0027	0.0021			0.0764	0.0170	0.0982	
Nonfinancial private sector	0.0040		0.0166	0.0648		0.0638	0.1492	-0.0021
--inversiones del encaje + obligatorias				0.0007			0.0007	
--other	0.0040		0.0166	0.0641		0.0638	0.1484	
External	0.0296	0.0077			0.0327		0.0700	0.1663
Total	0.0510	0.0206	0.0247	0.0780	0.1470	0.2363	0.5575	0.0000

assets (down)/ liabilities (across)	1986 FLOWS (% OF GDP)							
	1 BR	2 Nonfin pub	3 Fin pub	4 Fin priv	5 Nonfin priv	6 External\4	7 Total	8 Net
Banco de la Republica--total\1		0.0448	-0.0005	0.0204	0.0126	0.0052	0.0820	-0.0017
--money base			-0.0006	0.0106	0.0073		0.0174	
--inversiones del encaje			0.0000	0.0045			0.0045	
--deposits and bonds		0.0448	0.0001	0.0053	0.0053	0.0052	0.0601	
Nonfinancial public sector	0.0191		0.0069	0.0031	0.0041	0.1014	0.1346	-0.0814
--inversiones del encaje + obligatorias			0.0003	0.0008			0.0011	
--other	0.0191		0.0066	0.0023	0.0041	0.1014	0.1335	
Public financial intermediaries\2	-0.0005	-0.0055		0.0023	0.0102	0.0042	0.0108	0.0040
--inversiones del encaje + obligatorias				0.0017			0.0017	
--deposits	-0.0005	-0.0055		0.0005	0.0102	0.0042	0.0088	
Private financial intermediaries\3	0.0102	0.0108			0.0680	0.0040	0.0930	-0.0057
--financial rescue\4	0.0097	0.0060					0.0156	
--fondos financieros	0.0032						0.0032	
--deposits	-0.0026	0.0049			0.0680	0.0040	0.0742	
Nonfinancial private sector	-0.0043		0.0082	0.0815		0.0435	0.1090	0.0176
--inversiones del encaje + obligatorias				0.0009			0.0009	
--other	-0.0043		0.0082	0.0806		0.0435	0.1080	
External	0.0557	0.0036			0.0318		0.0911	0.0672
Total	0.0803	0.0532	0.0146	0.0873	0.1266	0.1583	0.5202	

assets (down)/ liabilities (across)	1 BR	2 Nonfin pub	3 Fin pub	4 Fin priv	5 Nonfin priv	6 External\4	7 Total	8 Net
	1987 FLOWS (% OF GDP)							
Banco de la Republica--total\1		-0.0021	0.0010	0.0104	0.0128	0.0034	0.0254	0.0083
--money base			0.0002	0.0073	0.0115		0.0190	
--inversiones del encaje			0.0007	0.0028			0.0035	
--deposits and bonds		-0.0021	0.0001	0.0003	0.0013	0.0034	0.0030	
Nonfinancial public sector	0.0116		0.0064	0.0031	0.0032	0.0668	0.0911	-0.0874
--inversiones del encaje + obligatorias			0.0001	0.0006			0.0007	
--other	0.0116		0.0063	0.0025	0.0032	0.0668	0.0904	
Public financial intermediaries\2	0.0005	0.0011		0.0018	0.0117	0.0043	0.0189	0.0003
--inversiones del encaje + obligatorias				0.0016			0.0016	
--deposits	0.0005	0.0011		-0.0002	0.0117	0.0043	0.0174	
Private financial intermediaries\3	0.0053	-0.0000			0.0677	0.0020	0.0750	-0.0012
--financial rescue\4	0.0023						0.0023	
--fondos financieros	0.0030						0.0030	
--deposits	0.0001	-0.0000			0.0677	0.0020	0.0698	
Nonfinancial private sector	-0.0003		0.0118	0.0590		0.0358	0.1064	0.0007
--inversiones del encaje + obligatorias				-0.0001			-0.0001	
--other	-0.0003		0.0118	0.0591		0.0358	0.1065	
External	0.0166	0.0048			0.0118		0.0331	0.0792
Total	0.0337	0.0038	0.0192	0.0738	0.1071	0.1123	0.3500	

assets (down)/ liabilities (across)	1 BR	2 Nonfin pub	3 Fin pub	4 Fin priv	5 Nonfin priv	6 External\4	7 Total	8 Net
	1985 FLOWS (% OF GDP -INFL. ADJ.)							
Banco de la Republica--total\1		0.0069	-0.0004	0.0035	0.0084	0.0029	0.0213	0.0011
--money base			-0.0005	0.0013	0.0019		0.0027	
--inversiones del encaje			0.0008	0.0020			0.0028	
--deposits and bonds		0.0069	-0.0006	0.0002	0.0065	0.0029	0.0160	
Nonfinancial public sector	0.0002		0.0053	-0.0038	0.0035	0.1040	0.1092	-0.0975
--inversiones del encaje + obligatorias			0.0001	0.0009			0.0009	
--other	0.0002		0.0052	-0.0047	0.0035	0.1040	0.1083	
Public financial intermediaries\2	-0.0005	-0.0014		-0.0001	0.0039	0.0079	0.0099	-0.0007
--inversiones del encaje + obligatorias				0.0000			0.0000	
--deposits	-0.0005	-0.0014		-0.0001	0.0039	0.0079	0.0098	
Private financial intermediaries\3	-0.0024	-0.0003			0.0271	0.0108	0.0352	-0.0227
--financial rescue\4	-0.0014						-0.0014	
--fondos financieros	-0.0006						-0.0006	
--deposits	-0.0004	-0.0003			0.0271	0.0108	0.0373	
Nonfinancial private sector	0.0039		0.0042	0.0130		0.0460	0.0671	-0.0027
--inversiones del encaje + obligatorias				-0.0004			0.0232	
--other	0.0039		0.0042	0.0133		0.0460	0.0675	
External	0.0212	0.0068			0.0214		0.0492	0.1225
Total	0.0224	0.0117	0.0091	0.0128	0.0844	0.1717	0.2919	0.0000

assets (down)/ liabilities (across)	1 BR	2 Nonfin pub	3 Fin pub	4 Fin priv	5 Nonfin priv	6 External\4	7 Total	8 Net
			1986 FLOWS (% OF GDP -INFL. ADJ.)					
Banco de la Republica--total\1		0.0408	-0.0017	0.0118	0.0009	0.0033	0.0552	-0.0040
--money base			-0.0015	0.0069	-0.0012		0.0041	
--inversiones del encaje			-0.0001	0.0004			0.0002	
--deposits and bonds		0.0408	-0.0001	0.0046	0.0022	0.0033	0.0508	
Nonfinancial public sector	0.0093		0.0046	0.0004	0.0018	0.0509	0.0670	-0.0236
--inversiones del encaje + obligatorias			0.0001	-0.0000			0.0001	
--other	0.0093		0.0045	0.0005	0.0018	0.0509	0.0669	
Public financial intermediaries\2	-0.0012	-0.0077		0.0014	0.0019	0.0019	-0.0037	0.0030
--inversiones del encaje + obligatorias				0.0009			0.0009	
--deposits	-0.0012	-0.0077		0.0005	0.0019	0.0019	-0.0046	
Private financial intermediaries\3	0.0032	0.0087			0.0197	-0.0032	0.0284	-0.0015
--financial rescue\4	0.0089	0.0060					0.0149	
--fondos financieros	-0.0004						-0.0004	
--deposits	-0.0053	0.0028			0.0197	-0.0032	0.0139	
Nonfinancial private sector	-0.0050		-0.0036	0.0133		0.0204	0.0251	0.0175
--inversiones del encaje + obligatorias				0.0000			0.0000	
--other	-0.0050		-0.0036	0.0132		0.0204	0.0251	
External	0.0448	0.0016			0.0183		0.0647	0.0086
Total	0.0512	0.0434	-0.0007	0.0269	0.0428	0.0733	0.2368	

assets (down)/ liabilities (across)	1 BR	2 Nonfin pub	3 Fin pub	4 Fin priv	5 Nonfin priv	6 External\4	7 Total	8 Net
	1987 FLOWS (% OF GDP -INFL. ADJ.)							
Banco de la Republica--total\1		-0.0126	0.0001	-0.0001	0.0019	0.0010	-0.0103	0.0099
--money base			-0.0005	0.0024	0.0034		0.0053	
--inversiones del encaje			0.0006	-0.0013			-0.0007	
--deposits and bonds		-0.0126	-0.0000	-0.0012	-0.0021	0.0010	-0.0148	
Nonfinancial public sector	0.0005		0.0034	0.0005	0.0006	0.0087	0.0137	-0.0270
--inversiones del encaje + obligatorias			-0.0001	-0.0002			-0.0002	
--other	0.0005		0.0035	0.0006	0.0006	0.0087	0.0139	
Public financial intermediaries\2	0.0000	0.0003		0.0002	0.0033	0.0018	0.0056	-0.0012
--inversiones del encaje + obligatorias				0.0008			0.0008	
--deposits	0.0000	0.0003		-0.0004	0.0033	0.0018	0.0050	
Private financial intermediaries\3	-0.0020	-0.0036			0.0172	-0.0044	0.0071	0.0032
--financial rescue\4	-0.0000	-0.0010					-0.0010	
--fondos financieros	-0.0004						-0.0004	
--deposits	-0.0016	-0.0026			0.0172	-0.0044	0.0086	
Nonfinancial private sector	-0.0001		0.0010	0.0097		0.0097	0.0202	-0.0024
--inversiones del encaje + obligatorias				-0.0010			-0.0010	
--other	-0.0001		0.0010	0.0106		0.0097	0.0212	
External	-0.0018	0.0026			-0.0045		-0.0038	0.0205
Total	-0.0034	-0.0133	0.0044	0.0103	0.0179	0.0168	0.0326	

Notes: \1 FAVI and fondos financieros are treated as identical to Banco de la Republica
\2 Includes BCH, FEN, Caja Agraria, and Caja Social
\3 Includes Fondo de Garantia
\4 Includes credit to Fondo de Garantia, credit from FAVI, and democratization and capitalization loans of BR
\5 Includes foreign direct investment for private sector

F I S C A L P O L I C Y

S I M U L A T I O N S

Table 2: Fiscal Policy Simulation: Interest Rate and Inflation Unchanged

	1985	1986	1987	Estimated 1988	Projected 1989	Projected 1990	Projected 1991	Projected 1992
Nominal PSBR	14.5	8.1	6.7	9.7	8.6	8.6	8.6	8.6
Net exchange rate losses	9.5	6.8	7.0	6.8	6.0	6.0	6.0	6.0
Deficit excluding exchange rate losses	5.0	1.3	1.8	2.9	2.6	2.6	2.6	2.6
Conventional deficit	3.6	-0.2	1.6	2.7	2.4	2.5	2.4	2.4
Residual	1.4	1.5	0.2	0.2	0.2	0.2	0.2	0.2
Net domestic interest payments	0.9	0.8	0.9	1.2	1.1	1.0	1.0	0.9
Net external interest payments	1.9	2.3	2.9	2.8	2.8	2.8	2.8	2.8
Primary deficit	2.2	-1.7	-2.0	-1.2	-1.3	-1.2	-1.2	-1.1
Conventional primary deficit	0.7	-3.2	-2.2	-1.4	-1.5	-1.4	-1.3	-1.3
Residual	1.4	1.5	0.2	0.2	0.2	0.2	0.2	0.2
Central bank net financing requirement	-0.3	0.2	-0.6	-1.0	-0.8	-0.8	-0.8	-0.8
net exchange rate losses	-1.3	-0.9	-1.6	-1.0	-1.6	-1.6	-1.6	-1.6
Net financing excluding exchange rate gains/losses	0.9	1.1	0.8	0.8	0.8	0.8	0.9	0.9
--losses on development lending	0.3	0.4	0.2	0.3	0.2	0.3	0.3	0.3
--other	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6
Consol public sector financing (incl central bank)	6.0	3.5	3.1	4.8	4.4	4.4	4.5	4.5
money creation	1.7	1.7	1.9	1.0	1.9	1.8	1.8	1.8
reserves	0.6	1.0	0.7	0.8	0.7	0.7	0.7	0.7
currency	1.1	0.7	1.2	1.1	1.2	1.1	1.1	1.1
bonds to private sector	1.1	0.7	0.2	0.8	0.7	0.7	0.7	0.7
foreign borrowing (net of nonsov dep and srate loss)	3.8	3.1	-0.9	0.9	1.1	1.1	1.1	1.1
foreign exchange reserves (net of srate gain	-0.8	-4.0	0.7	-0.8	-0.8	-0.8	-0.8	-0.8
net borrowing from private financial institutions	-0.8	0.8	0.8	0.8	0.1	0.8	0.8	0.8
net borrowing from public financial institutions	0.8	1.2	0.8	0.4	0.8	0.8	0.8	0.8
forced and reserve investments	0.9	0.6	0.4	0.7	0.6	0.6	0.6	0.6
Consol public sector borrowing requirement--breakdown	6.0	3.5	3.1	4.8	4.4	4.4	4.5	4.5
Net deficit-cost bkgNFPS (excl srate losses)	5.0	2.4	2.6	3.7	3.4	3.5	3.5	3.5
Credit by fondos financieros	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Financial support of banking system	0.2	1.6	0.2	0.8	0.8	0.8	0.8	0.8
Credit to private sector	0.4	-0.4	0.0	0.0	0.0	0.0	0.0	0.0
Other rediscounts to banks	0.8	-0.8	0.1	0.8	0.5	0.2	0.2	0.2
Residual (consistency check)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Inflation rate (GDP deflator)	24.9	28.4	24.8	29.8	24.0	24.0	24.0	24.0
Inflation rate (CPI)	21.8	21.6	22.7	29.8	24.0	24.0	24.0	24.0
Interest rates (Nominal)								
--deposit	35.9	32.1	34.2	40.8	35.9	35.9	35.9	35.9
--lending	45.8	41.2	41.4	48.7	43.8	43.8	43.8	43.8
--paid on forced investments	17.2	17.2	17.2	22.4	18.1	18.1	18.1	18.1
--development lending	22.6	22.6	31.4	36.7	31.9	31.9	31.9	31.9
Interest rates (Real)								
--deposit	8.8	2.0	8.0	9.4	9.8	9.8	9.8	9.8
--lending	16.8	10.0	13.8	15.7	15.7	15.7	15.7	15.7
--paid on forced investments	-6.2	-8.8	-5.7	-4.7	-4.7	-4.7	-4.7	-4.7
--development lending	-1.8	-4.8	5.7	6.8	6.4	6.4	6.4	6.4
Interest rate differentials								
--deposit minus forced investment	18.7	15.0	17.0	18.1	17.8	17.8	17.8	17.8
--lending minus development lending	22.7	18.8	10.0	12.0	11.8	11.8	11.8	11.8
Growth rate	3.1	5.1	5.4	3.7	4.5	4.5	4.5	4.5
Net long-term external public financing (US$million)	1140.9	1011.9	-310.8	227.7	422.1	434.1	458.6	474.0
Debt ratios (end of period)								
Internal public debt	8.9	8.1	7.9	8.2	8.1	8.1	8.1	8.1
External public debt	24.7	23.1	22.5	22.5	22.5	22.5	22.5	22.5

Table 3: Fiscal Policy Simulation: Fall in Interest Rates

	1985	1986	1987	Estimated 1988	Projected 1989	Projected 1990	Projected 1991	Projected 1992
Nominal PSBR	14.5	8.1	8.7	9.7	8.0	7.8	7.7	8.2
Net exchange rate losses	9.5	6.8	7.0	6.8	6.0	6.0	6.0	6.0
Deficit excluding exchange rate losses	5.0	1.3	1.8	2.9	2.1	1.9	1.8	2.2
Conventional deficit	3.6	-0.2	1.6	2.7	1.9	1.7	1.6	2.1
Residual	1.4	1.5	0.2	0.2	0.2	0.2	0.2	0.2
Net domestic interest payments	0.9	0.8	0.9	1.2	1.1	0.8	0.6	0.3
Net external interest payments	1.9	2.3	2.9	2.8	2.8	2.6	2.8	2.8
Primary deficit	2.2	-1.7	-2.0	-1.2	-1.8	-1.7	-1.6	-0.9
Conventional primary deficit	0.7	-3.2	-2.2	-1.4	-2.0	-1.9	-1.7	-1.1
Residual	1.4	1.5	0.2	0.2	0.2	0.2	0.2	0.2
Central bank net financing requirement	-0.3	0.2	-0.6	-1.0	-0.6	-0.8	-0.9	-0.8
net exchange rate losses	-1.3	-0.0	-1.6	-1.9	-1.6	-1.6	-1.6	-1.6
Net financing excluding exchange rate gains/losses	0.9	1.1	0.8	0.8	0.8	0.8	0.8	0.8
--losses on development lending	0.3	0.4	0.2	0.3	0.3	0.3	0.2	0.2
--other	0.6	0.7	0.6	0.5	0.6	0.6	0.6	0.6
Consol public sector financing (incl central bank)	6.9	3.5	3.1	4.8	3.9	3.7	3.5	4.0
money creation	1.7	1.7	1.9	1.9	1.9	1.8	1.8	1.8
reserves	0.6	1.0	0.7	0.8	0.7	0.7	0.7	0.7
currency	1.1	0.7	1.2	1.1	1.2	1.1	1.1	1.1
bonds to private sector	1.1	0.7	0.2	0.8	0.7	0.7	0.7	0.7
foreign borrowing (net of nonmon dep and exrate loss)	3.8	3.1	-0.9	0.9	1.1	1.1	1.1	1.1
foreign exchange reserves (net of exrate gain	-0.8	-4.0	0.7	-0.3	-0.8	-0.8	-0.8	-0.8
net borrowing from private financial institutions	-0.3	0.3	0.3	0.5	-0.4	-0.5	-0.7	-0.3
net borrowing from public financial institutions	0.5	1.2	0.5	0.4	0.3	0.4	0.4	0.4
forced and reserve investments	0.9	0.5	0.4	0.7	0.5	0.6	0.6	0.6
Consol public sector borrowing requirement--breakdown	6.9	3.5	3.1	4.8	3.9	3.7	3.5	4.0
Net deficit-cent bk+NFPS (excl exrate losses)	5.0	2.4	2.6	3.7	2.9	2.7	2.5	3.0
Credit by fondos financieros	0.3	0.3	0.3	0.6	0.5	0.5	0.5	0.5
Financial support of banking system	0.0	1.6	0.2	0.3	0.3	0.3	0.3	0.3
Credit to private sector	0.4	-0.4	0.0	0.0	0.0	0.0	0.0	0.0
Other rediscounts to banks	0.3	-0.3	0.1	0.3	0.2	0.2	0.2	0.2
Residual (consistency check)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Inflation rate (GDP deflator)	24.0	28.4	24.8	28.5	24.0	24.0	24.0	24.0
Inflation rate (CPI)	21.8	21.6	22.7	28.5	24.0	24.0	24.0	24.0
Interest rates (Nominal)								
--deposit	35.9	32.1	34.2	40.5	33.8	30.8	27.7	27.7
--lending	45.3	41.2	41.4	46.7	40.2	36.2	32.2	32.2
--paid on forced investments	17.2	17.2	17.2	22.4	22.4	23.4	23.9	23.9
--development lending	22.6	22.6	31.4	36.7	31.9	31.9	31.9	31.9
Interest rates (Real)								
--deposit	8.8	2.9	8.0	9.4	7.9	5.5	3.0	3.0
--lending	16.3	10.0	13.6	15.7	13.1	9.8	6.6	6.6
--paid on forced investments	-6.2	-9.8	-5.7	-4.7	-1.2	-0.4	0.0	0.0
--development lending	-1.8	-4.5	5.7	6.3	6.4	6.4	6.4	6.4
Interest rate differentials								
--deposit minus forced investment	18.7	15.0	17.0	18.1	11.4	7.3	3.7	3.7
--lending minus development lending	22.7	18.6	10.0	10.0	8.3	4.3	0.3	0.3
Growth rate	3.1	5.1	5.4	3.7	4.5	4.5	4.5	4.5
Net long-term external public financing (US$million)	1140.0	1011.9	-310.3	327.7	422.1	434.1	453.6	474.0
Debt ratios (end of period)								
Internal public debt	6.9	6.1	7.0	6.2	7.6	7.0	6.3	6.3
External public debt	24.7	23.1	22.5	22.5	22.5	22.5	22.5	22.5

Table 4: Fiscal Policy Simulation: Fall in Interest Rates and Inflation

	1985	1986	1987	Estimated 1988	Projected 1989	Projected 1990	Projected 1991	Projected 1992
Nominal PSBR	14.5	8.1	8.7	9.7	8.0	6.1	4.4	4.0
Net exchange rate losses	9.5	6.8	7.0	6.8	6.0	4.3	3.0	3.0
Deficit excluding exchange rate losses	5.0	1.3	1.8	2.9	2.1	1.7	1.5	1.9
Conventional deficit	3.6	-0.2	1.5	2.7	1.9	1.6	1.3	1.8
Residual	1.4	1.5	0.2	0.2	0.2	0.2	0.2	0.2
Net domestic interest payments	0.9	0.8	0.9	1.2	1.1	0.8	0.8	0.2
Net external interest payments	1.9	2.3	2.9	2.8	2.8	2.8	2.8	2.8
Primary deficit	2.2	-1.7	-2.0	-1.2	-1.8	-1.7	-1.6	-1.1
Conventional primary deficit	0.7	-3.2	-2.2	-1.4	-2.0	-1.8	-1.8	-1.3
Residual	1.4	1.5	0.2	0.2	0.2	0.2	0.2	0.2
Central bank net financing requirement	-0.3	0.2	-0.8	-1.0	-0.8	-0.5	-0.4	-0.4
net exchange rate losses	-1.3	-0.9	-1.5	-1.9	-1.6	-1.2	-0.8	-0.8
Net financing excluding exchange rate gains/losses	0.9	1.1	0.8	0.8	0.8	0.6	0.4	0.5
--losses on development lending	0.3	0.4	0.2	0.3	0.3	0.1	-0.1	-0.1
--other	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6
Consol public sector financing (incl central bank)	6.9	3.5	3.1	4.8	3.9	3.1	2.5	2.9
money creation	1.7	1.7	1.9	1.9	1.9	1.5	1.2	1.1
reserves	0.6	1.0	0.7	0.8	0.7	0.5	0.4	0.4
currency	1.1	0.7	1.2	1.1	1.2	1.0	0.8	0.7
bonds to private sector	1.1	0.7	0.2	0.3	0.7	0.5	0.4	0.4
foreign borrowing (net of nonmon dep and srate loss)	3.8	3.1	-0.9	0.9	1.1	1.2	1.3	1.3
foreign exchange reserves (net of srate gain	-0.8	-4.0	0.7	-3.3	-0.3	-0.4	-0.4	-0.4
net borrowing from private financial institutions	-0.3	0.3	0.3	0.5	-0.4	-0.5	-0.6	0.0
net borrowing from public financial institutions	0.5	1.2	0.5	0.4	0.3	0.3	0.2	0.2
forced and reserve investments	0.9	0.6	0.4	0.7	0.6	0.4	0.3	0.3
Consol public sector borrowing requirement--breakdown	6.9	3.5	3.1	4.8	3.9	3.1	2.5	2.9
Net deficit-cent bk+NFPS (excl srate losses)	5.9	2.4	2.8	3.7	2.9	2.4	1.9	2.4
Credit by fondos financieros	0.3	0.3	0.3	0.8	0.5	0.4	0.3	0.3
Financial support of banking system	0.0	1.6	0.2	0.3	0.3	0.2	0.2	0.2
Credit to private sector	0.4	-0.4	0.0	0.0	0.0	0.0	0.0	0.0
Other rediscounts to banks	0.3	-0.3	0.1	0.3	0.2	0.2	0.1	0.1
Residual (consistency check)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Inflation rate (GDP deflator)	24.9	28.4	24.3	28.5	24.0	16.8	10.6	10.6
Inflation rate (CPI)	21.8	21.6	22.7	28.5	24.0	16.8	10.6	10.6
Interest rates (Nominal)								
--deposit	35.9	32.1	34.2	40.5	33.8	22.5	15.0	15.0
--lending	45.3	41.2	41.4	48.7	40.2	28.2	18.2	18.2
--paid on forced investments	17.2	17.2	17.2	22.4	22.4	15.4	9.9	9.9
--development lending	22.6	22.6	31.4	36.7	31.9	23.9	17.9	17.9
Interest rates (Real)								
--deposit	8.6	2.9	8.0	9.4	7.9	6.2	4.0	4.0
--lending	18.3	10.0	13.8	15.7	13.1	10.2	6.9	6.9
--paid on forced investments	-6.2	-8.8	-5.7	-4.7	-1.2	-0.8	-0.6	-0.6
--development lending	-1.8	-4.5	5.7	6.3	6.4	6.5	6.6	6.6
Interest rate differentials								
--deposit minus forced investment	18.7	15.0	17.0	18.1	11.4	8.1	5.1	5.1
--lending minus development lending	22.7	18.6	10.0	12.0	8.3	4.3	0.3	0.3
Growth rate	3.1	5.1	5.4	3.7	4.5	4.5	4.5	4.5
Net long-term external public financing (US$million)	1140.9	1011.9	-310.3	327.7	422.1	493.1	542.0	566.4
Debt ratios (end of period)								
Internal public debt	6.9	8.1	7.9	8.2	7.6	7.0	6.4	6.5
External public debt	24.7	23.1	22.5	22.5	22.5	22.5	22.5	22.5

The Tax Reform of 1986 and the Real Cost of Capital

Derivation of the Cost of Capital

This Annex draws on the modern theory of optimal business investment behavior to derive an equation for the cost of capital services (rental price of capital) for the non-financial corporate sector of the Colombian economy to be used as a basis to evaluating the impact of the 1986 tax reform. The cost of capital services refers to the cost of using one unit of capital for a specified period of time, i.e., one year. It depends not only on the cost of funds and the cost of asset decay, but also on the benefits of tax provisions for businesses' depreciations and for deductibility of interest expenses. Also, the determination of the cost of capital relies on the interaction between inflation and taxes. To the extent that interest payments which are deductible against corporate income taxes are in part payments of the principal, the real cost of capital is reduced. This positive aspect of inflation is, however, offset in Colombian tax regime by the historical cost base depreciation rules, which do not fully compensate the companies for higher replacement cost of capital.

Analytically, the derivation of the cost of capital is facilitated by focusing on the investment decision from the perspective of the equity holder. Consider then an investment in a project costing P_k at the time of acquisition. If a proportion, b, of that investment is financed through debt, and if the statutory corporate income tax rate is u, the shareholder's share of the original investment outlays, under the prevailing tax depreciation allowances in Colombia, will be $(1-zu-b)\ P_k$, where z is the present value of depreciation allowances. For the project to be viable, this must be equal to the present value of the stream of net income; more formally,

$$P_k(1-zu-b) = \int \exp\ (-(\tau+\delta)t)\ [(1-u)qP_y - ((1-u)R + (1-a)ux + (\delta-x)bP_k + uzP_k]dt$$

where:

- q = real user cost of capital
- P_k = purchase price of capital
- P_k = price of output, GDP price deflator
- τ = real required rate of return on equity
- δ = rate of depreciation
- b = target debt capital ratio
- R = nominal rate of interest

and other variables are already defined.

Solving equation (A.1) for the real cost of capital, q, yields:

$$q = \frac{P_k}{P_y} \left[(\tau+\delta) \frac{1 - uz}{1 - u} - \frac{\tau - (1-u) R + x}{1 - u} b + \frac{u (1-a) x}{1 - u} b \right] \quad (A.2)$$

It is apparent from equation (A.1) that the elimination of the tax deductibility of inflationary components of business interest payments will increase the real cost of capital, and that this increase is captured by the additional term.

$$\frac{u (1-a) x}{1 - u} b$$

This term vanishes when a=1, which corresponds to the usual full deductibility of interest expenses; in that case, equation (2) takes the familiar form [see, for instance, Bosworth (1985)]. Furthermore, when the inflationary component of interest expenses are fully phased out, i.e., when a=0, the overall increase in the real cost of capital will be equal to

$$\frac{u x}{1 - u} b$$

which is independent of the interest rates and depends only on the corporate income tax rate, "u", rate of inflation, "x", and corporate debt-capital ratio, "b".

Determination of Corporate Leverage Ratio

This, however, yields only a partial view of the impact of the tax reform on the real cost of capital. A more precise view should take into account both possible change in the firm's debt-capital ratio, and of the impacts of other provisions. In fact, both the reduction in the corporate tax rate and the changes in depreciation allowances work to lower the real cost of capital to corporate borrowers. To assess their influences and to capture their interactions, it is necessary to return to equation (2) and compare its estimates under the two tax regimes, i.e., before and after 1986. There remains, however, one obstacle; there is great uncertainty as to how the firm's debt policy, i.e., their debt leverage ratio, may react to the changes introduced in the tax reform.[1] The associated increase in the real cost of

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1/ In a broader perspective, this uncertainty about the impact of tax changes on corporate debt leverage ratio reflects the more fundamental uncertainty about the determinants of corporate financial structure. Questions concerning firms decisions as to how much to draw on retained earnings to finance their investment expenditures and how much to raise externally, through debt or equity, or what portion of their earnings to distribute as dividends and what portion to reinvest, have, unfortunately, still remained unsettled even in the context of industrial countries and even in theory. Anomalies, paradoxes, and puzzles are more often used to describe the state of knowledge, than rigorous understandings. See, for instance, Black (1976), Myers (1984), and Mayer (1988) for a critical assessment of the state of the art.

debt should, in principle, discourage debt financing. Econometric analysis of past determinants of corporate leverage ratio in Colombia, does not support this assertion, however.[2] Indeed, as apparent from the estimated equations reported in Table 3, the results indicate that the corporate sector in Colombia seems to have followed a constant, desired, or targeted, debt-capital ratio strategy with some adjustment lags involved. Such a desired debt-capital ratio can be extracted from equation (3.2) to yield an estimate of 0.86, which appears consistent with the historical pattern of corporate finance in Colombia.

Parameter Estimates and Assumptions

The remaining variables were estimated or assumed as follows:

(i) τ, the real required return on equity taken to be 9.3 percent which is the average over the 1970-85 period of real return on equity after making adjustments for inflation-induced depreciation in the real value of debt and economic depreciation in underlying capital base.

(ii) δ, economic depreciation, assumed to be 5 percent.

(iii) Z, the present value of depreciation allowances was estimated to be 0.231 and 0.579 for the pre- and post-tax reform period respectively.

2/ In addition, given the prevailing wide differential between interest rates and loans secured through official funds, which are rediscountable at the Central Bank, and loans obtained from financial institutions (own resources), the higher overall cost of debt could shift demand towards official funds. This, in conjunction with government policy of gradually raising rates on the resources of official funds is likely to put increasing pressure on lending rates.

Table 3: Regression Results for Determinants of Aggregate Debt-Capital Ratio in the Non-Financial Corporate Sector
Annual Data, 1970-1985

(3.1) $d_t = 0.254 - 0.007r_t + 0.724d_{t-1}$
(2.2) (1.2) (4.3)
$R^2 = 0.60$

(3.2) $d_t = 0.237 + 0.239y_t + 0.728d_{t-1}$
(2.2) (1.6) (4.3)
$R^2 = 0.63$

(3.3) $d_t = 0.224 - 0.003r_t + 1.91y_t + 0.741d_{t-1}$
(2.0) (0.5) (1.1) (4.3)
$R_2 = 0.64$

(3.4) $d_t = 0.268 - 0.005R_t + 2.396(u_tx_t) + 0.621d_{t-1}$
(2.6) (0.5) (1.2) (1.7)
$R^2 = 0.61$

Notes and Notation; The variables are defined as follows:

d_t = aggregate debt-capital ratio, where debt is measured as total outstanding loans from financial institutions, including resources facilitated through official funds, to the NF corporate sector; and capital is measured as sum of total fixed assets and inventories.

r_t = real rate of interest, bank lending rate minus rate of inflation (GDP)

y_t = deviation of real GDP from its linear time trend.

R = nominal bank lending rate.

u_tx_t = inflation tax shield.

"t" ratios are in parentheses.

References

-- Black, F. (1976), "The Dividend Puzzle", Journal of Portfolio Management, Winter, pp 5-8.
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-- Mayer, C. (1988), "New Issues in Corporate Finance", European Economic Review, No. 5, pp 1167-1183.
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The Relationship of Output Growth and Unemployment Rate in Colombia

Arthur Okun formulated a testable relation between unemployment rate and output growth as the following[1] :

$$\text{output gap} = a(u - u^*) \qquad (1)$$

where

a - parameter (a > 0)
u - actual unemployment rate
u* - structural rate of unemployment

and,

$$\text{output gap} = (Yp - Y)/ Yp \qquad (2)$$

where

Yp - potential (full-employment) output
Y - actual output.

This relation, which is called Okun's Law in the literature, stipulates that the shortfall of output from its capacity (full employment) level is positively associated with the actual unemployment rate above its natural rate. Okun's Law is expressed in terms of the level of output. For the analytical purpose at hand, it is converted into a relation in terms of growth of output, as follows:

By combining equations (1) and (2) we get,

$$(Yp - Y)/Yp = a(u - u^*) \qquad (3.1)$$

or

$$1 - Y/Yp = a(u - u^*) \qquad (3.2)$$

we define

$$Yp = Yp^{o}\, e^{\delta pT} \qquad (4.1)$$

$$Y = Y^{o}\, e^{\delta yT} \qquad (5.1)$$

1/ Macroeconomics, Rudiger Dornbusch and Stanley Fischer, USA 1978, pp. 430-433.

where,

Yp - potential (full employment) output in base year
δp - Long term potential output growth rate
Y^C - Cyclical component of actual output
δy - Long term actual output growth rate
T - Time

Rearranging (5.1) yields,

$$Y^C = Y/e^{\delta yT} \qquad (5.2)$$

taking natural logs of (5.2) yields,

$$\text{Log } Y^C = \text{Log } Y - \delta yT \qquad (5.3)$$

Taking the derivative of (5.3) wilth respect to time yields,

$$\hat{Y}^C = \hat{Y} - \delta y \qquad (5.4)$$

and substituting 4.1 and 5.1 into 3.2 yields,

$$1 - (Y^C e^{\delta yT} / Yp^o e^{\delta pT}) = a\ (u - u^*) \qquad (6.1)$$

or

$$1 - (Y^C / Yp^o)\ e^{(\delta y - \delta p)T} = a\ (u - u^*) \qquad (6.2)$$

which gives

$$Y^C\ e^{(\delta y - \delta p)T} = Yp^o - Yp^o a\ (u - u^*) \qquad (6.3)$$

Taking natural logs of (6.3) gives,

$$\text{Log } Y^C + (\delta y - \delta p)\ T = \text{Log } [(Yp^o - Yp^o\ a\ (u - u^*)] \qquad (6.4)$$

and differentiating (6.4) with respect to time yields,

$$\hat{Y}^C + \delta y - \delta p = - [a\ (u - u_{t-1})] / [1 - a\ (u - u^*)] \qquad (6.5)$$

Simplify (6.5) by using 5.4 yields the following non-linear equation between output growth and unemployment rate:

$$\hat{Y} - \delta p = - [a\ (u - u_{t-1})] / [1 - a\ (u - u^*)] \qquad (6.6)$$

The advantage of this relationship, compared with the original Okun formulation is that the estimation of this relation does not require data on potential output. In fact, the growth in potential output gap is estimated jointly with the coefficient of the basic Okun model. This similification is

gained by assuming that the growth rate of potential output approximates a constant.

Results

How much does the economy has to grow in order to reach the structural urban unemployment rate depends on how fast the country wants to reach this level. By using the non-linear model previously developed, we obtained Table I which shows how long it would take to reach an urban unemployment rate of 7.0% given different GDP growth rates.

Table I

Year by which Urban Unemployment is Reduced to the Structural Level (7%)

GDP growth (% p.a.)	Year	Urban Unemployment (persons)	Difference with fast growth option (6.2%) (%)
6.2	1989	639,414	-*-
5.4	1990	665,630	4.1
5.0	1992	710,286	11.1
4.8	1994	757,938	18.5
4.5	after 2000	1,193,212 (1994)	86.6

Table II

Urban Labor Force (PEA)

Year	Urban PEA
1986	8,097,141
1987	8,429,123
1988	8,774,717
1989	9,134,481
1990	9,508,994
1991	9,822,791
1992	10,146,943
1993	10,481,793
1994	10,827,692

Note: Urban labor force growth - 4.1% (1986-90) & 3.3% (1991-95) based on Chenery Report, p.56.

A MODEL OF LONG-TERM GROWTH

Section I. An Overview of the Model

1. The model used in constructing the Base Case and Efficient Growth scenarios reported in Chapter IV of this Report is described in this Annex. The main use of the model is to derive the implications for domestic savings and external financing needs for any given economic growth assumption of the economy, under the premise that economic growth needs to be adequately financed by domestic savings and external capital. The adequacy of domestic savings is judged by a comparison between the implicit savings rate under the given economic growth assumption with the ex-ante domestic savings rate. The adequacy of external capital is judged by a comparison of the implicit international reserves level with a predefined minimum level, which is considered to be four months of imports of goods and services. If the implicit savings rate falls short of the ex-ant savings rate or if the implicit reserves level falls below the minimum level, the assumed economic growth rate is then not achievable. The model then adjust the economic growth rate downward by lowering the investment rate until the underlying constraints are met.

2. The model can be summarized in three equations. The first equation defines the relationship between economic growth and investment, which is the growth equation in Section III, Chapter IV. The second equation defines the domestic savings rate GDS in real terms as the difference between investment and resource gap: imports M minus exports X, after adjusting for the gain (loss) in the terms of trade TTADJ. This equation is expressed in terms of constant US dollars with the price of imports being the implicit deflator. The third equation is balance of payments equation, defining international reserves as the sum of current account balance $CAB and capital inflows $F. This equation is in nominal terms.

Equation 1: $y = (1 / ICOR) * (I / Y)$,
where y = real economic growth rate
ICOR= incremental capital output ratio
I = real investment
Y = real output

Equation 2: $GDSADJ = I - (M - X) + TTADJ$,
where GDSADJ = GDS adjusted for the terms of trade
TTADJ = ($ X / PM) - X
I = real investment
M = real imports of goods and nonfactor services
$ X = nominal exports of goods and nonfactor services
X = real exports of goods and nonfactor services
PM = import price index in US dollars

Equation 3: $R = $CAB + $F,
where $R = international reserves
$CAB = $X - $M + $FSY + $TRAN
$X = nominal exports of goods and nonfactor services
$M = nominal imports of goods and nonfactor services
$FSY = net factor service income
$TRAN = net transfer receipts
$F = net capital inflows (direct foreign investment, long-term capital inflow, short-term capital inflow)

3. In the model, all the real variables are expressed in constant 1986 US dollars and all the nominal variable are expressed in current US dollars. The savings equation (equation 2) includes a terms of trade adjustment for two reasons. First, it preseves the consistency between the real and the nominal account. Second, the terms of trade loss has implications for domestic and external financing needs. The first issue can be seen by multiplying equation 2 by the dollar price deflator PM, yielding

Equation 2A: (GDSADJ - I)*PM = ($X - $M).

Dividing this equation by nominal GDP, $Y, to obtain ratios in terms of $Y yields

Equation 2B: (GDSADJ - I)*PM/$Y = ($X - $M)/$Y.

From equation 2, this equation can be written in real terms as

Equation 2C: (GDSADJ - I)/Y = - [(M - X) - TTADJ]/Y,
where real GDP, Y, is defined as $Y/PM.

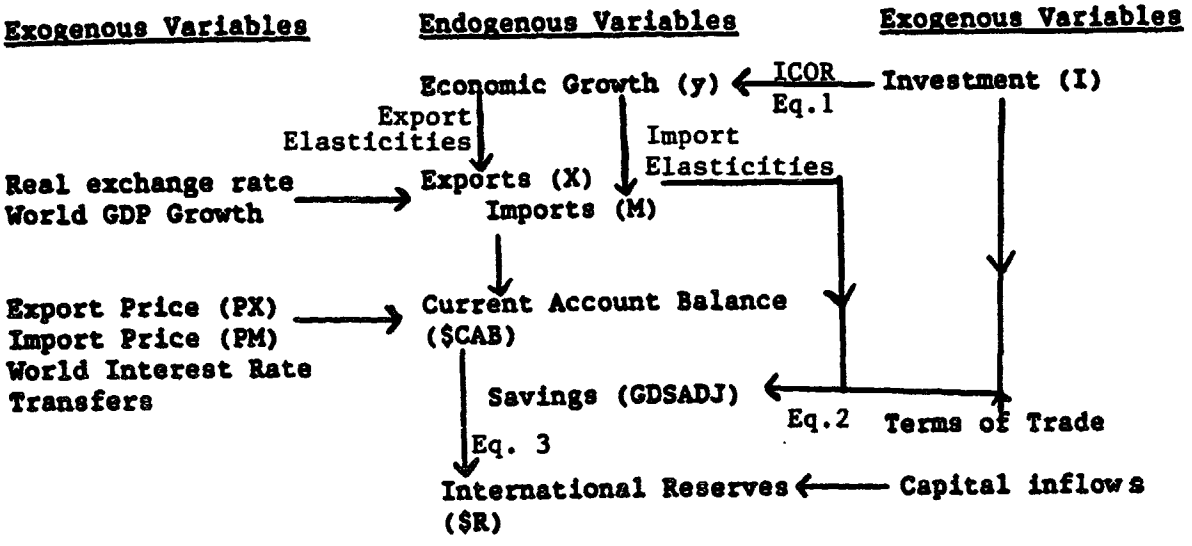
4. These derivations demonstrate that if GDS is defined to include the terms of trade adjustment, nominal and real indentities can be made consistent. Further, since

($M - $X)/Y$ = [(M -X) - TTADJ]/Y,

a trade surplus in real terms, X > M, could turn into a deficit in nominal terms: $M > $X, if the terms of trade loss is greater in absolute terms than the real trade surplus. In external financing terms, the terms of trade loss thus generates external financing needs just like an ordinary real trade deficit does. If external financing is given, the loss in the terms of trade must be made up by a greater domestic savings effort in order to keep the domestic investment program intact. This is the other reason why GDS is defined to include the terms of trade adjustment.

5. The model differentiates public and private investment and therefore treats the economic growth of the public and private sector separately. It projects Colombia' main exports and imports :hydrocarbons, coffee, coal, nickels, manufacturers, other minor exports on the export side, and consumer, raw materials, and capital goods on the import side. It projects export prices, import prices, transfer income, interest payments on external debt and other current account items. In addition, it

projects all major gross and net capital inflows through a external debt routine that links commitments to disbursements and computes debt service payments and various debt service indicators. Econometric method has been used to model imports, manufacturing and other minor exports. The trade model for exports and imports is discussed in Section II of this Appendix. The basic causality of the entire model can be summaried by the following flow chart.



6. Given the information of all the exogenous variables, the model starts with presumed investment rates of the public and private sector. With assumed incremental capital output ratios (ICORs), the growth rate of the economoy is determined through equation 1. Assuming a constant real exchange rate, real GDP growth determines exports (X) through export supply (capacity) elasticities and imports (M) through import elasticities. However, as noted earlier, the export specification is only applied to manufacturing and other minor exports. And in this case, the export price is simultaneously determined with export volume and it is not an exogenous variable. Given the projections of export prices of other goods, import prices, and interest rates, the current account balance ($CAB) is obtained. The current account plus the projected capital inflows ($F) then determine changes in the reserve level ($R) through equation 3. Given the projected terms of trade, the trade balance, and investment, gross domestic savings (GDSADJ) is then determined from equation 2.

Section II. A Trade Model for Colombia

7. This section reports the specification, estimation and results of a trade model of Colombia. The model is described in the first sub-section. The estimated results and their policy implications are presented in the second sub-section. The third sub-section presents a decomposition of the growth in exports revenues by using the estimated model. Finally, the last sub-section derives comparative static results on the effects of major determinants of Colombian exports revenues.

A. Model

$$M_i^D = \alpha_0 + \alpha_1 \left(\frac{PM_i}{PD_i}\right) + \alpha_2 y_i + e \qquad (1)$$

$$X_i^D = \beta_0 + \beta_1 \left(\frac{PX_i}{PW_i}\right) + \beta_2 yw_i + \epsilon \qquad (2)$$

$$X_i^S = \delta_0 + \delta_1 \left(\frac{PX_i}{PH_i}\right) + \delta_2 C_i + \mu \qquad (3)$$

where all variables are in logs and are defined as:

M_i^D : demand for imports of i goods.

$\left(\frac{PM_i}{PD_i}\right)$: ratio of import prices to domestic price for i goods.

y_i : variable for domestic activity for i import goods.

X_i^D : demand for exports of i goods.

$\left(\frac{PX_i}{PW_i}\right)$: ratio of domestic export prices to world export prices for i goods category.

yw_i : activity variable for i goods in the export demand equation.

X_i^S : export supply of i goods.

$\left(\frac{PX_i}{PH_i}\right)$: ratio of domestic export prices to home goods price.

C_i : capacity variable for i export goods.

8. Equation (1) has been estimated for imports of good and non-factor services, imports of consumer goods, imports of intermediate products and capital goods. For the aggregate imports equation, both the cyclical and secular component of income demand elasticity were successfully estimated as well. The secular component is defined as a trend of GDP and the cyclical component as deviations from actual and trend generated GDP. (see equations 1 to 6 in table 1).

9. The demand for exports, equation (2), has been estimated for exports of manufactured goods and for "otras exportaciones menores" (minor-exports). In addition to export demand, a supply function has also been estimated for manufactured exports and other minor exports (equation 3) as a function of the supply price and installed capacity. All quantities are expressed in constant US dollars. All relative prices are also expressed in terms of ratios of dollar prices.

B. Estimation Results

10. Ordinary least squares was used to estimate imports equations. In the case of exports, instrumental variables were used to take into account the simultanity of export demand and supply. Variables' definitions and major sources of data are described at the end of this section.

11. The results are generally good on grounds of both econometrics and economic theory. The exceptions are consumer goods imports for which the parameters are not significantly different from zero, even though with the expected signs; and exports of "other menores" for which relative prices are not significant and solely industrial wages as a proxy of domestic costs seems to matter. The remaining equations, (see table 1) for which the estimated parameters are statistically different from zero and have the expected signs, indicate two conclusions:

a) imports are relatively price inelastic with an income elasticity around one. Thus, more responsiveness to domestic absorption than to relative prices can be expected on imports adjustment;

b) manufactured exports are highly demand price elastic but show, surprisingly, a relatively low responsiveness to prices on the supply side.

12. These results are fairly consistent with previous econometric work on import demand and manufactures export demand and supply for a number of developing countries [see Faini, Pritchett and Clavijo (1988) and Clavijo and Senhadji-Semlali (1987)].

13. As three out of six import equations presented a serial correlation problem, indicating a degree of misspecification, we decided to introduce a variable to take into account import controls. Cuddington (1986) and Garcia-Garcia (1988) have pointed out that correlation exists between the coffee cycle and Colombia's trade policy measures. During the trough of coffee cycles, import controls have often been strengthened, but loosened during the peaks. Indeed, in the last thirty years, coffee booms have allowed short-lived import booms, often followed by sudden reversals in the face of coffee prices decline. Hence, real coffee prices, could be a good indicator of import controls. It is not surprising therefore, that econometric results show a high correlation both for total imports and consumer goods imports which have been subject to licensing and other import control measures. For imports of intermediate and capital goods the correlation was not significantly different from zero, reflecting probably the less pervasive controls and the more liberal regime these imports face.

14. Like is often the case on developing country imports, our results provide some evidence on how trade flows respond differently to secular and business cycle income changes. The cyclical income import demand elasticity of 1.57 is not surprising in view of the structure of Colombia's imports heavily weighed toward capital and intermediate goods. (see equation 3, table 1.)

15. Export equations both for manufactured goods and other menores are supply price inelastic but more sensitive to capacity expansion. Whereas manufactured exports demand are highly price elastic and less sensitive to foreign demand. With these parameters (see equations 7 and 8) a very low multiplier effect on export revenues can be expected from an increase of

world demand or a reduction of domestic prices. The low supply responsiveness to price incentives as well as the high price and low income elasticities of manufactures export demand seem to suggest that, at least in the short-run, exports are determined by supply side factors such as export capacity. Thus, Colombia needs to increase further its export diversification, in order to increase its income elasticity of export demand.

16. The policy implications of the empirical estimates of the trade equations are:

1) Colombia should rely more on absorption policies to control import demand because its imports are not price elastic;

2) In the short-run, manufactured exports can be stimulated by exchange rate devaluation because both export demand and supply are responsive to price changes, especially when there is ample excess capacity, and;

3) Over the long-run export supply being primarily determined by export capacity, the large price elasticity of export demand will effectively lead to export volume growth, provided the capacity expansion continues. Thus, export policies should be directed toward improving the supply incentives for exports.

List of Variables

Import Functions

Equations 1 and 2

MGNFS = Imports of goods and non-factor services at constant prices (source: BESD and Colombia Division).

Relative Prices = Ratio of import prices (defined as the implicit deflator of imports of goods and non-factor services) over GDP deflator. (Source: BESD and Colombia Division).

Activity Variable = Real GDP at marked constant prices (source: BESD and Colombia Division).

Investment Intensity = Ratio of gross fixed capital formation to real GDP.

Real Coffee Prices = Colombian export coffee prices in dollars deflated by Colombian import unit values (source: Colombia Division).

Equation 3

MGNFS = Imports of goods and non-factor services at constant prices (source: BESD and Colombia Division).

Relative Prices = Ratio of import prices (defined as the implicit deflator of imports of G and NFS) over the GDP deflator (Source: BESD and Colombia Division).

Table 1
Estimation Results

Dependent Variable	Independent Variable: Const.	Relative Prices	Activity Variable	Lag Dependent Variable	Real Coffee Prices t-2	Cyclical Income	Capacity Variable	Investment Intensity	R^2	DW	Sample Period
Import Functions											
1. MGNFS	2.39	-.34	.852		.193			1.719	.98	2.33	72-87
	(2.03)	(-2.36)	(11.70)		(5.19)			(6.16)			
2. MGNFS	-2.08	-.73	.972		.142				.89	1.30	72-87
	(1.11)	(-2.77)	(6.85)		(1.94)						
3. MGNFS	-2.07	-.339	.985		.105	1.575			.94	2.01	72-87
	(-1.52)	(-1.52)	(9.51)		(1.92)	(7.67)					
4. MCONS	-4.02	-.33	.777		.453				.75	1.82	72-87
	(-.66)	(.-40)	(1.09)		(2.71)						
5. MKAP	-1.90	-.581	.830	.282					.92	1.90	72-87
	(-2.31)	(-2.71)	(4.35)	(1.95)							
6. MINT	-2.92	-.263	.812	.475					.86	2.27	72-87
	(-2.17)	(-1.47)	(3.30)	(3.25)							
Export Functions											
7. XMANU (dem)[1]	.757	-1.797	.781	.540					.77		70-87
	(.41)	(1.92)	(1.97)	(2.99)							
8. XMANU (sup)[1]	-8.890	.789					1.425		.66		70-87
	(-2.14)	(1.96)					(4.94)				
9. XOTM[2]	-10.04	-.037					.933		.66		71-87
	(-2.87)	(.167)					(4.82)				
10. XOTM	-10.41	-0.715[3]					1.190				71-87
	(-4.73)	(1.55)					(5.15)				

1/ Set of instruments: World prices (MUV), home good prices (wi), capacity (C), lag of dependent variables XMANU(-1) and lag of world prices MUV(-1)

2/ Set of instruments: World prices (MUV), home good prices (wi), a trend GOP as a proxy for capacity (C), lag of dependent variable XOTM(-1) and lag of world prices MUV(-1)

3/ For this equation, following the one price law assumption only industrial real wages are significant at .20% level.

Activity Variable = The real GDP has been divided into its trend component - YT - and the difference between the actual figures and the trend component - YC. This, in order to capture better the cyclical measurements of income and imports, both variables are defined in real terms.

Real Coffee Prices = as define above.

Equation 4

MCONS = Imports of consumer goods at constant prices (source: Colombia Division).

Relative Prices = Ratio of U.S. export prices of consumer goods to consumer goods price index of wholesale Colombian prices. (Source: Colombia Division).

Activity Variable = Real private consumption (source: BESD and Colombia Division).

Real Coffee Prices = as defined above.

Equation 5

MINT = Import of intermediate goods and raw materials at constant prices (source: Colombia Division).

Relative Prices = Ratio of U.S. export prices of intermediate goods and raw materials to the same component of Colombian wholesale prices (Source: Colombia Division).

Activity Variable = Real industrial GDP (source: Colombia Division).

Equation 6

MKAP = Import of capital goods at constant prices (source: Colombia Division).

Relative Prices = Ratio of U.S. machinery and equipment prices to the same component of Colombian wholesale prices. (Source: Colombia Division).

Activity Variable = Gross fixed capital formation at constant prices (source: BESD and Colombia Division).

Export Functions

Equation 7

XMANU = Export of manufactured goods at constant dollar prices. (source: TARS Geneva).

Relative Prices = Ratio of price of manufactured exports to the world manufactures unit values.(Source: World Bank and IFS, IMF).

Activity Variable = Activity variable in constant dollars, defined as a weighted average of manufactured imports of principal trade partners, or

$$YW = \sum_{i=1}^{n} w_i \, MMANUF_i; \quad w_i = \frac{XMANUF_i}{XMANUF_T}$$

where $MMANUF_i$ = total imports of manufactures of partner country and $XMANUF_T$ = Colombia's total manufactured exports. In average for 1970-85 the values of w_i are as follows: Venezuela - .23; USA - .225; Ecuador - .078; Panama - .063; Peru - .039; Japan - .036; Germany - .033; Anti. Nether - .022; Italy - .02; Chile - .019; Netherlands - .017; Canada - .016; France - .015; Mexico - .014; Argentina - .012; Trinidad - .011; United Kingdom - .011.

Equation 8

XMANU = Export supply of manufactured good at constant dollar prices (source: Colombia Division).

Relative Prices = Ratio of price of manufactured export goods in dollar terms to home good prices in dollar terms, which are defined as industrial wage index. (Source: World Bank Commodities Division and Colombia Division; Review of Banco de la Republica).

Capacity = Capacity variable, constructed as the fitted value of the following regression:

$$LSCALE = \alpha_0 + \alpha_1 \, LSCALE(-1) + \alpha_2 \, LRPMANPH(-1) + \epsilon$$

where LSCALE is the value added in the manufactures sector at constant prices; and

LRPMANPH is the ratio of the price of manufactured goods to domestic goods.

Equation 9

XOTM = Exports of menores minus manufactured exports as defined by Colombia's central bank. These values have been deflated by the world manufactures unit values (source: Banco de la Republica and IMF).

Relative Prices = Ratio of world manufactures unit values to industrial wages measured in dollar terms. (Source: IMF and Banco de la Republica).

Capacity = Constructed as the fitted value of the following regression:

$$LSCALE - a_0 + a_1 LSCALE(-1) + a_2 LPMAN(-1) + \epsilon$$

where LSCALe is the real GDP and LPMAN is the ratio of domestic prices to manufactured goods prices.

Equation 10

XOTM = Exports of menores minus manufactured exports as defined by Colombia's central bank. These values have been deflated by the world manufactures unit values (source: Banco de la Republica and IMF).

Relative Prices = Industrial real wages denominated in dollars.

Capacity = Constructed as the fitted value of the following regression:

$$LSCALE - a_0 + a_1 LSCALE(-1) + a_2 LPMAN(-1) + \epsilon$$

where LSCALE is the real GDP and LPMAN is the ratio of domestic prices to manufactured goods prices.

C. Decomposition of export earnings growth of manufactured exports.

17. When simulating the contribution of each explanatory variable to export revenues, both equations -demand and supply- have to be considered.

$$x^d = a_0 - a_1(PX - PW) + a_2 YW \qquad (4)$$

$$x^s = b_0 - b_1(PX - PH) + b_2 C \qquad (5)$$

where a_1, a_2, b_1 and b_2 are > 0.

18. Taking differentials it is easy to derive from equations (4) and (5) the following multipliers on the revenue.

$$dR/dPW = \frac{a_1 + a_1 b_1}{a_1 + b_1}$$

$$dR/dYW = \frac{a_2 + b_1 a_2}{a_1 + b_1}$$

$$dR/dPH = \frac{b_1 + a_1 b_1}{a_1 + b_1}$$

$$dR/dC = \frac{-b_2 + a_1 b_2}{a_1 + b_1}$$

$$dR/dX_{t-1} = \frac{a_3 + a_3 b_1}{a_1 + b_1}$$

where $dR = dPX + dX$, when $X^d = X^s$

19. The reduced form equations of export volume and export price are, respectively,

$$X = \frac{1}{(a_1 + b_1)} [(a_0 b_1 + a_1 b_0) + a_1 b_1 R + a_2 b_1 YW + a_1 b_2 C] , \qquad (6)$$

and

$$PX = \frac{a_0}{a_1} + \frac{a_1}{a_1 + b_2} PW + \frac{b_1}{a_1 + b_1} PH - \frac{b_2}{a_1 + b_2} C + \frac{a_2}{a_1 + b_1} YW , \qquad (7)$$

In (6), R is the real exchange rate, defined as the price ratio between foreign tradeables and domestic nontradeables; i.e. R = PW/PH. In the special case of a "small" country when the elasticity of export demand is infinite, the domestic price of tradeables will approach the price of foreign tradeables. Namely, from (7), it is seen when $a_1 = \infty$, PX = PW. The real exchange rate will be the price ratio between domestic tradeables and nontradeables, PX/PH. In general, the real exchange rate con be decomposed into two components: the price ratio between foreign tradeables and domestic tradeables, and the price ratio between domestic tradeables and nontradeables (the domestic terms-of-trade)s: R = PW/PH = (PW/PX) (PX/PH).

The real exchange rate index of the Central Bank corresponds to PW/PX and hence is only a component of the general definition of the real exchange rate. The important point is that the most relevant definition of the real exchange rate for the determination of the trade balance is the general one R (see (6)),and that the real exchange rate defined by the Central Bank only matters for the determination of export demand (see (4)).

20. These multipliers, with the parameters of equations 7 and 8 of table 1, are used to calculate the contribution of each explanatory variable to export growth earnings presented in table 2.

Table 2

Decomposition of Growth in Export Earnings of Manufactured Goods: 1985 - 1987
(Percentages)

Main Factors	1985	1986	1987	Average 85-87
1. Exchange Rate Policy (home goods prices: PH)	30.5	8.5	--	13
2. Capacity Expansion	24.8	4.8	15.1	14.9
3. International Demand	23.0	-10.8	4.6	5.6
4. International Prices	12.4	78.8	75.5	55.5
5. Lagged Effect	9.3	18.7	4.8	11.0
6. Total Effect	100	100	100	100

21. These results suggest that for the period 1985-87 about a third of the export revenue growth was due to changes in variables for which Colombia has some control. The external factors such as international demand and foreign prices - in particular the effect of dollar devaluation in 1986 and 1987 - that explains the growth of international prices in dollar terms, account for about two thirds of the effect. It is interesting to notice how the exchange rate policy has last its effect in 1987 and the paramount importance of international prices growth in 1986-87. This effect of international prices would certainly be much smaller had we used the central Bank's definition of international prices (actual partner countries) instead of world prices as we did in the estimated equations. The central Bank's definition overlooks the potential partners and more importantly the competitor prices or the third country effect that, to a certain extent, is captured in the world manufactures unit values we used in our equations.

22. Of course it would be blunt to jump into the conclusion that central Bank's selection of "international" prices as a comparator is leading to an excessive real devaluation in the last two years. Our results suggest however, in addition to the importance of competitors prices that the PPP does not consider explicitly, that further work might be required to assess properly the adequacy of the crawling peg pace. The

large fluctuation of strong international currencies deserve certainly more attention in the selection of price comparators for defining the "equilibrium exchange rate".

D. Major determinants of Colombian manufactured export revenues: comparative static results.

23. Abstracting from adjustment periods and simulating with long-run elasticities of equations 7 and 8 of table 1, (that is a_1=-3.906; a_2=1.69; b_1=.789 and b_2=1.425) the following multipliers are calculated:

a) The effect of world demand on export revenues: dR = .647 dYW

b) The effect of a devaluation through dH change on export revenues: dR = -.488 dH

c) The effect of capacity change on export revenues: dR = .883 dC

d) The effect of international prices on export revenues: dR = 1.48 dPW

24. The capacity multiplier, though still less than one is higher than world demand and home prices multipliers. This seems to illustrate the importance of previous investment in manufacturing. Also worth mentioning is the size of international prices multiplier 1.48, that translates the effect of changes in world prices when strong currencies like the dollar or the yen widely fluctuate.

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STATISTICAL APPENDIX

PRICES

MEDIUM & LONG-TERM EXTERNAL DEBT

TABLE A.I.1 COLOMBIA: SOCIAL INDICATORS

	1963	1974	1985	1985 Lower mid Income	1985 Upper mid Income
POPULATION					
Total Population (thousand)	18,488	23,502	29,498*		
Urban Population (% of total)	54	61	68	38	64
Population Growth Rate (%)					
Total		2.4	1.9	2.5	2.0
Urban		3.7	3.0	4.2	3.2
Life Expectancy at Birth (yrs.)	56	61	65	59	67
Crude Birth Rate (per thousand)	45	31	27	35	27
Crude Death Rate (per thousand)	14	9	7	10	8
Infant Mortality Rate (per thous.n	6.5	4.0	3.2	4.7	3.5
FOOD, HEALTH AND NUTRITION					
Index of Food Production per capita (1978-81=100)	83	92	97	108	101
Per Capita Supply of:					
Calories (per day)	2174	2325	2588	2507	2964
Proteins (grams per day)	51	49	57	56	76
Population per Physician (thou)	2.5	1.9	..	7.5	1.3
EDUCATION					
Primary Enrollment Rate	84	118	117	104	105
Secondary Enrollment Rate	17	39	50	42	57
Pupil-Teacher Ratio:					
Primary	36	32	30	31	25
Secondary	13	20	20	23	18
Illiteracy Rate	26.6	17.7	12.2		

* - 1986

Sources: World Bank: Social Indicators, Report No. 7271-CO
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El Problema Laboral Colombiano, Informes de la Mision Chenery, 1987.

TABLE A.1.1 COLOMBIA: National Accounts
Aggregate Supply and Demand at Market Prices

	1965	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987p	1988e
						(In Millions of Colombian pesos)						
AGGREGATE SUPPLY	66361	152092	461870	1825427	2288480	2876661	3458514	4337267	5587876	7602062	9983582	13354234
GDP	60488	132768	405108	1579135	1982773	2497298	3054187	3856584	4965883	6787956	8779383	11689819
Imports of goods and nonfactor services	5873	19324	56762	246297	305707	379363	404377	480683	621993	814106	1124119	1664415
AGGREGATE DEMAND	66361	152092	461870	1825427	2288480	2876661	3458514	4337267	5587876	7602062	9983582	13354234
Consumption expenditure	50114	107611	328955	1268287	1644570	2092510	2531500	3147520	3956649	5161487	6692738	9082356
Private sector	45006	95327	292779	1108836	1437698	1819744	2196985	2721889	3425385	4435673	5825993	7835454
Public Administration	5028	12284	36176	159371	206874	272766	334565	425631	531264	665814	866745	1246902
Gross domestic investment	8907	26862	68838	301117	408927	511625	60 566	781466	945549	1221911	1715229	2467933
Fixed capital formation	8068	23919	62129	264894	350848	436091	524847	654459	870466	1264114	1548979	2157784
Change in stocks	839	2943	6709	36223	58079	75534	82719	76941	75083	17797	166250	256149
Exports of goods and nonfactor services	7340	17619	64077	256103	234983	272526	319448	458847	685678	1276664	1495535	1883945
						(In Millions of 1975 Colombian pesos)						
AGGREGATE SUPPLY	263767	361668	461870	626878	643791	657841	655495	669848	689938	718958	755847	792458
GDP	235051	307476	405108	525765	537736	547838	551388	569855	587561	621781	654853	679845
Imports of goods and nonfactor services	28716	53572	56762	101105	106055	114585	104115	99998	93377	97169	100994	113113
AGGREGATE DEMAND	263767	361668	461870	626878	643791	657841	655495	669848	689938	718958	755847	792458
Consumption expenditure	189873	251666	328955	439062	452297	466765	462224	476198	486735	501811	521848	548362
Private sector	168362	224576	292779	384698	395910	401759	403572	415128	422917	436606	453196	469692
Public Administration	21511	27310	36176	54364	56387	59006	58652	61676	63818	64711	68652	78670
Gross domestic investment	37058	63148	68838	103358	117637	123279	120628	113521	102574	107038	114164	123622
Fixed capital formation	30766	53201	62729	88021	93539	96867	97444	98656	93505	100650	100651	107334
Change in stocks	6292	9947	6709	15337	23498	26972	23184	14865	9069	6388	13513	15688
Exports of goods and nonfactor services	36836	46654	64077	84458	74457	78297	72643	80129	91629	110661	119835	121074

p: Preliminary
e: Estimate

Source: National Department of Statistics (DANE): 1965-1987
National Department of Planning (DNP): 1988

TABLE A.1.2 COLOMBIA: National Accounts
Aggregate Supply and Demand at Market Prices

(As % of GDP)

	1965	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987p	1988e
(In Millions of Colombian pesos)												
AGGREGATE SUPPLY	109.7%	114.6%	114.6%	115.6%	115.4%	115.2%	118.2%	112.5%	112.5%	112.6%	112.6%	114.2%
GDP	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.5%	100.0%	100.0%	100.0%	100.0%	100.0%
Imports of goods and nonfactor services	9.7%	14.6%	14.6%	15.6%	15.4%	15.2%	18.2%	12.5%	12.5%	12.6%	12.6%	14.2%
AGGREGATE DEMAND	109.7%	114.6%	114.6%	115.6%	115.4%	115.2%	118.2%	112.5%	112.5%	112.6%	112.6%	114.2%
Consumption expenditure	82.6%	81.1%	81.2%	86.8%	82.9%	83.8%	82.9%	81.6%	79.7%	76.2%	76.2%	77.7%
Private sector	74.5%	71.8%	72.2%	76.2%	72.5%	72.9%	71.9%	70.6%	69.6%	65.8%	66.4%	67.8%
Public Administration	8.3%	9.3%	8.9%	10.1%	10.4%	10.9%	11.0%	11.0%	10.7%	9.8%	9.9%	10.7%
Gross domestic investment	14.7%	20.2%	17.6%	19.1%	20.6%	20.5%	19.9%	19.0%	19.0%	18.6%	19.5%	20.6%
Fixed capital formation	13.3%	18.0%	15.3%	16.8%	17.7%	17.5%	17.2%	17.0%	17.5%	17.7%	17.6%	18.5%
Change in stocks	1.4%	2.2%	1.7%	2.3%	3.0%	3.0%	2.7%	2.0%	1.5%	0.8%	1.9%	2.1%
Exports of goods and nonfactor services	12.1%	18.8%	15.8%	18.2%	11.9%	10.9%	10.5%	11.0%	13.8%	16.8%	17.8%	15.9%
(In Millions of 1975 Colombian pesos)												
AGGREGATE SUPPLY	112.2%	117.4%	114.6%	119.2%	119.7%	120.8%	118.9%	117.5%	115.9%	115.6%	115.4%	116.7%
GDP	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Imports of goods and nonfactor services	12.2%	17.4%	14.6%	19.2%	19.7%	20.8%	18.9%	17.5%	15.9%	15.6%	15.4%	16.7%
AGGREGATE DEMAND	112.2%	117.4%	114.6%	119.2%	119.7%	120.8%	118.9%	117.5%	115.9%	115.6%	115.4%	116.7%
Consumption expenditure	80.6%	81.9%	81.2%	83.5%	84.1%	84.1%	83.8%	83.6%	82.8%	80.6%	79.7%	80.7%
Private sector	71.6%	73.8%	72.3%	73.2%	73.8%	73.8%	73.2%	72.8%	72.8%	70.2%	69.2%	69.1%
Public Administration	9.2%	8.9%	8.9%	10.2%	10.5%	10.6%	10.6%	10.7%	10.9%	10.4%	10.5%	11.6%
Gross domestic investment	15.6%	20.5%	17.6%	19.7%	21.6%	22.5%	21.6%	19.9%	17.5%	17.2%	17.4%	18.1%
Fixed capital formation	13.1%	17.3%	15.5%	16.7%	17.4%	17.6%	17.7%	17.3%	15.9%	16.2%	15.4%	15.5%
Change in stocks	2.7%	3.2%	1.7%	2.9%	4.4%	4.9%	4.2%	2.6%	1.5%	1.6%	2.1%	2.3%
Exports of goods and nonfactor services	15.7%	15.6%	15.6%	16.1%	13.8%	13.4%	13.2%	14.1%	15.6%	17.8%	18.3%	17.8%

p: Preliminary
e: Estimate

Source: National Department of Statistics (DANE)

TABLE A.1.8 COLOMBIA: National Accounts
Aggregate Supply and Demand at Market Prices

	1965	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987p	1988e
						(In Millions of 1988 Colombian pesos)						
AGGREGATE SUPPLY	2889462	3883625	4898112	6587791	6759267	6886687	6891766	7058563	7196489	7682662	7995154	8364868
GDP	2569435	3355145	4422546	5740698	5878856	5926716	6019476	6226768	6414142	6767956	7149662	7416388
Imports of goods and nonfactor services	240027	448480	475566	847161	888411	959971	872289	837795	782347	814166	846158	947689
AGGREGATE DEMAND	2889462	3883625	4898112	6587791	6759267	6886687	6891766	7058563	7196489	7682662	7995154	8364868
Consumption expenditure	1997865	2688192	3395351	4515691	4718899	4811325	4321651	4918541	4998195	5161487	5367962	5636541
Private sector	1775983	2327325	3023135	3956413	4138757	4284262	4218153	4282229	4336595	4435673	4661599	4827183
Public Administration	221882	288868	372216	559268	580140	667673	683498	628312	656666	665814	706363	809439
Gross domestic investment	385974	863593	761964	1695989	1184588	1227848	1238379	1221628	1148988	1221911	1241773	1327784
Fixed capital formation	368399	635893	743273	1658188	1119128	1152191	1165799	1189214	1118672	1284114	1284126	1284677
Change in stocks	17575	27799	18691	42726	65458	75150	64599	41414	25267	17797	37647	43787
Exports of goods and nonfactor services	426423	531839	740788	976282	888789	847415	839735	928394	1059356	1278864	1385419	1399743
						(As % of GDP)						
AGGREGATE SUPPLY	109.3%	113.4%	110.8%	114.8%	115.1%	116.2%	114.5%	113.5%	112.2%	112.8%	111.8%	112.8%
GDP	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Imports of goods and nonfactor services	9.3%	13.4%	10.8%	14.8%	15.1%	16.2%	14.5%	13.5%	12.2%	12.8%	11.8%	12.8%
AGGREGATE DEMAND	109.3%	113.4%	110.8%	114.8%	115.1%	116.2%	114.5%	113.5%	112.2%	112.8%	111.8%	112.8%
Consumption expenditure	77.7%	77.7%	76.8%	78.7%	80.3%	81.2%	80.1%	78.9%	77.8%	75.2%	75.1%	76.0%
Private sector	69.1%	69.4%	68.4%	68.9%	70.4%	70.9%	70.1%	68.8%	67.6%	65.5%	65.2%	65.1%
Public Administration	8.6%	8.4%	8.4%	9.7%	9.9%	10.2%	10.0%	10.1%	10.2%	9.8%	9.9%	10.9%
Gross domestic investment	15.0%	19.6%	17.2%	19.1%	20.2%	20.7%	20.4%	19.6%	17.8%	18.0%	17.4%	17.9%
Fixed capital formation	14.3%	19.0%	16.8%	18.3%	19.1%	19.4%	19.4%	19.0%	17.4%	17.7%	18.0%	17.3%
Change in stocks	0.7%	0.8%	0.4%	0.7%	1.1%	1.3%	1.1%	0.7%	0.4%	0.3%	0.5%	0.6%
Exports of goods and nonfactor services	16.6%	15.9%	16.8%	17.0%	14.7%	14.3%	14.0%	14.9%	16.5%	18.9%	19.4%	18.9%

p: Preliminary
e: Estimate

Source: National Department of Statistics (DANE)

TABLE A.1.4 COLOMBIA: Gross Domestic Product
GDP by Sector, at Market Prices

(In Millions of Colombian pesos)

	1965	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987p	1988e
Agriculture, Fishing & Forestry	16585	33369	98766	305718	391639	463621	571549	671398	843738	1166826	1596659	2288174
Mining	2782	2595	6987	36127	48828	64538	89646	127837	189335	331834	593259	744878
Manufacturing	11471	27433	94686	367468	422615	529922	648794	852716	1079784	1525714	1757516	2338758
coffee	1021	3561	12816	53666	26264	39218	44617	62858	121639	266398	57611	..
other	10450	23872	81270	314468	396351	490764	596177	789858	957945	1245816	1699995	..
Electricity, Gas & Water	571	1462	3867	26716	33235	48666	62932	82784	106839	151327	199923	278914
Construction	1817	5267	13535	74526	102180	128767	169766	219961	342422	446597	522837	675924
Commerce, Restaurant & Hotel	7948	16586	53767	209553	269371	346848	413726	534618	696286	921231	1217919	1688984
Transportation, Storage & Communications	4297	11532	34117	146538	169787	207926	254255	317878	404738	527112	718432	958684
Financial Establishments	9878	18319	56578	216566	286842	364613	439148	569912	688389	766339	965558	1225558
banks, insurance	3273	7796	27532	109326	142784	181439	221125	248918	361842	399478	515319	676882
housing rental	5597	10523	29038	116240	143258	182574	218023	259999	326467	366861	450248	548956
Community, Social & Personal Services	6997	16692	48434	204468	272367	353716	444553	565163	698862	879242	1116631	1448788
personal	2462	5556	17262	75648	100387	129613	164755	201244	238568	311993	398481	466412
domestic	782	1486	2872	7699	9793	11577	13849	14987	17486	19976	23432	32954
government	3813	9650	28386	121461	162127	212626	266749	349812	424678	547273	706768	945892
Minus: Imputed Bank Services	1444	3458	11246	46189	58867	78757	105494	133858	118728	155853	216797	284639
Subtotal Value Added	59726	129978	396779	1585418	1927839	2427694	2979698	3771886	4834727	6579669	8473986	11238512
Import Taxes	762	3090	8329	43717	55434	69784	74239	84698	131156	208687	305447	450307
Gross Domestic Product	60488	132768	405108	1579135	1982773	2497298	3054137	3856584	4965883	6787956	8779383	11688819

p: Preliminary
e: Estimate

Source: National Department of Statistics (DANE)

TABLE A.1.6 COLOMBIA: Gross Domestic Product
GDP by Sector at Market Prices

(In Millions of Colombian 1975 pesos)

	1965	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987p	1988e
Agriculture, Fishing & Forestry	62167	77893	96766	119314	123135	126868	124196	126[illegible]	128456	132792	140745	144328
Mining	7972	8192	6937	6661	7826	7143	8156	9948	13736	28662	29622	30746
Manufacturing	49461	65783	94686	117672	114556	112986	114197	121635	124618	132921	138658	141888
coffee	9262	10662	12816	17565	15283	15645	15666	17111	16986	19178	18356	..
other	40139	55721	81270	100107	99353	97861	98531	103924	107624	112843	120302	..
Electricity, Gas & Water	1515	2253	3887	5210	5981	5554	5648	5938	6111	6478	7063	7489
Construction	7849	10647	13535	17682	18834	19648	22193	23666	25641	26899	25759	26842
Commerce, Restaurant & Hotel	27663	38321	58767	66681	67789	68886	68598	69964	71239	73889	77964	80771
Transportation, Storage & Communications	17299	23853	34117	48944	50945	53586	53181	54486	55844	55569	57621	60841
Financial Establishments	33485	43892	56576	73468	78191	82641	84284	81764	88299	85553	89188	91861
banks, insurance	13881	19457	27582	37911	41358	42629	44766	40875	40954	43119	44331	45439
housing rental	20484	24345	29888	35552	36841	39812	39518	40889	42845	42434	44852	46422
Community, Social & Personal Services	27777	35163	49484	66651	69857	71575	71816	75456	77596	81788	84952	89869
personal	8947	11428	17262	22514	23257	23842	24391	24589	24626	25688	25572	26488
domestic	2167	2566	2972	3297	3389	3484	3554	3625	3696	3772	3847	4849
government	16663	21243	28300	40840	43211	44249	43371	47242	49272	52298	55533	59429
Minus: Imputed Bank Services	5494	8585	11240	14095	16643	18391	19671	15563	14489	14388	15428	15119
Subtotal Value Added	228794	297322	396779	508133	519115	522351	532648	553681	571317	664685	686279	658356
Import Taxes	6257	10174	8329	17632	18621	20485	18748	16774	16244	17696	18574	20989
Gross Domestic Product	235051	307496	405108	525765	537736	542836	551388	569855	587561	621781	654853	679345

p: Preliminary
e: Estimate

Source: National Department of Statistics (DANE)

TABLE A.1.6 COLOMBIA: Gross Domestic Product
Annual GDP Growth Rates by Sector

(At 1975 Market Prices)

	1965-70	1970-75	1975-80	1981	1982	1983	1984	1985	1986	1987p	1988e
Agriculture, Fishing & Forestry	4.6%	4.4%	4.3%	3.2%	-1.9%	2.8%	1.8%	1.6%	3.4%	6.0%	3.0%
Mining	0.5%	-3.3%	-0.8%	5.4%	1.8%	14.2%	22.0%	38.0%	72.3%	20.0%	3.1%
Manufacturing	5.9%	7.4%	4.6%	-2.6%	-1.4%	1.1%	6.0%	3.0%	5.9%	5.0%	2.3%
coffee	1.7%	5.0%	6.5%	-13.4%	-1.0%	4.1%	9.2%	-0.7%	12.9%	-4.3%	-10.0%
other	6.8%	7.8%	4.3%	-0.8%	-1.5%	0.7%	5.5%	3.6%	4.8%	6.6%	5.8%
Electricity, Gas & Water	8.1%	11.1%	6.5%	3.3%	3.2%	1.5%	5.1%	3.1%	6.0%	8.1%	5.8%
Construction	8.6%	4.9%	5.4%	7.1%	4.0%	18.0%	6.4%	8.6%	4.9%	-4.2%	1.1%
Commerce, Restaurant & Hotel	6.7%	7.0%	4.4%	1.7%	1.6%	-0.4%	2.0%	1.8%	3.6%	5.6%	3.6%
Transportation, Storage & Communications	6.6%	7.4%	7.5%	4.1%	5.2%	-0.8%	2.6%	1.0%	1.0%	3.7%	4.2%
Financial Establishments	5.6%	5.2%	5.4%	6.4%	3.1%	4.5%	-3.0%	1.9%	2.7%	4.2%	3.0%
banks, insurance	8.3%	7.2%	6.6%	9.1%	3.1%	5.0%	-8.7%	0.2%	5.3%	2.8%	2.5%
housing rental	3.6%	3.6%	4.1%	3.6%	3.2%	4.0%	3.5%	3.6%	0.2%	5.7%	3.5%
Community, Social & Personal Services	4.8%	6.6%	6.6%	4.8%	2.5%	-0.4%	5.8%	2.8%	5.3%	4.0%	5.8%
personal	5.0%	8.6%	5.5%	3.3%	2.5%	2.3%	0.8%	0.2%	4.1%	-0.3%	3.2%
domestic	2.9%	2.8%	2.8%	2.8%	2.8%	2.0%	2.0%	2.0%	2.0%	2.0%	5.3%
government	5.0%	5.9%	7.6%	5.8%	2.4%	-2.0%	8.9%	4.3%	6.1%	6.2%	7.0%
Minus: Imputed Bank Services	9.3%	5.5%	4.6%	18.1%	10.5%	3.7%	-18.7%	-7.1%	-0.2%	7.3%	-2.0%
Subtotal Value Added	5.4%	5.9%	5.1%	2.2%	0.6%	2.0%	3.8%	3.3%	5.7%	5.3%	3.5%
Import Taxes	10.2%	-3.9%	16.2%	5.6%	10.0%	-8.5%	-10.5%	-3.2%	8.9%	5.0%	13.0%
Gross Domestic Product	5.5%	5.7%	5.4%	2.3%	0.9%	1.6%	3.4%	3.1%	5.8%	5.3%	3.7%

p: Preliminary
e: Estimate

Source: National Department of Statistics (DANE)

TABLE A.1.7 COLOMBIA: Gross Domestic Product
GDP by Sector, at Market Prices

(As % of GDP, 1975 Prices)

	1965	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987p
Agriculture, Fishing & Forestry	26.4%	25.8%	23.9%	22.7%	22.9%	22.3%	22.5%	22.2%	21.9%	21.4%	21.5%
Mining	3.4%	2.7%	1.7%	1.3%	1.3%	1.3%	1.5%	1.7%	2.3%	3.8%	4.6%
Manufacturing	21.0%	21.4%	23.2%	22.4%	21.3%	20.8%	20.7%	21.2%	21.2%	21.2%	21.2%
coffee	3.9%	3.3%	3.2%	3.3%	2.8%	2.8%	2.8%	3.0%	2.9%	3.1%	2.8%
other	17.1%	18.1%	20.1%	19.0%	18.5%	18.0%	17.9%	18.2%	18.3%	18.1%	18.4%
Electricity, Gas & Water	0.6%	0.7%	0.9%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.1%
Construction	3.0%	3.5%	3.3%	3.4%	3.5%	3.6%	4.0%	4.1%	4.4%	4.3%	3.9%
Commerce, Restaurant & Hotel	11.8%	12.5%	13.3%	12.7%	12.6%	12.7%	12.4%	12.3%	12.1%	11.9%	11.9%
Transportation, Storage & Communications	7.4%	7.8%	8.4%	9.3%	9.5%	9.9%	9.6%	9.6%	9.4%	8.9%	8.8%
Financial Establishments	14.2%	14.2%	14.0%	14.0%	14.5%	14.9%	15.3%	14.3%	14.2%	13.8%	13.6%
banks, insurance	5.5%	6.3%	6.8%	7.2%	7.7%	7.9%	8.1%	7.2%	7.0%	6.9%	6.8%
housing rental	8.7%	7.9%	7.2%	6.8%	6.9%	7.0%	7.2%	7.2%	7.2%	6.8%	6.8%
Community, Social & Personal Services	11.8%	11.4%	12.0%	12.7%	13.0%	13.2%	12.9%	13.2%	13.2%	13.1%	13.0%
personal	3.8%	3.7%	4.3%	4.3%	4.3%	4.4%	4.4%	4.3%	4.2%	4.1%	3.9%
domestic	0.9%	0.8%	0.7%	0.6%	0.8%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
government	7.1%	6.9%	7.0%	7.8%	8.0%	8.2%	7.9%	8.3%	8.4%	8.4%	8.5%
Minus: Imputed Bank Services	2.3%	2.8%	2.8%	2.7%	3.1%	3.4%	3.5%	2.7%	2.5%	2.3%	2.4%
Subtotal Value Added	97.3%	96.7%	97.9%	96.6%	96.5%	96.2%	96.6%	97.1%	97.2%	97.2%	97.2%
Import Taxes	2.7%	3.3%	2.1%	3.4%	3.5%	3.8%	3.4%	2.9%	2.8%	2.8%	2.8%
Gross Domestic Product	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

p: Preliminary

Source: National Department of Statistics (DANE)

TABLE A.2.1 COLOMBIA: Fiscal Accounts

Overall Non-Financial Public Sector *

(Billions of Colombian Pesos)

	1982	1983	1984	1985	1986	1987p	1988e
I. TOTAL REVENUE	805.8	1024.5	1280.5	1651.2	2384.8	3228.9	4232.9
i. Tax Revenue	283.4	357.4	443.9	620.0	984.6	1234.6	..
ii. Non-Tax Revenue	521.9	667.1	816.6	1031.2	1399.7	1994.3	..
II. TOTAL EXPENDITURE	984.0	1195.5	1519.9	1861.4	2360.5	3351.4	4539.9
i. Current Expenditure	671.0	836.9	1071.9	1305.2	1588.9	2322.9	3811.2 1/
ii. Transfers	86.4	101.4	129.7	175.7	182.0	234.0	..
iii. Capital Expenditure	206.6	257.2	318.3	380.5	589.6	794.5	728.7
III. DEFICIT or SUPERAVIT (I-II)	-158.7	-171.0	-259.4	-210.2	23.8	-122.5	-307.0
As % of GDP	-6.4	-5.6	-6.7	-4.2	0.4	-1.4	-2.6
i. Central Administration	-101.5	-106.0	-166.6	-131.8	-90.0	-41.5	-160.8
ii. Coffee Fund	..	..	16.0	67.7	213.2	-55.2	-46.8
iii. Ecopetrol	..	..	5.8	-58.6	-16.4	83.8	-18.4
iv. Electricity	..	..	..	..	-81.5	-48.5	-55.7

1/: Includes Transfers
p: Preliminary
e: Estimate
*: Includes Central Administration, decentralized entities and enterprises, Regional and Local governments and Social Security.

Sources: Banco de la Republica, National Department of Planning (DNP)-1988 estimates.

TABLE A.2.2 COLOMBIA: Fiscal Accounts

Central Administration: Effective Operations

(Millions of Colombian Pesos)

	1982	1983	1984	1985	1986	1987p	1988e
I. CURRENT REVENUE	189.7	238.7	307.6	446.5	655.5	935.5	1207.1
1. Tax Revenues	184.8	231.6	292.0	424.5	607.2	838.7	1082.3
a. Direct Taxes	65.9	98.2	118.2	157.9	218.1	311.4	..
b. Indirect Taxes	118.9	133.4	173.8	266.6	389.1	527.3	..
2. Non-Tax Revenues	4.9	7.1	15.6	22.0	48.3	96.8	124.8
II. TOTAL EXPENDITURE	291.2	344.7	474.2	578.3	745.5	977.0	1367.9
1. Current Expediture	211.0	262.9	391.0	437.3	596.6	767.8	1049.3
2. Capital Expediture	80.2	81.8	83.2	141.0	148.9	209.2	318.6
III. DEFICIT or SUPERAVIT (I-II)	-101.5	-106.0	-166.6	-131.8	-90.0	-41.5	-160.8

p: Preliminary
e: Estimate

Sources: Banco de la Republica, National Department of Planning (DNP)-1988 estimates.

TABLE A.8.1 COLOMBIA: Balance of Payments 1980-88

(In Millions of US$)

	1980	1981	1982	1983	1984	1985	1986	1987p	1988e
CURRENT ACCOUNT	184	-1722	-2685	-2826	-2688	-1588	585	75	-352
Trade Balance	18	-1333	-2076	-1817	-484	169	2825	1459	969
Exports, f.o.b.	4296	3897	3282	3147	3623	3762	5434	5252	5816
Coffee	2288	1507	1515	1443	1735	1762	2743	1632	1666
Hydrocarbons	166	84	213	484	445	469	628	1341	953
Coal	16	9	14	17	38	126	261	268	327
Gold	316	239	169	177	245	365	466	384	468
Nickel	0	0	0	46	62	55	48	76	179
Other	1668	1668	1371	1686	1698	1125	1362	1556	1837
Imports, f.o.b.	4283	4736	5358	4464	4627	3673	3469	3793	4481
Consumer Goods	576	665	675	487	387	345	388	488	549
Intermediate Goods	2257	2466	2711	2286	2231	2163	1784	1924	2329
Hydrocarbons	561	728	633	626	456	466	136	161	139
Others	1696	1737	2078	1666	1781	1697	1654	1823	2196
Capital Goods	1456	1665	1972	1691	1469	1165	1245	1381	1523
Services (Net)	-74	-631	-978	-1673	-1988	-2156	-2244	-2385	-2151
Credit	1945	1928	2018	1188	1164	1068	1364	1367	1582
Financial	471	631	498	272	121	186	153	193	245
Nonfinancial	1474	1297	1515	911	988	962	1211	1174	1337
Debit	2019	2559	2991	2856	3087	3224	3668	3752	3733
Financial	627	987	1147	1011	1361	1490	1692	1942	1828
Public	294	466	666	562	728	877	964	1167	1141
Private	333	471	547	449	633	613	728	775	679
Nonfinancial	1392	1622	1844	1845	1726	1734	1916	1810	1913
Transfers (Net)	165	242	169	164	299	461	784	1001	893
CAPITAL ACCOUNT	969	2064	2231	1369	943	2268	1077	-65	983
Long Term	855	1618	1628	1528	1821	2351	2627	185	876
Direct Investment (Net)	61	228	337	514	561	1016	582	287	187
Public Sector (Net)	747	979	953	941	1218	1142	1876	-43	647
Disbursement	999	1247	1285	1342	1768	1794	2607	1202	2342
Amortization	252	268	332	401	550	652	931	1245	1695
Private Sector (Net)	57	408	338	73	47	193	189	-59	42
Short Term	114	454	611	-159	-878	-143	-1550	-250	107
Public Sector (Net)	-93	165	386	202	-198	239	-1025	-138	92
Financial Sector (Net)	355	128	146	16	-298	-18	-535	-68	197
Other (Net)	-158	169	165	-371	-387	-364	16	-52	-182
Errors and Omissions	169	-98	-48	-266	-187	-811	-281	-128	-227
Changes in Net International Reserves (Increase = +)	1242	244	-762	-1728	-1259	278	1465	-28	338
Memo item:									
GDP in US$	24488	25711	25548	26066	27584	32236	34942	36584	39578
Reserve Adjustment	0	0	0	0	-28	38	-54	-98	66

p: Preliminary
e: Estimate

Sources: Banco de la Republica, National Department of Planning (DNP)-1988 estimates.

TABLE A.4.1 COLOMBIA: Employment

Employment by Sector

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987e
EMPLOYMENT (In thousand persons)											
1. TOTAL URBAN	4707	5033	5283	5608	5704	5941	6040	6250	6547	6829	..
Construction	309	321	319	362	384	407	403	401	408	421	457
Government	599	622	643	675	685	702	717	733	730	732	735
Manufacturing	487	501	517	516	501	489	472	464	447	457	471
Informal Sector	1329	1349	1424	1602	1619	1735	1836	1978	2009	2048	..
Rest of Urban Sectors	1983	2240	2380	2453	2515	2608	2612	2674	2953	3171	3226
2. TOTAL AGRICULTURE F&F	2884	2912	2942	2970	2998	3021	3045	3068	3089	3115	..
3. TOTAL ECONOMY	7591	7945	8225	8578	8700	8962	9085	9318	9638	9944	..
EMPLOYMENT (As % of Total)											
1. TOTAL URBAN	62.0	63.3	64.2	65.4	65.6	66.3	66.5	67.1	67.9	68.7	..
Construction	4.1	4.0	3.9	4.2	4.4	4.5	4.4	4.3	4.2	4.2	..
Government	7.9	7.8	7.8	7.9	7.9	7.8	7.9	7.9	7.6	7.4	..
Manufacturing	6.4	6.3	6.3	6.0	5.8	5.5	5.2	5.0	4.6	4.6	..
Informal Sector	17.5	17.0	17.3	18.7	18.6	19.4	20.2	21.2	20.9	20.6	..
Rest of Urban Sectors	26.1	28.2	28.9	28.6	28.9	29.1	28.8	28.7	30.6	31.9	..
2. TOTAL AGRICULTURE F&F	38.0	36.7	35.8	34.6	34.4	33.7	33.5	32.9	32.1	31.3	..
3. TOTAL ECONOMY	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	..
MEMORANDUM											
Public Sector (In thousand persons)	745	772	804	846	855	875	896	916	913	915	943

e - Estimates

Sources: National Department of Statistics (DANE)
CCRP, Area Socio-Economica

TABLE A.4.2 COLOMBIA: Employment Participation and Unemployment Rates 1/

(As % of labor force)

	Participation Rate	Unemployment Rate
1980 - April	54.7	10.8
September	53.5	9.2
1981 - April	52.4	9.2
July	52.0	8.4
September	52.8	8.1
December	..	..
1982 - March	52.3	9.3
June	..	..
September	52.9	9.1
December	..	..
1983 - March	53.1	10.7
June	..	..
September	54.4	11.1
December	..	..
1984 - March	55.3	13.4
June	55.3	13.2
September	56.0	13.1
December	57.5	13.1
1985 - March	56.6	14.0
July	57.7	14.5
September	55.3	14.0
December	56.1	13.0
1986 - April	55.9	14.1
July	56.9	14.7
September	55.9	13.0
December	57.6	12.3
1987 - March	57.8	13.3
June	58.0	12.2
September	56.9	11.3
December	57.8	10.2
1988 - March	58.1	12.8
June	58.9	11.9
September	57.6	10.2
December	58.3	10.3

1/ Barranquilla, Bogota,D.E., Cali, Medellin, Bucamaranga, Manizales and Pasto.

Source: National Department of Statistics (DANE)

TABLE A.4.3 COLOMBIA: Employment
Real and Nominal Wages by Sectors

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988*
REAL WAGES (1980=100)												
Construction	72.5	83.6	92.2	100.0	104.6	107.2	114.1	112.0	104.6	102.5	111.2	109.3
Commerce	..	..	..	100.0	103.2	108.3	108.1	109.1	104.6	113.1	119.0	110.5
Manufacturing	88.3	96.9	100.3	100.0	102.4	106.2	112.2	119.3	116.7	121.4	120.9	120.0
Public Sector	97.9	108.2	99.5	100.0	100.9	103.3	113.8	118.4	106.1	107.2	..	..
Agriculture 1/	93.0	102.3	100.1	100.0	98.3	96.0	98.9	98.2	95.4	100.5	103.8	102.9
Minimum Urban Wage 2/	77.4	86.7	97.0	100.0	100.1	104.9	112.4	115.9	113.4	116.4	114.0	113.0
Informal Sector	74.8	88.7	97.6	100.0	120.4	119.2	110.5	107.0	..	..	..	..
NOMINAL DAILY WAGES (Colombian Pesos)												
Construction	100.3	135.4	185.4	249.0	329.1	419.0	520.4	604.1	692.9	818.7	1052.3	1273.5
Manufacturing	256.6	334.9	428.0	562.3	740.0	999.5	1234.2	1555.3	1913.0	2313.7	..	..
Public Sector	206.9	269.6	321.8	409.5	523.0	663.3	853.4	1049.6	1154.5	1408.5	..	..
Agriculture 1/	87.5	113.5	144.3	182.3	227.3	275.0	332.8	391.8	465.0	593.0	762.8	957.5
Minimum Urban Wage 2/	..	..	115.0	150.0	190.0	247.0	308.7	376.6	451.9	560.4	683.7	854.6

1/ Jornal Clima Frio Sin Alimentacion
2/ Urban Industrial Minimum Wage
* July

Source: National Department of Statistics (DANE)
Reportes de la Mision Chenery for Informal Sector data

TABLE A.4.4 COLOMBIA: Employment
Public Sector Employment

(In thousand persons)

	Total	Central Administration	Public Enterprises	As % of Total Central Admon.	As % of Total Public Enterpr.
1977	745,108	599,623	145,485	80.5%	19.5%
1978	772,218	622,343	149,875	80.6%	19.4%
1979	804,129	642,780	161,349	79.9%	20.1%
1980	846,037	674,687	171,350	79.7%	20.3%
1981	855,000	685,054	169,946	80.1%	19.9%
1982	875,131	701,712	173,419	80.2%	19.8%
1983	895,505	716,699	178,806	80.0%	20.0%
1984	916,372	732,608	183,764	79.9%	20.1%
1985	913,359	730,416	182,943	80.0%	20.0%
1986	915,307	731,761	183,546	79.9%	20.1%
1987e	942,948	734,650	208,298	77.9%	22.1%

e: Estimates

Source: National Department of Statistics (DANE)

TABLE A.4.5 COLOMBIA: Employment
Permanent and Temporary Employment

	PUBLIC SECTOR		PRIVATE SECTOR	
	Permanent	Temporary	Permanent	Temporary
1977	97.6%	2.4%	89.4%	10.6%
1978	97.5%	2.5%	88.7%	11.3%
1979	98.0%	2.0%	89.7%	10.3%
1980	97.5%	2.5%	89.5%	10.5%
1981	96.9%	3.1%	87.9%	12.1%
1982	97.1%	2.9%	87.7%	12.3%
1983	96.7%	3.3%	87.0%	13.0%
1984	96.6%	3.4%	84.8%	15.2%
1985	96.0%	4.0%	84.7%	15.3%
1986	96.0%	4.0%	84.0%	16.0%
1987e	95.8%	4.2%	83.5%	16.5%

e: Estimates

Source: National Department of Statistics (DANE)

TABLE A.4.6 COLOMBIA: Employment Elasticities
Employment Elasticities by Sector

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987e	1980-87*
1. OUTPUT											
Total Economy	8.5%	5.4%	4.1%	2.3%	0.9%	1.6%	3.4%	3.1%	5.1%	5.4%	2.9%
Agriculture	8.1%	4.8%	2.2%	3.2%	-1.9%	2.8%	1.8%	1.6%	3.3%	5.8%	1.9%
Manufacturing	10.0%	6.1%	1.2%	-2.6%	-1.4%	1.1%	6.0%	3.0%	6.6%	5.9%	2.5%
Construction	-2.6%	-0.6%	14.3%	7.1%	4.0%	13.0%	6.4%	8.6%	0.2%	2.1%	7.0%
Government	5.9%	6.5%	10.3%	5.8%	2.4%	-2.0%	8.9%	4.3%	1.7%	4.0%	4.4%
Rest of Urban Sectors	6.4%	4.9%	1.9%	3.2%	2.6%	2.3%	1.0%	0.4%	2.4%	3.5%	2.2%
2. EMPLOYMENT											
Total Economy	4.7%	3.5%	4.3%	1.4%	3.0%	1.4%	2.6%	3.4%	3.2%	..	2.6%
Agriculture	1.0%	1.0%	1.0%	0.9%	0.8%	0.8%	0.8%	0.7%	0.8%	..	0.8%
Manufacturing	2.9%	3.2%	-0.2%	-2.9%	-2.4%	-3.5%	-1.7%	-3.7%	2.2%	3.1%	-1.1%
Construction	3.9%	-0.6%	13.5%	6.1%	6.0%	-1.0%	-0.5%	1.7%	3.2%	8.6%	4.7%
Government	3.8%	3.4%	5.0%	1.5%	2.5%	2.1%	2.2%	-0.4%	0.3%	0.3%	1.7%
Rest of Urban Sectors	13.0%	6.3%	3.1%	2.5%	3.7%	0.2%	2.4%	10.4%	7.4%	1.7%	3.9%
3. ELASTICITIES (=2/1)											
Total Economy	0.6	0.7	1.1	0.6	3.2	0.9	0.8	1.1	0.6	..	0.9
Agriculture	0.1	0.2	0.4	0.3	-0.4	0.3	0.4	0.4	0.3	..	0.4
Manufacturing	0.3	0.5	-0.2	1.1	1.7	-3.0	-0.3	-1.2	0.3	0.5	-0.5
Construction	-1.5	1.1	0.9	0.9	1.5	-0.1	-0.1	0.2	17.0	4.1	0.7
Government	0.7	0.5	0.5	0.3	1.0	-1.1	0.3	-0.1	0.2	0.1	0.4
Rest of Urban Sectors	2.0	1.3	1.6	0.8	1.4	0.1	2.5	26.8	3.1	0.5	1.8

e - Estimates
* - 1980-1986 for those items which no data is available for 1987.

Sources: National Department of Statistics (DANE)
CCRP, Area Socio-Economica

TABLE A.4.7 COLOMBIA: Employment
Labor Force by Sex 1/

	Census			Household Survey 1/	
	1964	1973	1985	Dec. 85	Dec. 86
Labor Force ('000)	5,134	7,134	11,306	8,651	8,850
Men (%)	79.9	73.9	62.1	59.2	58.4
Women (%)	20.1	26.1	37.9	40.8	41.6
Participation Rate	48.2	45.7	52.1	56.0	57.7
Men	64.2	67.6	64.6	72.0	74.1
Women	15.4	22.3	31.6	42.0	44.0

Household Surveys - First Quarter

	1976	1980	1982	1984	1986
Urban Unemployment					
Men	10.1	9.2	7.7	10.8	11.1
Women	13.9	13.4	12.9	18.1	18.9

1/ Barranquilla, Bogota,D.E., Cali, Medellin, Bucamaranga, Manizales and Pasto.

Sources: National Department of Statistics (DANE), Household Surveys
Plan de Economia Social, August 1987.

TABLE A.4.8 COLOMBIA: Employment
Labor Force by Age Groups

(Percentage Distribution)

AGE GROUP	LABOR FORCE			EMPLOYED LABOR FORCE		
	Total	Men	Women	Total	Men	Women
			December 1985			
12-19	11.1	6.0	5.1	8.9	5.0	3.9
20-29	36.9	20.3	16.6	35.1	20.2	14.9
30-49	40.0	24.1	15.9	42.8	26.2	16.6
50-69	11.0	8.1	2.9	12.1	8.8	3.3
70 & up	1.0	0.7	0.3	1.1	0.8	0.3
Total	100.0	59.2	40.8	100.0	61.0	39.0
			December 1986			
12-19	10.6	5.6	5.0	8.8	4.9	3.9
20-29	36.6	19.6	17.0	34.5	19.5	15.0
30-49	40.1	23.9	16.2	42.8	25.9	16.9
50-69	11.8	8.6	3.2	12.9	9.3	3.6
70 & up	0.9	0.6	0.3	1.0	0.7	0.3
Total	100.0	58.3	41.7	100.0	60.3	39.7

Source: National Department of Statistics (DANE), Household Surveys

TABLE A.5.1 COLOMBIA: Financial Sector
Money Supply

(End-of-Period, Millions of Colombian pesos)

	Monetary Base	Money (M1)	Quasi-Money	M2 1/
1980	170,511	216,681	428,332	428,332
1981	207,164	259,709	336,028	595,737
1982	243,758	325,698	417,650	743,348
1983	276,728	406,171	559,109	965,280
1984	327,463	501,115	698,080	1,199,195
1985	412,204	642,163	969,804	1,611,988
1986	528,633	788,470	1,287,714	2,076,184
1987	695,093	1,048,259	1,609,508	2,657,767
1988	881,882	1,318,546	1,960,381	3,278,927

1/ M2 = Money (M1) + Quasi-Money

Source: Banco de la Republica

TABLE A.5.2 COLOMBIA: Financial Sector
Monetary Base

(In Millions of Colombian pesos)

	End - of - Period								
	1980	1981	1982	1983	1984	1985	1986	1987	1988
Monetary Base	170,511	207,164	243,758	276,728	327,463	412,205	528,634	695,094	881,882
Central Bank Assets	235,492	273,961	337,195	632,394	604,162	680,657	1,075,907	1,354,788	1,877,992
Net International Reserves	244,040	288,686	290,866	233,489	192,215	339,438	712,867	858,320	1,181,565
Domestic Credits	(10,354)	(15,812)	43,103	126,305	315,093	335,582	358,436	492,011	706,994
Other net Assets	1,805	1,087	3,221	2,600	(3,146)	5,637	6,604	4,457	(10,567)
Non-Monetary Liabilities	66,704	68,945	96,927	91,442	183,621	276,587	557,896	674,920	1,018,243
Currency in Circulation	1,724	2,178	3,490	5,775	6,921	8,134	10,622	15,225	22,133

Source: Banco de la Republica

TABLE A.5.8 COLOMBIA: Financial Sector

Interest Rates: 90 Days Certificates of Deposit

		Nominal Rate	Effective Nominal Yield	CPI	Effective Real Yield
1980	June	28.17	33.93	27.72	4.86
	September	28.81	34.88	26.49	7.47
	December	30.14	36.81	25.96	8.61
1981	March	29.27	35.53	28.82	5.21
	June	30.04	36.66	27.88	6.87
	September	31.11	38.25	28.33	7.73
	December	31.35	38.62	26.35	9.71
1982	March	31.74	38.45	24.54	11.17
	June	31.51	38.84	24.18	11.81
	September	30.31	37.06	24.52	10.07
	December	29.70	36.16	24.03	9.78
1983	March	28.51	34.43	21.85	10.32
	June	27.49	32.95	20.46	10.37
	September	27.56	33.05	17.42	13.31
	December	27.97	33.65	16.64	14.58
1984	March	28.58	34.52	16.64	15.33
	June	28.56	34.49	15.17	16.78
	September	28.54	34.47	16.51	15.41
	December	28.58	34.53	18.28	13.74
1985	March	28.65	34.63	22.82	9.62
	June	28.86	34.93	27.91	5.49
	September	29.28	35.54	24.40	8.95
	December	29.35	35.64	22.45	10.98
1986	March	25.49	30.13	22.65	6.10
	June	25.75	30.50	13.46	15.02
	September	26.05	30.92	16.79	12.10
	December	26.87	32.07	20.95	9.19
1987	March	25.52	30.18	20.36	8.16
	June	25.87	30.66	24.81	4.69
	September	25.90	30.70	25.01	4.55
	December	28.17	33.92	24.02	7.98
1988	March	28.06	34.64	26.36	6.55
	June	29.85	36.38	30.27	4.69
	September	26.92	32.14	29.00	2.43
	December	26.70	31.80	28.10	2.89

Source: Banco de la Republica

TABLE A.5.4 COLOMBIA: Financial Sector

Annual Interest Rates

		DEPOSITS		LENDING	
		Effective Nominal Yield	Effective Real Yield	Effective Nominal Yield	Effective Real Yield
1986	January	34.82	9.12	43.58	16.21
	February	30.93	5.83	39.96	13.13
	March	30.67	6.54	39.67	13.88
	April	30.41	6.42	39.33	13.70
	May	30.43	12.05	40.09	20.35
	June	30.47	14.99	40.09	23.47
	July	31.10	14.89	40.63	23.24
	August	31.28	13.01	40.74	21.15
	September	31.24	12.37	41.30	20.98
	October	31.37	11.17	41.10	19.40
	November	31.79	10.25	41.62	18.47
	December	31.88	8.99	41.89	17.31
1987	January	31.58	8.68	41.44	16.81
	February	30.33	8.82	40.99	17.72
	March	29.97	7.98	41.03	17.17
	April	29.80	8.35	40.52	17.30
	May	29.94	5.87	41.02	14.90
	June	29.68	3.90	40.63	12.68
	July	30.33	2.91	40.51	10.94
	August	30.56	4.22	40.70	12.32
	September	30.79	4.62	40.86	12.68
	October	31.37	5.28	41.28	13.21
	November	32.31	6.08	42.01	13.85
	December	32.82	7.10	42.23	14.68
1988	January	31.34	6.18	42.18	14.94
	February	32.96	5.42	42.11	12.67
	March	33.86	5.94	42.74	12.96
	April	34.75	4.94	43.41	11.68
	May	35.22	5.28	43.62	11.82
	June	34.85	3.52	43.78	10.37
	July	35.28	3.85	44.16	10.67
	August	35.22	4.30	44.15	11.18

Source: Banco de la Republica

TABLE A.6.1 COLOMBIA: Prices
Consumer Price Index

(Percentual Annual Change)

	Total	Food	Housing	Clothing	Other
1980	25.9	25.9	29.0	18.8	23.5
1981	26.3	28.5	24.9	20.8	24.9
1982	24.0	24.4	23.5	19.6	23.3
1983	16.6	17.2	12.8	13.0	21.4
1984	18.3	19.6	12.9	17.9	24.5
1985	22.5	27.7	15.5	16.3	19.3
1986	20.9	20.7	14.8	19.1	22.9
1987	24.0	27.2	18.8	18.7	24.2
1988	28.1	30.1	23.1	23.8	27.5

Source: National Department of Statistics (DANE)

TABLE A.6.2 COLOMBIA: Prices

Wholesale Price Index

(End-of-Period)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
TOTAL	21.6	29.0	25.4	23.5	24.6	18.0	21.2	23.0	24.4	25.2	29.5
Raw Materials	21.7	25.6	21.4	15.3	21.8	16.3	20.6	22.0	26.6	24.6	23.3
Consumer Goods	19.9	35.6	29.9	31.2	28.3	18.9	20.3	22.0	22.6	25.0	35.1
Capital Goods	27.4	18.7	23.6	24.1	18.7	20.1	28.0	30.9	24.3	27.0	27.3
Imported Goods	21.2	20.6	23.6	22.4	18.5	23.4	35.6	33.1	21.5	27.0	30.9
Exportable Goods	-4.2	32.8	2.1	14.1	16.1	38.1	23.6	64.2	2.4	21.0	28.0
Exportable Goods w/o Coffee	6.0	31.3	27.2	8.6	19.4	29.9	24.7	22.8	14.9	37.2	7.8

Source: Banco de la Republica

TABLE A.7.1 COLOMBIA: Medium & Long-Term External Debt

Total Public & Publicly Guaranteed

(US$ Thousand)

DATE	DEBT OUTSTANDING AT END OF PERIOD		TRANSACTIONS DURING PERIOD					OTHER CHANGES	
					SERVICE PAYMENTS				
	DISBURSED ONLY	INCLUDING UNDISBURSED	COMMIT-MENTS	DISBURSE-MENTS	PRINCIPAL	INTEREST	TOTAL	CANCEL-LATIONS *	ADJUST-MENT **
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
198212	5,990,423	9,762,221	2,367,014	1,232,967	303,861	570,541	874,402	72,693	-
198312	6,874,457	10,604,432	1,400,316	1,355,210	392,631	519,985	912,616	55,838	-109,636
198412	7,732,363	12,429,510	2,804,277	1,741,667	539,827	545,305	1,085,132	20,051	-419,321
198512	9,570,113	15,059,257	2,645,948	1,849,927	646,469	765,850	1,412,319	271,739	902,007
198612	12,184,915	16,790,677	1,744,756	2,586,952	968,600	879,237	1,847,837	203,161	1,150,047
198712	13,828,091	18,204,278	699,631	1,217,199	1,263,914	1,107,949	2,371,863	101,538	2,079,420

** This column shows the amount of arithmetic imbalance in the amount outstanding including undisbursed from one period to the next. The most common causes of imbalances are changes in exchange rates and transfers of debts from one category to another in the table.

Source: Debt and International Finance Division, International Economics Department, the World Bank

TABLE A.7.2 COLOMBIA: Medium & Long-Term External Debt

Multilateral Creditors

(US$ Thousand)

DATE	DEBT OUTSTANDING AT END OF PERIOD		TRANSACTIONS DURING PERIOD					OTHER CHANGES	
					SERVICE PAYMENTS				
	DISBURSED ONLY	INCLUDING UNDISBURSED	COMMIT-MENTS	DISBURSE-MENTS	PRINCIPAL	INTEREST	TOTAL	CANCEL-LATIONS *	ADJUST-MENT **
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
198212	1,880,344	4,046,410	1,015,800	403,759	123,808	129,381	253,189	30,367	-
198312	2,155,051	3,989,476	147,600	445,187	149,887	148,677	298,564	24,265	-20,382
198412	2,333,465	4,852,610	1,321,461	638,880	182,867	158,723	341,590	10,369	-275,091
198512	3,408,492	5,907,518	799,000	829,723	209,652	214,526	424,178	32,079	497,639
198612	4,560,938	7,122,419	935,929	734,826	297,676	327,655	625,331	141,194	714,650
198712	5,773,175	7,915,134	180,300	568,726	354,282	439,802	794,084	31 292	997,989

** This column shows the amount of arithmetic imbalance in the amount outstanding including undisbursed from one period to the next. The most common causes of imbalances are changes in exchange rates and transfers of debts from one category to another in the table.

Source: Debt and International Finance Division, International Economics Department, the World Bank

TABLE A.7.3 COLOMBIA: Medium & Long-Term External Debt

Bilateral Creditors

(US$ Thousand)

DATE	DEBT OUTSTANDING AT END OF PERIOD		TRANSACTIONS DURING PERIOD					OTHER CHANGES	
	DISBURSED ONLY	INCLUDING UNDISBURSED	COMMITMENTS	DISBURSEMENTS	SERVICE PAYMENTS			CANCELLATIONS *	ADJUSTMENT **
					PRINCIPAL	INTEREST	TOTAL		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
198212	1,138,048	1,719,812	500,297	171,870	62,714	38,608	101,322	18,293	-
198312	1,336,156	2,154,743	544,248	290,188	71,794	51,807	123,601	2,851	-24,672
198412	1,457,410	2,627,616	622,013	239,366	77,180	61,328	138,508	4,036	-77,924
198512	1,867,848	2,823,359	150,941	389,992	81,898	132,020	213,918	96,818	223,518
198612	2,241,165	3,157,806	177,791	335,034	120,901	143,353	264,254	2,331	275,790
198712	2,489,399	3,500,759	149,400	187,728	171,530	175,041	346,571	11,058	376,141

** This column shows the amount of arithmetic imbalance in the amount outstanding including undisbursed from one period to the next. The most common causes of imbalances are changes in exchange rates and transfers of debts from one category to another in the table.

Source: Debt and International Finance Division, International Economics Department, the World Bank

TABLE A.7.4 COLOMBIA: Medium & Long-Term External Debt

Private Financial Institutions

(US$ Thousand)

DATE	DEBT OUTSTANDING AT END OF PERIOD		TRANSACTIONS DURING PERIOD					OTHER CHANGES	
					SERVICE PAYMENTS				
	DISBURSED ONLY	INCLUDING UNDISBURSED	COMMIT-MENTS	DISBURSE-MENTS	PRINCIPAL	INTEREST *	TOTAL	CANCEL-LATIONS *	ADJUST-MENT **
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
198212	2,674,758	3,284,892	784,824	563,953	69,431	380,088	449,519	22,290	-
198312	3,065,336	3,711,040	576,786	510,655	107,326	286,888	394,214	11,501	-31,811
198412	3,441,523	4,221,792	752,828	588,566	202,025	293,452	495,477	4,819	-35,232
198512	3,676,318	5,506,814	1,582,646	484,468	287,002	379,008	666,010	137,867	127,245
198612	4,699,472	5,557,348	430,019	1,382,145	425,971	354,132	780,103	59,025	104,917
198712	4,775,481	5,653,573	128,212	267,932	600,504	415,415	1,015,919	44,107	612,624

** This column shows the amount of arithmetic imbalance in the amount outstanding including undisbursed from one period to the next. The most common causes of imbalances are changes in exchange rates and transfers of debts from one category to another in the table.

Source: Debt and International Finance Division, International Economics Department, the World Bank

TABLE A.7.5 COLOMBIA: Medium & Long-Term External Debt

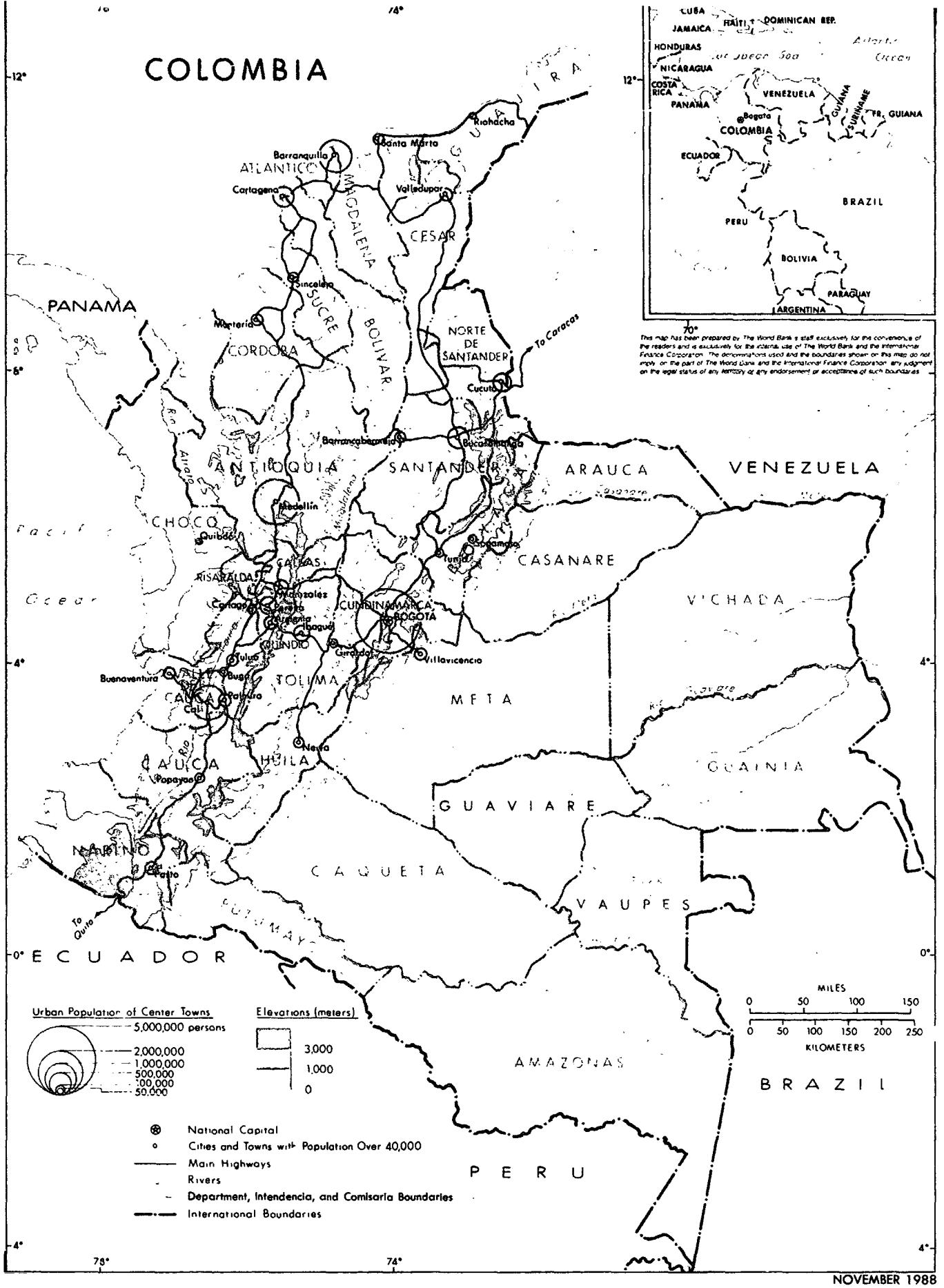
Private Non-Guaranteed

(US$ Thousand)

DATE	OUTSTANDING AT END OF PERIOD		TRANSACTIONS DURING PERIOD				OTHER CHANGES	
	DISBURSED ONLY	INCLUDING UNDISBURSED	COMMIT-MENTS *	DISBURSE-MENTS	SERVICE PAYMENTS			CANCEL-LATIONS *	ADJUST-MENT **
					PRINCIPAL	INTEREST	TOTAL		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
197712	389,000	389,000	-	34,000	49,000	14,000	63,000	-	-
197812	363,000	363,000	-	38,000	64,000	26,000	90,000	-	38,000
197912	473,000	473,000	-	150,000	43,000	22,000	65,000	-	153,000
198012	515,000	515,000	-	55,000	13,000	31,000	44,000	-	55,000
198112	866,000	866,000	-	463,000	112,000	52,000	164,000	-	463,000
198212	1,192,000	1,192,000	-	420,000	94,000	134,000	228,000	-	420,000
198312	1,278,000	1,278,000	-	307,000	221,000	105,000	326,000	-	307,000
198412	1,437,000	1,437,000	-	299,000	142,000	75,000	217,000	-	301,000
198512	1,568,254	1,568,254	-	235,300	104,046	101,621	205,667	-	235,300
198612	1,584,847	1,584,847	-	168,729	152,136	98,811	250,947	-	168,729
198712	1,524,309	1,524,309	-	78,941	139,479	69,380	208,859	-	78,941

** This column shows the amount of arithmetic imbalance in the amount outstanding including undisbursed from one period to the next. The most common causes of imbalances are changes in exchange rates and transfers of debts from one category to another in the table.

Source: Debt and International Finance Division, International Economics Department, the World Bank



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