March 2000

IMF Staff Country Report No. 00/42

South Africa: Selected Issues

This Selected Issues report on South Africa was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with this member country. As such, the views expressed in this document are those of the staff team and do not necessarily reflect the views of the Government of South Africa or the Executive Board of the IMF.

Copies of this report are available to the public from

International Monetary Fund • Publication Services
700 19th Street, N.W. • Washington, D.C. 20431

Telephone: (202) 623-7430 • Telefax: (202) 623-7201
Telex (RCA): 248331 IMF UR
E-mail: publications@imf.org
Internet: http://www.imf.org

Price: $15.00 a copy

International Monetary Fund
Washington, D.C.

Corrected: 2/09/00

INTERNATIONAL MONETARY FUND

SOUTH AFRICA

Selected Issues

Prepared by Jose Fajgenbaum, Michael Nowak, Trevor Alleyne, Arvind Subramanian, Gunnar Jonsson (all AFR), and Michael Sarel (PDR)

Approved by African Department

January 31, 2000

Contents Page

Basic Data 6

I. Recent Economic Developments 7
A. Real Sector 7
B. Developments in Public Finance 13
Developments in 1998/99 13
Developments in 1999/2000 16
Tax changes in 1999/2000 18
C. Monetary Developments and Policies 21
Money and credit 21
Interest rates 23
Monetary policy procedures 24
D. The Balance of Payments 25
The current account 25
The exchange rate and the terms of trade 26
The capital account and the international investment position 27
Capital control liberalization 28

II. Labor Legislation in South Africa, 1995-1998 29
A. Introduction and Summary 29
B. Unemployment in South Africa 30
C. Labor Legislation, 1995-1998 34
The Labor Relations Act 34
The Basic Conditions of Employment Act 36
The Employment Equity Act 38

Contents Page

The Skills Development Act 38
D. The Recommendations of the OECD Jobs Study 40
E. South African Labor Laws and the OECD Jobs Study Recommendations 41
Increasing Flexibility in Wages and Labor Costs 41
Reforming Employment Security Provisions 43
Flexible Working Time Arrangements 44
Reform of Tax and Benefit Systems 46
Active Labor Market Policies and Education and Training Programs 49

III. Trade Policy Developments in South Africa in the 1990s 53
A. Trade Policy Prior to the 1990s 53
B. Trade Policy in the 1990s 54
C. Recent Trade Agreements 56
The EU - South Africa Agreement 56
The SADC Agreement 57
D. Remaining Issues 58

IV. Trade Liberalization and Productivity in South Africa 61
A. Introduction 61
B. Previous Research 61
C. Methodology and Data 63
Data used in time-series analysis 63
Data used in cross-sectional analysis 66
D. Results 67
Time-series evidence 67
Cross-sectional evidence 73
E. Discussion and Conclusions 81

Appendix: Data Description and Sources 87

V. South Africa's Pattern of Trade 89
A. Introduction and Summary 89
B. South Africa's Pattern of Trade 89
The country and commodity composition of trade 90
Factor intensity of South Africa's production and trade 94
C. Explaining the Pattern of Trade: Theory and Empirical Approaches to Testing 97
Factor content approach 97
Commodity composition approach 98
D. Comparison with Other Work 100
E. Results 101

Contents Page

Factor content approach 101
Cross-commodity regression approach 101
F. Conclusion 106

VI. Inflation Targeting as a Monetary Policy Framework in South Africa 108
A. Inflation Targeting: General Features 109
B. The Feasibility of Inflation Targeting in South Africa 110
Institutional aspects 110
Macroeconomic aspects 111
C. Relative Merits and Implications of Inflation Targeting in South Africa 112
D. Specific Concerns in South Africa 114
Inflation targeting in an emerging market economy 115
Inflation targeting and divergent views on monetary policy 116
Inflation targeting and the foreign exchange position of the SARB 116
E. Conclusion and Discussion 117

Appendix I: Short-Run Comovements Among Variables Important for Inflation in South Africa 122

Appendix II: Inflation Targeting and Credibility Issues in Monetary Policy: Theoretical Arguments 128

VII. The Forward Book of the South African Reserve Bank 131
A. Introduction 131
B. Implications of Forward Intervention 133
C. Relative Merits of External Borrowing to Reduce the Forward Book 139
D. Summary and Conclusions 144

Figures

1. Selected Economic Indicators 9
2. Inflation Indicators, 1994-99 14
3. Government Finances, 1990/91-1999/00 17
4. Monetary Indicators and Interest Rates, 1995-99 22
5. Exchange Rate Developments, 1995-99 27
6. Wages, Employment, and Economic Activity, 1988-98 42
7. Time-Series Data 1971-97 65
8. Stability Tests of Error-Correction Model 70
9. Tariff Protection, 1990-98 75
10. TFP Growth, 1990-98 76
11. Conditional TFP Growth and Tariff Changes 79
12. Distribution of Trade by Partner Country, 1989 and 1997 91

Contents Page

13. Factor and Input Ratios, 1989 and 1997 95
14. Rank Correlations Between Net Exports and Factor Ratios, 1997 96
15. Impulse Responses of Shocks to the PPP Relation....125
16. Impulse Responses of Shocks to the Money Demand Relation 126
17. Foreign Exchange Markets, 1994-99 132
18. The NOFP, Net Sales of Bonds and Shares by Nonresidents, and Exchange Rate ...135
19. Interest Spreads and the Net Open Forward Position, 1995-99 137

Boxes

1. The Revision of the National Income Accounts 8
2. Labor Market Projections: Some Simple Illustrative Scenarios 33
3. The Cost of External Borrowing to Reduce the NOFP: A Numeric Example 142
4. Public Debt in Emerging Market Economies 145

Text Tables

1. Consolidated General Government Finances 16
2. Summary of Effects of Tax Proposals, 1999/00 20
3. South Africa: Unemployment Rates, 1997 31
4. Layoffs and Severance Procedures in Selected Countries 45
5. Payroll Taxes and Unemployment Insurance Benefits in Selected Countries....47
6. Trade Regime, 1990 and 1998 55
7. Comparison on South Africa's Trade Regime with Selected Countries 58
8. Antidumping Initiations by Economy Taking Action 59
9. Augmented Dickey-Fuller Tests of Unit Root, 1971-1997 68
10. Cointegration Analysis of TFP, Openness, and Machinery Investment....69
11. The Error Correction Model: TFP Growth and Openness, 1971-97 72
12. Trade Liberalization and TFP Growth....77
13. Trade Liberalization and TFP Growth; Results for Subperiods 80
14. Trade Liberalization and Factor Accumulation 82
15. Trade Patterns, by Commodity Group and Trading Partner Group, 1989....92
16. Trade Patterns, by Commodity Group and Trading Partner Group, 1997....92
17. Factor Intensities, 1997....93
18. Factor Services Embodied in Actual Trade and Consumption, 1989....102
19. Factor Services Embodied in Actual Trade and Consumption, 1997....102
20. OLS Regression Results on the Pattern of Trade, 1997 103
21. Results of Logit Regression Analysis, 1997....104
22. Results of Logit Regression Analysis with Pooled 1989 and 1997 Data 104

Tax Summary....148

Appendix Tables

25. Expenditure on Real GDP, 1994-99 156
26. Gross Fixed Investment and Capital Stock, 1994-98 157
27. Financing of Domestic Investment, 1994-98 158
28. Growth of Disposable Income of Households, 1994-98 159
29. Real Gross Domestic Product at Factor Cost, 1994-99 160
30. Indicators of Mining and Quarrying Activity, 1991-98 161
31. Indicators of Manufacturing Activity, 1994-99 162
32. Nonagricultural Employment, 1990-99 163
33. Remuneration, Labor Productivity, and Unit Labor Costs in the Nonagricultural Sector, 1994-99 164
34. Price Developments, 1994-99 165
35. National Government Finances, 1995/96-1999/2000 166
36. National Government Revenue, 1994/95-1999/00 167
37. National Government Revenue, 1994/95-1999/00 168
38. Economic Classification of National plus Provincial Government Expenditure, 1994/95-1999/00 169
39. Functional Classification of National plus Provincial Government Expenditure, 1994/95-1999/00, in Rand 170
40. Functional Classification of National plus Provincial Government Expenditure, 1994/95-1999/00, in percent of GDP 171
41. Financing of the National Government Budget, 1994/95-1998/99 172
42. National Government Debt, 1994/95-1998/99 173
43. Growth Rates of Monetary Aggregates, 1988-99 174
44. Monetary Survey, 1995-99 175
45. Interest Rate Developments, 1993-99 176
46. Changes in Bank Credit, 1992-99 177
47. Summary of Balance of Payments and External Position, 1995-99 178
48. Quarterly Balance of Payments, 1997-99 179
49. Quarterly Current Account Data, 1997-99 180
50. Quarterly Current Account Data, 1997-99 181
51. Volume and Unit Value of Exports and Imports, 1997-99 182
52. Foreign Assets, 1994-98 183
53. Foreign Liabilities, 1994-98 184
54. Foreign Debt and Reserves, 1994-99 185
55. Exchange Rates and Gold Price Developments, 1994-99 186

South Africa: Basic Data

Area	1.219 million square kilometers
Population (1997)	41.2 million
Population growth rate	1.7 percent
Employment (1997)	8.70 million
IMF Position (December 31, 1999)	
Quota	SDR 1,868.5 million
Fund holdings of rand	SDR 1,868.4 million
Holdings of SDRs	SDR 209.6 million
Exchange rate	US$ 1 = R 6.15

	1995	1996	1997	1998	1999 Proj.
National accounts	(Annual percentage change)				
Real GDP	3.1	4.2	2.5	0.6	1.2
Real GDP per capita	0.6	1.8	0.4	-1.4	-0.9
Nominal GDP (billions of rand)	548.1	618.4	683.7	740.6	799.0
Nominal GDP per capita (U.S. dollars)	3,809.3	3,546.8	3,580.4	3,164.0	3,026.9
External sector					
Merchandise exports, f.o.b. 1/	14.2	0.7	3.1	-6.7	-3.1
Merchandise imports, f.o.b. 1/	25.3	0.7	4.6	-5.6	-10.5
Real exports of goods and services	10.4	9.3	5.5	2.3	0.8
Real imports of goods and services	16.9	8.7	5.4	2.1	-7.1
Terms of trade	-1.5	1.4	-1.2	0.2	-2.2
Nominal effective exchange rate 2/	-7.4	-12.1	1.0	-13.8	-12.0
Real effective exchange rate 2/	-2.9	-7.8	7.4	-9.3	-7.0
Money, interest rates, and prices					
Broad money (M3) 3/	15.2	13.6	17.2	14.6	8.0
Bank rate/repurchase rate (period end, in percent)	15.0	17.0	16.0	19.3	12.0
GDP deflator	10.3	8.3	7.8	7.6	6.6
CPI (annual average) 3/	8.6	7.4	8.6	6.9	6.5
Investment and saving	(In percent of GDP)				
Investment (incl. inventories)	18.0	17.1	16.1	15.9	15.3
Gross national saving	16.5	15.8	14.5	14.3	14.9
Foreign saving	1.5	1.3	1.5	1.6	0.3
Government finances 4/					
National government					
Revenue, including grants	22.3	23.1	23.4	24.4	23.8
Expenditure and net lending	27.4	27.7	27.3	27.0	26.6
Overall balance 5/	-5.0	-4.5	-3.9	-2.6	-2.8
National government debt	49.5	49.0	48.1	50.0	48.7
General government balance	-4.9	-5.1	-5.0	-2.4	-2.9
PSBR of the nonfinancial public sector 6/	4.6	5.5	4.4	4.8	3.2
External sector	(In billions of U.S. dollars)				
Current account balance (US$bn.)	-2.2	-1.9	-2.3	-2.1	-0.4
Foreign currency-denominated debt (US$bn.)	25.4	26.1	25.2	24.7	26.5
Of which: short-term (US$ bn.)	10.3	12.0	13.1	14.2	15.2
Total external debt/exports (in percent) 7/	101.8	97.8	107.3	113.0	125.2
Interest payments on debt	1.7	1.8	2.0	2.2	2.4
Overall balance of payments	1.6	-0.8	1.6	-0.5	1.9
Net official reserves (US$ billion) 3/	4.3	2.2	3.8	2.3	4.0
(in months of total imports)	1.5	0.8	1.3	0.8	1.6
(in percent of short-term foreign currency debt)	41.8	18.4	29.3	16.2	26.5
Net open forward position of SARB (US$ bn.) 3/	14.0	22.2	16.3	22.5	13.0

Sources: South African Reserve Bank; IMF, *International Financial Statistics*; and staff estimates and projections.

1/ In U.S. dollars, annual percent change.

2/ Annual average, INS definition; 1999 values refer to the average of the first nine months of the year.

3/ Actual data for 1999

4/ Fiscal year beginning April 1.

5/ Excluding sales of state assets and the profit/losses from forward market operations of the Reserve Bank.

6/ Excluding sales of state assets but including the profit/losses from forward market operations of the Reserve Bank

7/ Excluding rand-demoninated debt held by nonresidents, end of period.

I. Recent Economic Developments[1]

A. Real Sector

1. *Economic activity has progressively strengthened since the fourth quarter of 1998, while monetary conditions gradually have eased and business and consumer confidence have strengthened. Nevertheless, labor market conditions have deteriorated, with a continuation of the trend decline in formal employment. Inflation pressures have been contained, despite the effects of the depreciation of the rand and higher world fuel prices.*

2. Real GDP growth slowed from 1.7 percent in 1997 to 0.6 percent in 1998 (Figure 1).[2] A slowdown in economic activity that had been underway since mid-1997 was exacerbated in the second half of 1998 by the turbulence in financial and exchange markets during the second and third quarters and a sharp, policy-induced increase in interest rates as part of an effort to restore calm to the markets. As a consequence, the interest-sensitive sectors of the economy suffered the most; real durable consumption declined by 6 percent, real private sector fixed investment fell by 3 percent, and there was a reduction of inventories equivalent to 0.5 percent of GDP. Real gross domestic expenditure would have been considerably weaker but for the substantial investment programs undertaken by the public enterprises, especially South African Airways and the telecommunications company, Telkom. As a group, fixed investment spending by the public enterprises rose 51 percent in 1998, which more than accounted for the entire growth in real gross domestic expenditure.

3. Improved market conditions since the fourth quarter of 1998 allowed the authorities to substantially reduce interest rates over the course of 1999. These factors contributed to a progressive strengthening of economic activity during the year, and the expansion in real GDP reached 3.1 percent (on a seasonally adjusted annualized basis) in the third quarter of 1999. The recovery in economic activity was spurred mainly by net exports, which contributed 1.6 percentage points of the overall growth in real GDP for the first three quarters of the year, and thus more than offset the negative contributions of private fixed investment (including public enterprises) and government consumption and investment. The strong performance of net exports reflected the negative effect on the demand for imports of the cyclically weak domestic demand, the depreciation of the rand, and the completion of the (import-intensive) capital expenditure program of the public enterprises.

4. Private consumption grew slightly less than real GDP on account of the weak demand for durables, but nevertheless strengthened during the year, helped by rising consumer

---

[1] Prepared by Trevor Alleyne, Gunnar Jonsson, and Michael Sarel.

[2] There was a substantial revision in the national income accounts for 1993-98. See Box 1 for details.

Box 1. The Revision of the National Income Accounts

South Africa's national accounts underwent a major revision in 1999: the System of National Accounts 1993 (1993 SNA) was introduced, the base year for the national accounts estimates at constant prices was changed from 1990 to 1995, new areas of economic activity were uncovered, and information from new data sources were incorporated.

The level of the revised GDP at current prices is approximately 11 to 14 percent higher than the previous GDP estimates for the period 1993 to 1998, as presented in the table below. Approximately R12 billion (2.5% of the previous GDP) of the revision is the result of definitional changes in the 1993 SNA. The rest is due to new activity and new data sources that have resulted in improved estimates of existing activity, notably research reports on selected aspects of production by universities and parastatals, the SARB and Statistics South Africa. Because the revision to investment was relatively less than that of GDP (correspondingly, private consumption was revised relatively more than overall GDP), the revised average ratio of domestic investment to GDP for the 1993-97 period is about 0.7 percentage points of GDP lower. Also, because there was no revision to the public accounts, the fiscal numbers in terms of GDP, were also lowered.

Gross domestic product at current prices according to the previous and revised estimates

	1993	1994	1995	1996	1997	1998
Previous GDP (R billion)	382	431	485	543	595	649
Revised GDP(R billion)	426	482	548	615	680	738
Difference (R billion)	44	51	63	72	85	89
Difference (percentage)	11.5	11.8	13.5	13.1	14.3	13.7

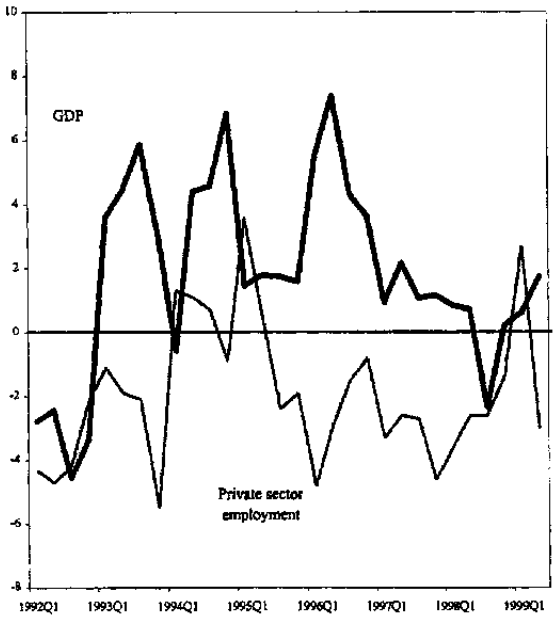
The revised average annual real GDP growth rate for 1994-1998 is 2.7%, ½ percentage point higher than the previous estimate.

Annual growth in the gross domestic product at constant prices according to the previous and revised estimates

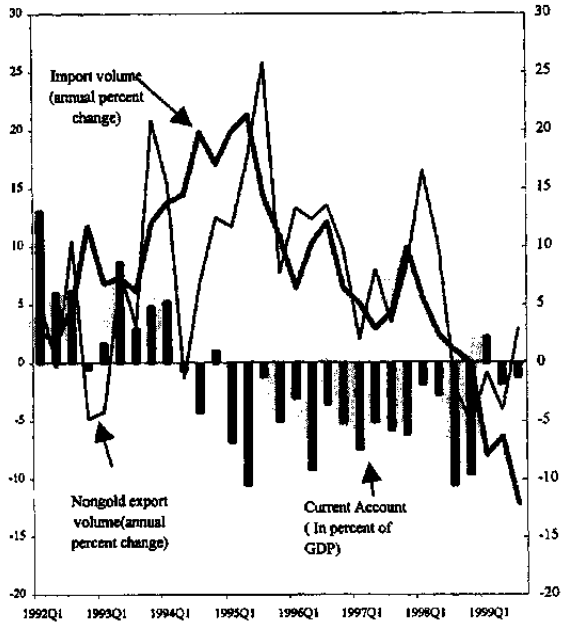
	1994	1995	1996	1997	1998	1993 - 1998
Previous annual percentage growth in GDP (1990 prices)	2.7	3.4	3.2	1.7	0.1	2.2
Revised annual percentage growth in GDP (1995 prices)	3.2	3.1	4.2	2.5	0.5	2.7

Figure1. South Africa: Selected Economic Indicators

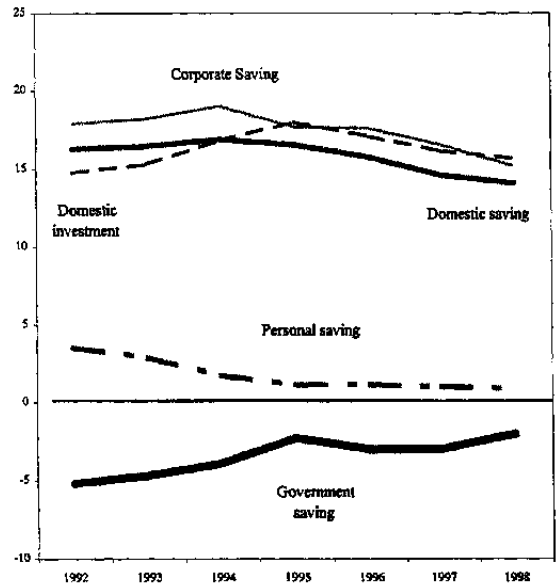
GDP and Employment, 1992:Q1-1999:Q3
(Annualized quarterly growth rates)



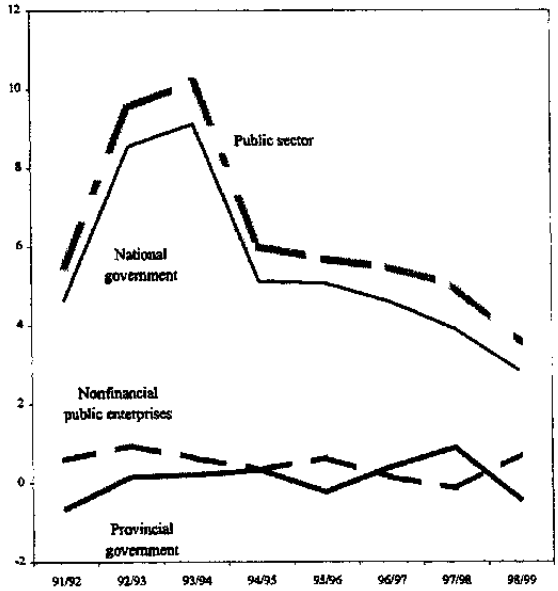
External Indicators, 1992:Q1-1999:Q3



Gross Investment and Saving, 1992-98
(In percent of GDP)



Budget Deficits,
1991/92-1998/99 1/
(Deficits as a percent of GDP)



Source: South African Reserve Bank; and Ministry of Finance

1/ Fiscal year beginning April 1.

confidence, the decline in bank lending rates, and an improvement in household balance sheets following the demutualization of Old Mutual in May 1999. Real government consumption declined in 1998 and again during 1999, as the fiscal consolidation effort spread to the provinces and, to a lesser extent, to the local authorities. Business confidence indices were up substantially in the second half of the year and the growth in real private fixed investment turned positive in the third quarter of 1999 in all sectors except for mining and construction. Inventories, which had declined since the beginning of 1997, also began to grow in 1999 and contributed about half of a percentage point to the growth rate of real GDP in the first three quarters of 1999. The build up of industrial and commercial inventories still has considerable room; as a percent of nonagricultural GDP they were around 13 percent in the third quarter of 1999, compared with a recent peak of 17 percent three years earlier.

5. On the output side, in 1998, robust growth in the transport and communication sector and the financial services sector, of just over 8 percent and 3 percent, respectively, offset declines in all other sectors, such as manufacturing (3 percent), agriculture (2 percent), and mining (about 1 percent). Manufacturing output had been declining since the second half of 1997, and the situation worsened in 1998 as a result of slowdowns in both domestic and external demand and a sharp increase in workdays lost to on account of strikes. In agriculture, production was down mainly on account of lower production of field crops, while mining continued to suffer from weak global demand for commodities.

6. The subsequent recovery in output was broadbased, with all sectors, except for mining and construction, showing positive growth since the second quarter of 1999. The transport and communication, financial services, and agriculture sectors were particularly strong, and, for the first three quarters of the year, were up 7.5 percent, 2.8 percent and 0.7 percent, respectively, compared with the corresponding period in 1998. As was the case in 1998, the robust growth of the transport and communication sector was driven by the extension of telephone lines to previously underserviced areas, and the growth of cellular networks and internet activity. Growth in the financial services sector reflected a rebound in the real estate market, while in agriculture, growth was driven mainly by increased output in the livestock and horticultural areas. Despite the rebound in global gold prices in the second half of 1999, gold output continued to decline. Mining output was further hurt by a decline in coal production, where high domestic cost structures and global oversupply resulted in a loss of global market share.

7. Gross national saving declined slightly to just over 14 percent of GDP in 1998, its lowest level in recent history, despite a decline in dissaving of the general government of about 1 percentage point of GDP to under 2 percent in 1998. As gross investment was also relatively unchanged at 16 percent of GDP, the recourse to foreign saving was largely unchanged at under 2 percent of GDP from 1997 to 1998. The small decline in gross national saving was attributable mainly to corporate saving, which dropped by 1 percentage point of GDP to just over 15 percent of GDP. The net operating surplus of the corporate sector was flat in nominal terms, as profits were squeezed by the slowdown in economic activity. Although nominal net interest payments declined for the first time since 1994, this was not

enough to offset significant increases in dividend and tax payments. Household saving fell from 1 percent of GDP in 1997 to half of a percent in 1998, mainly as a result of the negative effect on disposable incomes of the large increase in mortgage and consumer interest rates in the context of a high level of household debt. Although continuing fiscal consolidation at the national level contributed to the decline in government dissaving, there was a substantial turnaround in the finances of the provinces, from a deficit of 0.9 percent of GDP in 1997/98 to a surplus of 0.4 percent in 1998/99, which proved to be the main factor in the improved saving performance of the general government.

8. Labor market conditions continued to deteriorate in 1998 and 1999. In 1998, employment in the formal nonagricultural sector declined by almost 200,000 persons, or almost 4 percent; and was down a further 2 percent for the year ended September 1999.[3] As such, it is likely that the overall unemployment rate increased from the 37 percent level reached in October 1997.[4] In the private sector, two distinct trends have been apparent during the 1990s. In the traded goods sector (mining and manufacturing), employment has been on a downward trend since 1991, and there has been a substantial substitution of labor for capital, reflecting a marked increase in the price of labor relative to capital. In addition, there has been a marked trend toward the "informalization" of the work force. According to the October Household Survey, overall employment fell by 9 percent between 1995 and 1997, with a decline of 22 percent in formal sector employment partly offset by an increase of 22 percent in informal sector employment.

9. In 1998, according to Statistics South Africa, formal employment in mining and manufacturing declined by 16 percent and 4 percent, respectively, while for the year ended September 1999, employment in these two sectors was down a further 9 percent and 3 percent, respectively. Employment in the financial services sector also declined in 1998 for the first time in the decade—mainly because of the adverse effects of the large rise in interest rates on the real estate sector; this weakness continued into 1999. On the other hand, formal employment has generally been increasing in the other service sectors; in the trade sectors (including wholesale and retail trade, and hotel and accommodation) employment grew by over 4 percent in 1998 and over 8 percent in the year ended September 1999.

---

[3] It appears that there is a discontinuity between pre-1998 and subsequent data. Beginning in the first quarter of 1998, basic data originate from the Survey of Total Employment and Earnings by Statistics South Africa, which replaced 17 discrete monthly or quarterly business surveys.

[4] Data from the 1997 October Household Survey, which takes place annually and provides labor market data on both the formal and informal sectors.

10. Employment in the general government declined by 1.1 percent in 1998 and by 1.7 percent in the year ended September 1999, as governments attempted to reduce their payrolls in an effort to lower fiscal imbalances and reallocate resources to nonwage spending priorities. In 1998, the decline took place mostly in the extra-budgetary institutions (e.g., universities and technikons), where employment fell by almost 10 percent. In the national government and local authorities, employment declined by 1 percent and 3 percent, respectively, while in the provinces, it increased by under 1 percent. Since the beginning of the 1999/2000 fiscal year, employment levels have fallen in all levels of general government, except for the extrabudgetary authorities.

11. Remuneration per worker increased by 15 percent in 1998, up from almost 11 percent in 1997.[5] These numbers (reported by Statistics South Africa) far exceed the estimates of wage growth of other, albeit non-scientific surveys, which indicate a downward trend in the growth rate of nominal wages, consistent with the decline in inflation.[6] Growth in nominal remuneration per worker was highest in the private sector (17 percent in 1998 compared with 10 percent in 1997), while the growth was more moderate in the public sector (12 percent in 1998 compared with 11 percent in 1997). In the first half of 1999, these rates fell significantly; in the private sector, nominal remuneration per worker grew at an annualized rate of 8 percent, compared with 11 percent in the second half of 1998, while in the public sector, it grew by 3 percent in the first half of 1999, compared with 5 percent in the second half of 1998.

12. Unit labor costs in the formal nonagricultural sector rose by 10 percent in 1998, compared with 6 percent a year earlier, reflecting the large increase in remuneration per worker and a more modest 5 percent increase in labor productivity. The increase in unit labor costs was significantly greater than the almost 8 percent increase in the nonagricultural GDP deflator, thereby accounting for the flat net operating surplus of the corporate sector mentioned above. In 1999, the annual rate of growth of unit labor costs moderated, falling to 5 percent in the second quarter. At the same time, output prices rose by over 7 percent, pointing to a possible rebound in corporate operating surpluses.

13. The annual inflation rate, as measured by the increase in the consumer price index, rose from 6 percent at December 1997 to 9 percent in December 1998, before falling to 2 percent in December 1999 (Figure 2). The increase during 1998 reflected the large increase

---

[5] The growth in remuneration per worker should not necessarily be interpreted as reflecting the growth rate of wages. The trends in these two series would be different to the extent that full-time and part-time employment differed (as was the case in this period) and the pattern of overtime pay varied over time.

[6] For example, Andrew Levy and Associates, a South African consulting firm specializing in labor market and industrial relations issues, estimates that wage settlements in 1998 were below 9 percent in 1998, about 1 percent point lower than in 1997.

in interest rates, which in turn sparked a marked rise in the mortgage cost component of the CPI, but also to the pass-through of the depreciation of rand (see below) and the rise in unit labor costs. In 1999, inflation fell to its lowest level in over 30 years, despite a big increase in the price of petroleum products, as the previous year's increase in interest rates was completely unwound. Core inflation, which excludes the effect of changes in mortgage costs, fell to around 8 percent in late 1997 and has remained at about that level since then. Producer price inflation was essentially unchanged at 4 percent in 1998, reflecting the weak pace of economic activity. Producer price inflation rose to 7.4 percent in 1999, spurred mainly by the increase in prices of petroleum products.

B. Developments in Public Finance

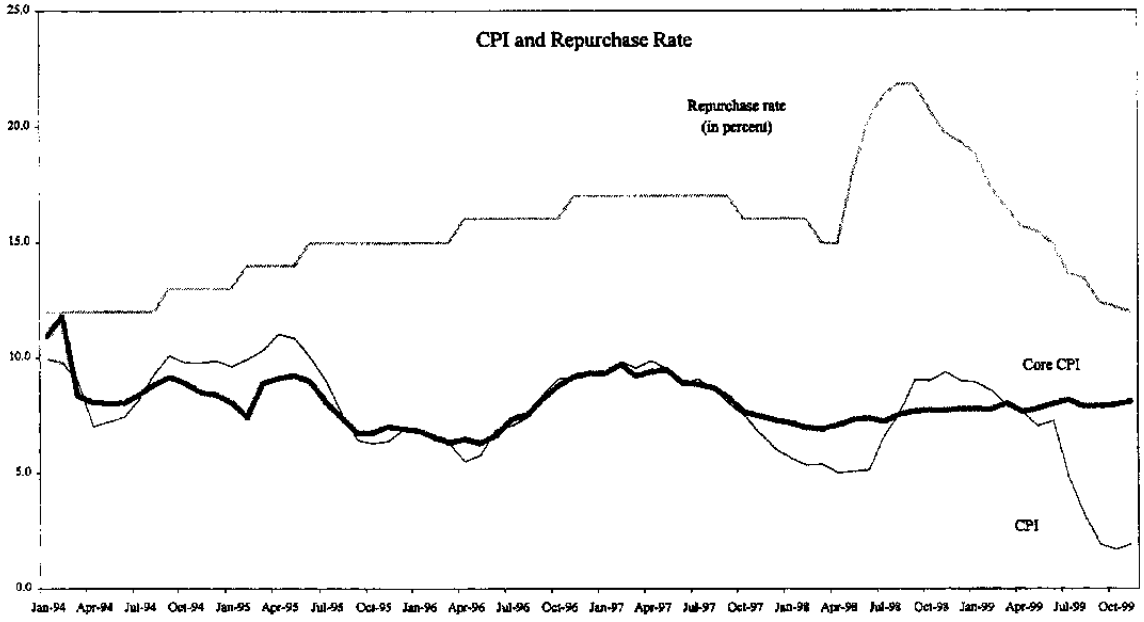
14. *There was a substantial improvement in the fiscal performance of the overall general government in 1998/99 (April to March), as the deficit of the national government was reduced considerably and the finances of the provinces showed a remarkable turnaround. The 1999/2000 Budget aimed to consolidate the improvement in the national government's financial position and to reduce the corporate and personal tax burden. So far in 1999/2000, fiscal performance has been better than originally budgeted.*

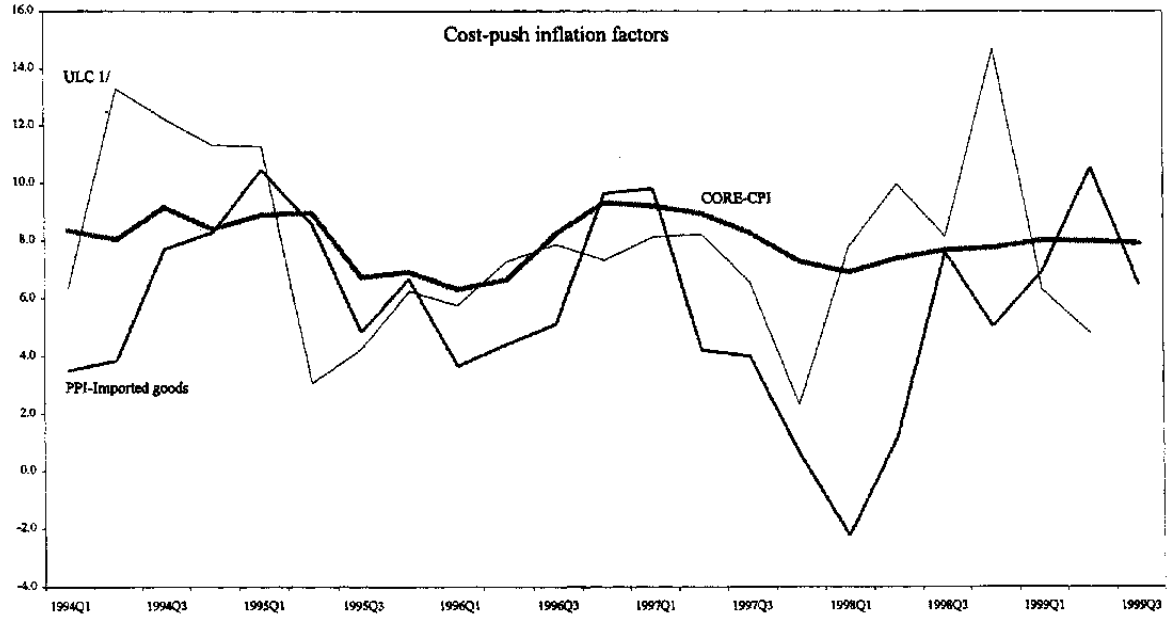
Developments in 1998/99

15. The fiscal deficit for the national government was 2.6 percent of GDP in 1998/99, down from 3.9 percent in 1997/98, and compared with a budget projection of 3.1 percent of GDP, as a result of larger-than-expected revenue collections.[7] Revenue grew by almost 13 percent to 24.4 percent of GDP, compared with a growth rate of 9 percent envisaged in the budget; personal income taxes were 9 percent higher than the budget estimate and accounted for over 90 percent of the unanticipated revenue. The strength of personal income tax collection was due to efficiency gains in tax administration and the broadening of the tax base. The other revenue surprise was in corporate tax receipts from the mining companies; as a result of the depreciation of the rand and cost savings associated with the closure of mines, these receipts rose by almost 60 percent and accounted for about 10 percent of the unanticipated rise in revenue. However, overall corporate income tax receipts were just 2 percent greater than projected, reflecting lower revenue from the nonmining companies caused by the weaker economic activity. This factor also resulted in lower-than-projected indirect tax collections. However, value-added taxes were slightly greater than projected, and

[7] Privatization receipts and revenue from the sale of oil stocks (0.4 percent of GDP in 1998/99) and losses from foreign exchange operations and valuation changes of the Reserve Bank's gold reserves (1.9 percent of GDP) are excluded from the budget deficit. The latter is included in the calculations for the consolidated public sector borrowing requirement (see below).

Figure 2. South Africa: Inflation Indicators, 1994-99
(Annual percent change)





Source: Reserve Bank Quarterly Bulletin and Statistics South Africa
1/ Unit Labor Cost

the authorities attributed this to more effective tax administration at border posts to curtail fraud.

16. Expenditure in 1998/99 was 27 percent of GDP, which was slightly higher than projected at the time of the budget, but still 0.3 percentage points of GDP lower than in 1997/98. The unanticipated pressure on spending came mainly from interest payments and additional transfers to provinces, as the wage bill and other current spending was in line with the budget.

17. As mentioned above, the fiscal position of the provincial governments moved from a deficit of 0.9 percent of GDP in 1997/98 to a surplus of 0.4 percent in 1998/99. Overall, expenditure increased by under 2 percent in nominal terms from 1997/98, but declined in terms of GDP, from 13.5 percent to 12.7 percent. A financial management improvement program—coordinated at the national government level—was established to monitor expenditure in each province on a monthly basis, appoint qualified personnel, train financial managers and improve reporting and oversight procedures. While transfers from the national government were raised to better cover certain outlays, provinces improved their management and control of expenditure and thus were able to curb unwanted expenditure. Several provinces also launched anti-fraud units.

18. In the Eastern Cape and Kwazulu-Natal, where the fiscal imbalances in 1997/98 were particularly serious (with deficits of 0.2 percent of GDP and 0.3 percent of GDP, respectively), the national government intervened directly in the fiscal management of these provinces.[8] In exchange for additional funding at the end of 1997/98 (which was needed to partially repay various creditors, including bank overdrafts), the government imposed certain administrative reforms (e.g., procurement procedures, personnel management) and steps to contain expenditure. Both provinces subsequently recorded surpluses in 1998/99 and have programmed further surpluses in the next few years to allow them to pay off their remaining debts.

19. The fiscal deficit of the local governments was unchanged in 1998/99 at 0.1 percent of GDP.[9] Although continuing to face financial challenges, the authorities report that local governments are beginning to stabilize their financial positions through improved expenditure management, greater efforts to collect own revenue, and programs initiated by

---

[8] Under Section 100(1) of the Constitution, the national government is authorized to intervene in provinces in cases where a province cannot or does not fulfil an executive obligation in terms of either legislation or the Constitution. The Constitution bars provinces from incurring debt unless authorized by the Minister of Finance.

[9] Whereas provinces rely on the transfers from the national budget for 96 percent of their revenue, local authorities are largely self-sufficient, raising most of their own revenue from property and other local taxes, levies, and user charges.

the national and provincial governments. The provincial government officials responsible for local government have used the powers vested in them in terms of the Local Government Transition Act (1993) to instruct municipalities facing financial difficulties to take corrective action. One aspect of such action has been the establishment of the Management Support Program, which aims to build capacity and financial management systems in the municipalities to help them restore their financial viability. The national government has backed this project by providing funding.

20. Led by the strong improvement in the finances of the national government and provincial governments, the deficit of the consolidated general government fell from 5 percent of GDP in 1997/98 to 2.4 percent in 1998/99, with spending falling to its lowest level in 15 years as a percent of GDP (Figure 3, and Table 1). However, the overall borrowing requirement of the nonfinancial public sector rose from 4.4 percent to 4.8 percent, mainly because of the large losses incurred by the Reserve Bank in its forward market operations and an increase in the borrowing requirement of the nonfinancial public enterprises. The latter shifted from –0.3 percent of GDP in 1997/98 to 0.5 percent in 1998/99 because of the substantial increase in capital expenditures by the airline and telecommunications companies.

Table 1. Consolidated General Government Finances
(In percent of GDP)

	1994/95	1995/96	1996/97	1997/98	1998/99
Total revenue and grants	28.0	27.6	28.1	28.2	29.2
Total expenditure and net lending	33.6	32.5	33.2	33.1	31.5
Current expenditure	30.4	29.4	30.8	30.1	28.9
Capital spending	3.2	3.0	2.4	3.0	2.6
Overall balance	-5.6	-4.9	-5.1	-5.0	-2.4
National Government	-5.1	-5.0	-4.5	-3.9	-2.6
Provinces	-0.3	0.2	-0.4	-0.9	0.4
Local authorities	-0.1	-0.1	-0.1	-0.1	-0.1
Other 1/	-0.1	0.0	-0.1	-0.1	-0.1

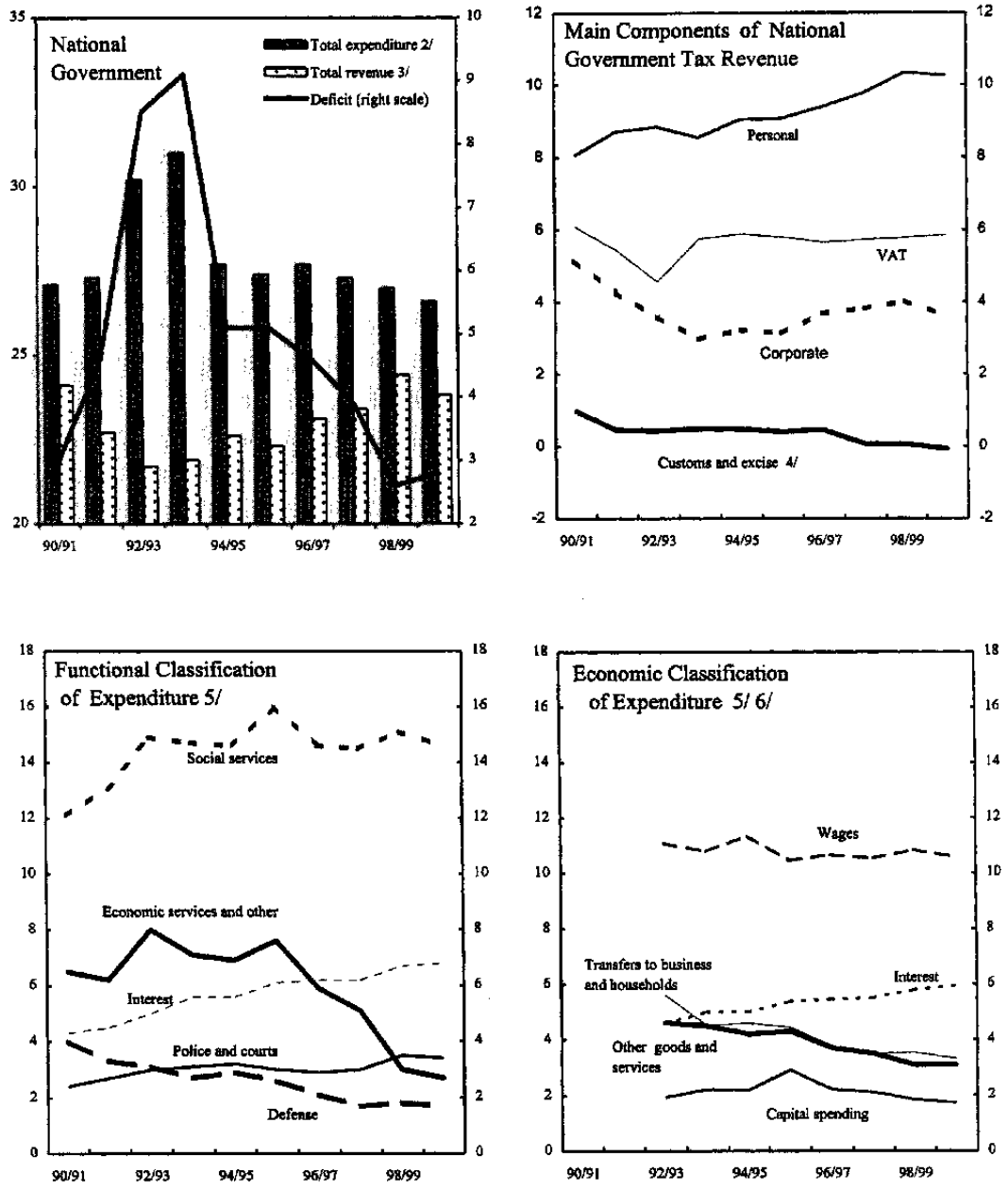
Sources: Department of Finance; Reserve Bank; and Fund staff estimates.

1/ Extrabudgetary institutions (e.g., universities, technikons) and social security funds.

Developments in 1999/2000

21. The 1999/2000 budget for the national government targeted a deficit of 3.1 percent of GDP. Revenue was projected to decline by 0.5 percent of GDP to 23.8 percent, mainly as a result of tax changes in the personal and corporate income taxes (see below), while

Figure 3. South Africa: Government Finances, 1990/91- 1999/00 1/
(In percent of GDP)



Sources: Deptartment of Finance; South African Reserve Bank; and Fund staff estimates.

1/ Fiscal year ending March 31. Budget data for 1999/00.
2/ Excludes extraordinary transfers.
3/ Excludes extraordinary revenue such as sales of strategic stocks of oil and privatization receipts.
4/ Includes stamp duties and fees.
5/ Total expenditure by national and provincial governments.
6/ Data before 1992/93 not available.

expenditure was budgeted to decline by 0.4 percent of GDP to 26.9 percent, consistent with further wage restraint.

22. In October 1999, the national government announced a revised deficit target of 2.8 percent of GDP, on the basis of better-than-projected results for the first half of the fiscal year; revenue was over 8 percent higher in the first half of 1999/2000 than in the corresponding period in the previous year (compared with a budgeted increase of around 6 percent for the whole year) and expenditure was up by just under 7 percent (compared with a budgeted increase of about 6 percent). Government has been engaged in a pay dispute with the civil service; the dispute is currently in arbitration. In the first half of the fiscal year, the provinces had a balanced budget, while the nonfinancial public enterprises had a surplus of 0.2 percent of GDP (on an annualized basis).

23. The medium-term expenditure framework (MTEF) envisages a reduction in the budget deficit to 2.4 percent of GDP in 2002/03, with the overall tax burden declining further to 23.5 percent of GDP. After a substantial redistribution of expenditure since 1994, in which relative allocations to defense and general administration were reduced while those to social programs (education, health, and welfare) and the integrated justice sector (justice, police, and prisons) were raised, the MTEF will feature more balanced growth of the various functional categories over the 1999/2000–2002/03 period.

24. In the case of defense, however, the recently signed defense equipment procurement program would imply that the defense allocation rises from 7 percent of noninterest expenditure in 1998/1999 (equal to 1.4 percent of GDP) to over 8 percent in 2002/2003 (1.7 percent of GDP). The purchase agreement, which was signed with a number of European suppliers, and involves the purchase of helicopters, ships, submarines, and fighter airplanes, is expected to cost R 21-R 30 billion (constant 1999 prices) over 8-14 years (or about 0.3 percent of GDP per year). Suppliers have pledged investments in South Africa, which the authorities estimate would generate R 70 billion in economic benefits over an eleven-year period

Tax changes in 1999/2000

25. The 1999/2000 budget introduced a number of tax changes in the personal and corporate income tax areas, as well as new levies and adjusted excise duties (Table 2). For the personal income tax, the primary rebate was increased so as to raise the tax threshold by the projected rate of inflation; and the secondary rebate, which applies to persons 65 years old or greater, was also increased for the same reason. These changes prevented tax bracket creep and a consequent increase in effective tax rates but were estimated to imply a loss of

potential revenue of R 3 billion. In addition, the brackets of the personal income were restructured so that marginal tax rates applicable to incomes in the range of R 46,000–R 70,000 were reduced from 39–43 percent to 30–40 percent. The loss of revenue associated with this change was estimated at R 1.9 billion.

26. The corporate tax rate was reduced from 35 percent to 30 percent to bring the South African rate more in line with international levels, and thus to make the country more attractive to investors.[10] In addition, the tax on South African branches of foreign-owned companies was reduced from 40 percent to 35 percent and the rate applicable to company policy holder funds held by insurance companies was reduced from 35 percent to 30 percent. The estimated loss of revenue from these measures was R 2.5 billion. To reduce the distortions in the system and broaden the tax base, the budget eliminated the tax incentives pertaining to certain tax holiday schemes and the accelerated depreciation allowances for investments in manufacturing companies effective September 1999.

27. As has been the annual practice for many years, the budget included increases to specific excise duties in order to adjust for inflation. For tobacco products, the government has followed a policy over the past several years of raising excise duties by more than expected inflation. In the 1998/99 budget, excise taxes were increased so as to raise the ratio of tax to retail price from 45 percent in the case of cigarettes (or lower in the case of other products) to 50 percent. In the case of other products, particularly with respect to alcohol products, an attempt was made to move excises in line with international benchmarks, subject to revenue considerations.

28. The budget introduced a skills development levy on payrolls, at a rate of 0.5 percent beginning in 2000/01 and increasing to 1 percent in following years, in order to finance the skills development initiative envisaged in the Skills Development Act (see Section II for details). It also converted the existing surcharge on the price of electricity, which was being used to finance the electrification program for previously disadvantaged communities, into a dedicated electrification levy. The change would enhance the transparency of the program and its financing, but would not involve any change in the overall level of funding to the program (R 1.5 billion) or the price of electricity.

---

[10] The overall corporate tax rate, which includes the standard rate and the 12.5 percent Secondary Tax on Companies, would fall to from 42.2 percent to 37.8 percent.

Table 2. Summary of Effects of Tax Proposals, 1999/00
(In millions of rand)

Total ordinary revenue (first print)		193,829.8
Budget proposals		-6,273.8
Personal income tax		
Adjustment of table, rates and bracket restructuring	-4,850.0	
Corporate income tax		
Reduction in the normal company rate from 35 to 30 percent	2,510.0	
Excises		
Increase in duties on beer, wines, spirits and ciders	179.4	
Increase in duties on tobacco products	495.0	
Reduce duties on soft drinks by 2.83 cents per liter	-56.0	
Fuel levy increase by 4 cents per liter	472.0	
Ad valorem tax base rationalizing	35.0	
Marketable securities tax		
Withdrawal of exemption to Public Investment Commissioner	20.0	
Stamp duty		
Elimination for certain items, increase for customs, excise documents	1.2	
Transfer duty (real estate)		
Restructuring of tax table	-55.8	
Increase in exemptions	-4.6	
Efficiency gains in tax collection		2,700.00
Total ordinary revenue (second print)		190,256.0

Source: Department of Finance, *Budget Review, 1999*

C. Monetary Developments and Policies

29. *Following the turbulence in the foreign exchange and money markets in mid-1998, stability returned to these markets in the fourth quarter of 1998 and continued in 1999. Money and credit growth slowed markedly, and the South African Reserve Bank has allowed interest rates to decline substantially.*

Money and credit

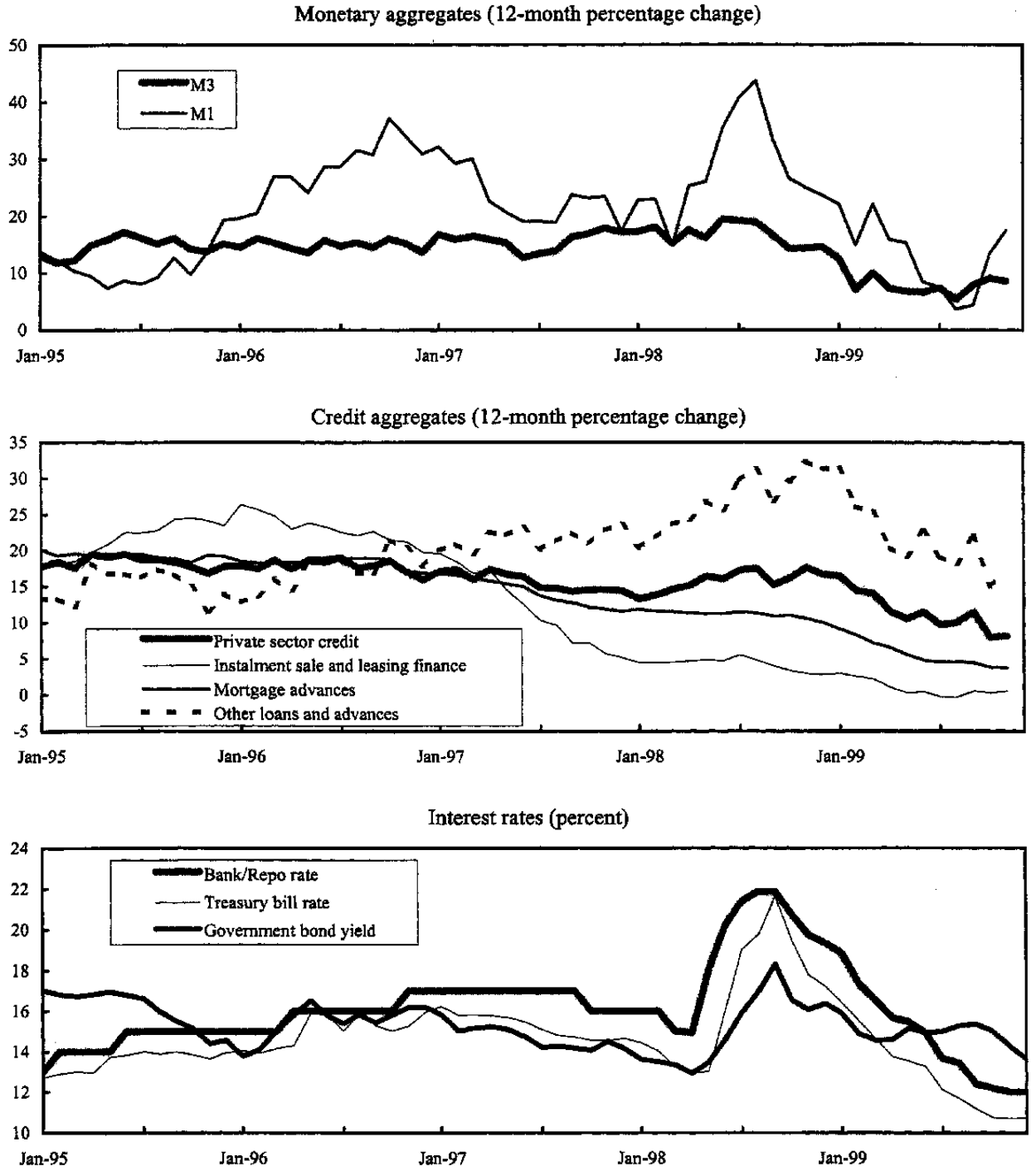
30. The turbulence in the foreign exchange markets in mid-1998—which was mainly related to the contagion from the Asian crisis—also affected liquidity conditions and the money markets in South Africa. The 12-month growth rate of broad money (M3) peaked at 19 percent in June 1998 (its highest level in the 1990s), and the growth rates in more narrow monetary aggregates were even higher (Figure 4). This development reflected, in part, a reduction in interest rates in early 1998, but also a shift in investor preferences from equity and bond markets to more liquid investments, as well as increased transactions demand for money as the turnover in the equity and bond markets rose sharply. [11]

31. The South African Reserve Bank tightened monetary policy in mid-1998, and calm returned to the financial markets starting in the fourth quarter of 1998. In this context, money growth slowed; by the end of 1998, the 12-month growth rate in M3 was 15 percent, and by March 1999 it was below 10 percent. Since then, the growth rate has remained within the South African Reserve Bank's (SARB) informal guideline range of 6-10 percent. The slowdown in growth in broad money can be explained by a reversal of earlier behavior on part of the investors, i.e., as expectations of a recovery in the bond and equity markets emerged, there was a shift away from depository type of investments with a relatively low return but low risk into investments in riskier assets. This decline in liquidity preference is consistent with an even sharper fall in the growth rate of more narrow monetary aggregates, such as M1 (see Figure 4). Other contributing factors to the slowdown in money growth in 1999 included lower inflation and inflation expectations, and the low levels of economic activity.

---

[11] Turnover in the secondary bond and equity markets together was on average R 403 billion a month in 1997. This more than doubled to R 1,001 billion a month during the turbulent second and third quarters of 1998. Turnover then fell back to on average R 834 billion a month during the first 10 months of 1999, as market conditions calmed down.

Figure 4. South Africa: Monetary Indicators and Interest Rates, 1995-99



Source: South African Reserve Bank, *Quarterly Bulletin.*

32. The counterpart to the R 33 billion increase in broad money in the 12-month period through September 1999 was increases in net domestic assets of the banking system of R 22 billion and in net foreign assets of R 11 billion. The increase in net domestic assets was mainly due to credit extension to the private sector, which grew by 11½ percent during this period (12-month rate). However, as with the growth in broad money, the rate of private sector credit expansion has fallen almost continuously since the end of 1998 (the 12-month growth rate was 8 percent by November 1999, compared with 17 percent by end-1998). In particular, credit extension to households increased by only 4 percent between September 1998 and September 1999, compared with 7½ percent a year earlier, mainly reflecting the high interest rates that prevailed after the turbulence in the financial markets and the generally weak economy. The most interest-sensitive components of credit extension, such as leasing finance and installment sales, were virtually flat during 1999 (see Figure 4). Also, mortgage loans grew by only 4 percent between November 1998 and November 1999, compared to 10 percent during 1998. The small expansion of mortgage loans not only reflected the high interest rates of early 1999, but was also the result of a new bank supervisory regulation, which prescribed an increase in the banks' risk weighting of the portion of a new mortgage loan that exceeded 80 percent of the value of the property collateralised.[12]

33. One credit category that continued to show robust growth in 1999 was "other loans and advances," although the growth in this form of credit also slowed (from a 12-month rate of 31 percent by December 1998 to 17 percent by November 1999). The major component of this type of credit was corporate sector lending, and reflected aspects such as additional borrowing by companies in distress to help them through a period of relatively slack demand, continued high activity in the financial market, and increased corporate restructuring. As a consequence of these developments, the share of credit to the corporate sector increased from 46 percent in September 1998 to 50 percent in September 1999.

Interest rates

34. Long-term bond yields continued their general downward trend in the first four months of 1998, in part reflecting non-residents' strong demand for South African assets amid growing expectations of a further easing of monetary policy and further declines in inflation expectations. However, contagion effects from the Asian crisis led to a sharp reversal of this trend in May 1998, as investor sentiment changed dramatically and large-

[12] As interest rates have been reduced in 1999, there have been some indications of a revival in demand for mortgage advances. This demand might be further boosted with the introduction of new home-loan products in October 1999, which in some cases carry a borrowing cost that is more than 2 percentage points below the prime lending rate.

scale portfolio shifts took place.[13] As a result, long-term interest rates rose by 540 basis points between end-April and end-September 1998 to about 18 percent, and the rand depreciated considerably. The authorities responded to the unsettled conditions by tightening monetary conditions, causing short-term interest rates to rise by 700 basis points to nearly 22 percent during the same period,[14] and by intervening heavily in the foreign exchange markets in May and June. Thus, the yield curve shifted upwards and its slope became sharply negative.

35. The turbulence in the financial markets receded in the last few months of 1998, and the SARB started to cautiously allow for a reduction in short-term interest rates. Markets viewed the easing of monetary conditions as appropriate, as evidenced by some strengthening in the value of the rand, a return of capital inflow (albeit small), and a fall in long-term interest rates. The fall and flattening out of the yield curve continued in 1999, and the repo rate fell below its pre-crisis level by June. This trend was facilitated by more stable global conditions in emerging markets, as well as by lower inflation expectations and the maintenance of a prudent fiscal policy, which led to a favorable sentiment regarding the overall economic conditions in South Africa.

36. The downward movement in interest rates was temporarily halted in May 1999 owing to pre-election nervousness among investors and a falling gold price in the world markets. Following the election and a recovery in gold prices, the SARB continued to allow a reduction of the repo rate to 12 percent by November 24. The SARB kept the repo rate fixed at that level (due to Y2K concerns) until January 14, 2000, when it allowed it to drop by another 25 basis points to 11.75 percent. Long-term government bond yields fell by nearly 400 basis points between September 1998 and March 1999, but remained in the range of 14½ –15½ percent between March and November 1999, reflecting lingering concerns about the inflation outlook as core inflation remained at about 8 percent throughout most of 1999. Hence, although long-term interest rates fell somewhat toward the end of 1999 (the long-term yield was 13.3 percent as of January 14, 2000), the yield curve obtained a positive slope during 1999.

Monetary policy procedures

37. The SARB changed its operational procedures for providing banks with short-term liquidity in March 1998; a repurchase auction system was introduced whereby banks tender

---

[13] See *South Africa—Selected Issues* (SM/98/164) for a more detailed description of the turbulence in the financial markets in mid-1998.

[14] The initial interest rate response was somewhat uneven, as the SARB and market participants were still learning how to manage and interpret the newly introduced repurchase system for providing liquidity to banks (see below).

on a daily basis for liquidity provided by the Reserve Bank.[15] Some adjustments to the system have been made over the last year in order to smooth unintended fluctuations in liquidity and enhance interbank activity. Final clearing ("square-off") auctions were introduced in April 1999, at which an oversupply or undersupply of liquidity is adjusted by an additional final clearing repo auction (or reverse repo auction in the case of oversupply). Such a clearing auction occurs at the discretion of the SARB and only if there is a "sizeable" and unintended over- or under-provision of liquidity. The SARB also introduced certain limits on the banks' deposits in the Cash Reserve Contra Accounts (CRCA), which effectively limited the possibility for banks to use monthly averaging of required reserve holdings.

38. The SARB also used open market operations to affect liquidity conditions and thereby influencing the marginal impact of the repo auctions. In addition to buying and selling government bonds, the SARB started issuing short-term Reserve Bank debentures in September 1998. The maturity of the debentures is 28 days, and the outstanding stock was gradually increased in 1999 to R 5 billion by end-June. The main purpose for issuing the debentures was to withdraw liquidity from the market and increase the banks' reliance on the repo auctions. The secondary market for the debentures has been limited. Out of Y2K concerns, the SARB injected liquidity in the market toward the end of 1999 by reducing the stock of SARB debentures to R 1 billion.

D. The Balance of Payments

39. *The external current account strengthened significantly in 1999, mainly owing to a large decline in imports. Compared with a deficit of about 1½ percent of GDP in recent years, it was close to balance during the first three quarters of 1999. A resumption of investor confidence led to an increase in international reserves and facilitated a decline in the NOFP.*

The current account

40. The external current account deficit declined to 0.2 percent of GDP during the first three quarters of 1999, compared with about 1½ percent of GDP in each of the preceding four years. The lower deficit mainly reflected a sharp reduction (by 2 percentage points of GDP) in imports of goods and services.

41. Exports and imports shrank in the first three quarters of 1999. In U.S. dollar terms, exports of goods and services fell by 7 percent (year-on-year), following a 6 percent decline in 1998. Non-gold merchandise exports declined by 6 percent, gold exports by 16 percent, and services receipts by 6 percent. On the imports side, there was a large drop of 12 percent,

---

[15] See Section I in *South Africa—Selected Issues* (SM/98/164) for a description of the new procedure.

following a 6 percent drop in 1998. Merchandise imports fell by 13 percent, while services payments declined by 6 percent. However, both exports and imports started to recover during 1999.

42. The slowdown in trade in 1999 partly reflected an easing in volumes: total exports (goods and services) declined by 2 percent (year-on-year) in the first three quarters of 1999 (compared with an increase of 2½ percent in 1998), while imports dropped by 8½ percent (after an increase of 2 percent in 1998). The slowdown in exports reflected weak production in the manufacturing and mining sectors and weak demand by trading partners, while the slowdown in imports partly reflected the slowdown in domestic demand, which fell by almost 1 percent (year-on-year) in the first three quarters of 1999, and in particular the steep decline in investment by public corporations—following the completion of the investments by the public enterprises (which had a high import content) in late 1998—and by the private business sector.

43. The deficit in the income balance, at 2 percent of GDP in the first three quarters of 1999—unchanged from 1998—reflected a significant decline in both income receipts and income payments. However, both income receipts and income payments strengthened during 1999. The deficit in the transfer balance, at almost 1 percent of GDP in the first three quarters of 1999, was slightly higher than in 1998.

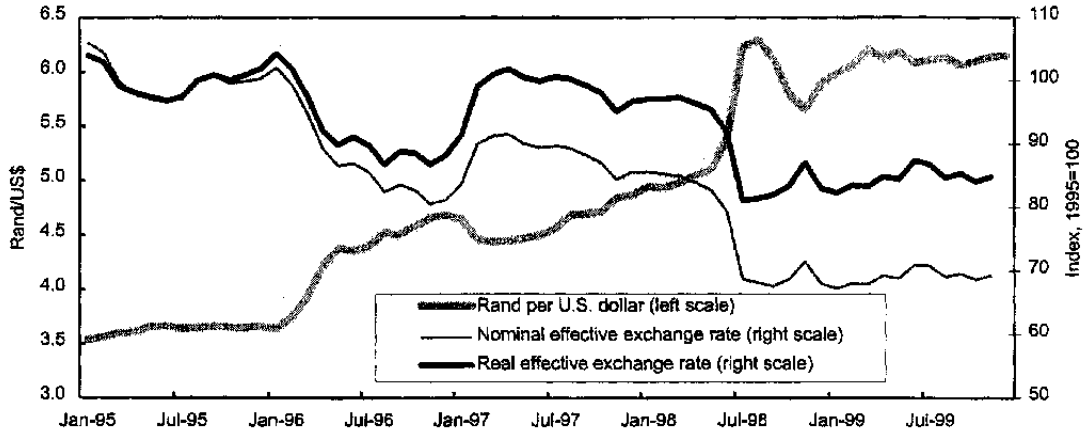
The exchange rate and the terms of trade

44. The nominal effective exchange rate (INS measure) fell by about 9½ percent (year-on-year) in 1999, following a decline of about 14 percent in 1998. In real effective terms, the rand depreciated by about 5 percent in 1999, following a 9 percent fall in 1998. The depreciation took place entirely between April 1997 and September 1998. During this 17-month period, the exchange rate depreciated by 26 percent in nominal effective terms, with over half of the overall depreciation occurring in a single month—July 1998 (see Figure 5). Since September 1998, the exchange rate was relatively stable in nominal effective terms, appreciating slightly in real terms. The terms of trade fell by 1 percent (year-on-year) in the first three quarters of 1999 (following a marginal increase in 1998), due entirely to adverse developments in gold prices.[16]

---

[16] Gold prices (London market, U.S. dollar terms) declined by 11 percent in 1998 (annual average rate) and by an additional 5 percent in 1999. However, following announcements by the Fund that it would conduct its gold sales off-market and by European central banks that they would limit gold sales and the lending of gold, gold prices rebounded strongly in October 1999, averaging a level that was 20 percent higher than during the third quarter of 1999 (the low point) and 5 percent higher than a year earlier.

Figure 5. Exchange Rate Developments, 1995-99



Sources: South African Reserve Bank; and IMF, Information Notice System.

The capital account and the international investment position

45. Net capital inflows (including unrecorded transactions) amounted to more than US$2 billion during the first three quarters of 1999. This represented an increase of 140 percent (year-on-year), albeit from a low base. Inflows of direct investment increased by 39 percent, although they still remained at relatively low levels (US$1 billion during the first three quarters of 1999), after dropping sharply in 1998. Inflows of portfolio investment also increased significantly (partly caused by the activities of the government in international capital markets, including a number of foreign currency bond issues), while inflows of other investment (loans, trade finance arrangements, bank deposits, and other mostly short-term liabilities) declined to negative levels.

46. The balance of payments was in surplus during 1999, enabling an increase in gross official reserves by US$2 billion to US$7.4 billions, after declining by US$½ billion in 1998. More significantly, the Reserve Bank's net open forward position was reduced by US$9½ billion in 1999 to US$13 billion by end-December, after increasing by more than US$6 billion in 1998 (mainly at the time of the exchange market pressures in May-June 1998).

47. The international investment position improved significantly in 1998, with net foreign liabilities decreasing by about US$8 billion to less than US$14 billion (10 percent of GDP) at end-1998. Foreign assets rose by US$10 billion, while foreign liabilities increased by only US$2 billion. Both assets and liabilities increased mainly on account of stronger portfolio investment.

48. External debt totaled almost US$39 billion (29 percent of GDP) at end-1998, a slight decrease from end-1997. Foreign currency denominated debt totaled US$25 billion, of which 57 percent was short-term (on a remaining maturity basis). Between end-1998 and end-June 1999, foreign currency denominated debt remained broadly unchanged at US$25 billion.

Capital control liberalization

49. South Africa has followed a strategy of progressively easing exchange controls since 1994, reflecting the government's commitment to the eventual abolition of all controls on capital transactions; considerable progress in meeting this goal has been made in recent years.[17] [18] With the abolition of the financial rand mechanism in 1995, virtually all exchange controls on nonresidents were eliminated. Nonresidents are now able to purchase shares, bonds and other assets without restriction and to repatriate dividends, interest receipts and current and capital profits, as well as the original investment capital. Nonresidents are also free to hold rand accounts in the banking system, but they are constrained on the amount they may borrow domestically. This constraint has been relaxed, however, and only organizations with more than 75 percent nonresident ownership are subject to limits on their domestic borrowing.

50. Exchange controls on residents have been considerably relaxed. Rather than allowing complete liberalization of a particular type of current or capital transaction, while others remained prohibited, the authorities have pursued a strategy of allowing an increasing array of transactions, with each subject to a quantitative cap. These caps have been progressively raised over time, to the point where many have become nonbinding and, in some cases, abolished.

51. The limit on foreign exchange holdings by authorized dealers has been eliminated, although they continue to be subject to prudential regulations. There are no controls on the transfer of funds arising from the import or export of goods and services, although the foreign currency proceeds from exports must be repatriated to South Africa within 180 days. South African corporates are allowed to invest up to R 50 million abroad, except for investments in SADC countries where the cap is R 250 million. Institutional investors in South Africa (insurance companies, pension funds, and unit trusts) are permitted to invest up to 15 percent of their assets in foreign securities via asset swap arrangements with nonresidents. Private individuals are allowed to invest up to R 500,000 offshore.

52. In the 1999 budget, the following changes to capital control regulations were announced.

- Residents were permitted to make credit card purchases of imports (e.g., purchases via the Internet) of up to R 20,000 per transaction.

---

[17] South Africa formally accepted the obligations of Article VIII, Sections 2, 3, and 4 of the Fund's Articles of Agreement as of 1973.

[18] SM/97/162 contains a discussion of South Africa's history with exchange controls.

- The annual limits for a single student were raised to R 120,000 for living expenses and R 35,000 for travel expenses, in addition to tuition and academic fees.

- The travel allowance for single emigrants was raised to R120,000, together with a settling-in allowance of R 200,000

II. LABOR LEGISLATION IN SOUTH AFRICA, 1995-98[19]

A. Introduction and Summary

53. Between 1995 and 1998 South Africa rewrote almost its entire labor legislation and passed new laws aimed at correcting some of the abuses of the apartheid era. The Labor Relations Act (LRA, 1995) replaced a version of the same name; the Basic Conditions of Employment Act (BCEA, 1997) replaced a version of the same name and the Wage Act; the Skills Development Act (SDA, 1998) replaced the Manpower Training Act (MTA); and the Employment Equity Act (EEA, 1998) was passed. In addition, the Presidential Jobs Summit was convened in 1998, from which was launched a number of initiatives designed to stimulate employment.

54. Given South Africa's high unemployment rate (37 percent in 1997),[20] there have been concerns about the possible impact of these laws on incentives for job creation, quite apart from the positive effects they might have on promoting industrial peace, safeguarding the basic rights of workers, enhancing the skills of the workforce, and redressing anomalies in the workplace caused by the apartheid system.[21] The government has committed itself to a review of existing labor legislation to determine whether it contained unintended aspects that were inhibiting job creation.

55. This section summarizes the recently passed labor laws and examines them in terms of their potential impact on job creation, using the recommendations of the OECD Jobs Study

---

[19] Prepared by Trevor Alleyne.

[20] From Statistics South Africa's 1997 *October Household Survey*. This rate of unemployment is based on the so-called "expanded definition", which includes "discouraged workers" (i.e., persons not working and not actively seeking employment, but who are willing to work) and therefore differs from the official unemployment rate of 22 percent that excludes those workers. See Statistics South Africa (1999).

[21] See, for example, the policy statement of Business South Africa at the 1998 Presidential Jobs Summit (Business South Africa, 1998).

as a point of reference.[22] The paper also compares labor market legislation in South Africa with that in other selected countries. The section is organized as follows: Subsection B provides some stylized facts about the unemployment problem in South Africa; Subsection C describes the recently passed labor laws, comparing them, where relevant, to the old laws they replaced; Subsection D describes the main recommendations of the OECD Jobs Study; and Subsection E analyzes the laws in terms of the recommendation of the Jobs Study and compares them to laws in other selected countries.

56. The review finds that the recently passed labor laws are not significantly out of step with the recommendations of the OECD Jobs Study, except in the area of enhancing the flexibility of wages. In this regard, the LRA's promotion of sectoral collective bargaining agreements, which can be extended to nonparticipants, appears to run counter to the recommendations of the Jobs Study. South Africa's labor legislation is not atypical of that found in many industrialized and emerging market economies, and in many cases the laws passed in the 1995-98 period are in step with the trends taking place in many countries.

B. Unemployment in South Africa

57. The overall unemployment rate was 37 percent in 1997. This figure hides the enormous divergence in unemployment conditions across races, skill levels, sexes, and regions. It also hides the fact that, even with the inclusion of discouraged workers in the labor force, the participation rate (55 percent) is quite low. The unemployment rate varies from a low of 4.3 percent among white men to 54.8 percent for black women (Table 3). Unemployment rates in rural areas are significantly higher than those in urban areas. For black persons, the likelihood of employment does not appear to be affected by the number of years of schooling until they reach the tertiary level, at which point the unemployment rate falls to 10 percent, compared with rates of 50 percent for persons with a secondary education or less.

---

[22] The 1994 OECD Jobs Study (OECD, 1994) was the outcome of a major research effort by the OECD, launched in 1992, to analyze and provide recommendations to combat the rising unemployment rates experienced in much of the OECD area since the mid-1970s. The paper does not take the view that the recommendations of the OECD Jobs Study, if followed, constitute a blueprint for the solution of the employment problem in South Africa. However, it assumes that following the recommendations should improve the situation.

Table 3. South Africa: Unemployment rates, 1997

	South Africa	African	Colored	Indian/Asian	White
Total	37.4	46.5	22.1	12.8	6.2
Urban	30.8	41.5	23.6	12.8	6.2
Rural	50.4	53.2	14.5	...	...
Male	30.7	39	18.4	10.2	4.3
Urban	25.2	34.7	20.1	10.2	4.3
Rural	42	45	10.1	...	...
Female	45.2	54.8	26.7	17.1	8.9
Urban	37.6	49.2	27.7	17.1	8.6
Rural	59.5	61.9	20.7	...	...
Schooling					
No schooling	42.4	44.2	18.3	...	...
Grade 6	47.6	51.3	23.8	...	...
Grade 10	36.1	45.0	24.5	19.3	10.8
Grade 12	33.6	50.3	21.4	10.9	6.2
Diploma	10.2	16.9	...	...	2.6
Degree	5.6	10.3	...	...	3.6

Source: Statistics South Africa, *1997 October Household Survey*

Note: "..." indicates that sample size was too small for reliable estimates

58. One of the most striking features of the employment picture in South Africa is the extremely low ratio— 21 percent— of employed persons to total population (compared with, say, Australia, at 67 percent, Brazil, at 44 percent, and Mexico, at 61 percent). This low ratio reflects, in addition to the high unemployment rate, the low participation rate, and the very skewed age distribution of the population toward the young (39 percent of the population is under 15 years old). On the basis of the current age distribution, and even assuming the same low participation rate for the next ten years, the labor force is likely to grow by 30 percent during this period. Thus, for the unemployment rate simply to remain at its current level, employment would have to grow at the same rate as the labor force, or 2.7 percent a year; moreover, to reduce the unemployment rate by 10 percentage points in ten years, employment would have to grow by over 4 percent a year (see Box 2). It is important to note that, even in the latter case, the number of unemployed persons would be reduced by less than 5 percent over the whole period.

59. The daunting challenge presented by this scenario is well appreciated by the government. Beginning with the 1995 Growth, Employment, and Redistribution (GEAR) strategy, and continuing with the Presidential Commission to Investigate Labor Market Policy in 1996 and the Presidential Jobs Summit of 1998, the government has sought to develop and implement a set of consistent policies aimed at significantly increasing the rate of employment growth in the economy.[23]

60. Against this background, the government has embarked on a review of the recently passed labor laws to ascertain whether they contained any significant unintended disincentives for employment creation. To date, this review has yielded one small modification in the way the BCEA is applied to small businesses (see below). The question arises, however, as to whether any other areas of labor legislation could potentially inhibit employment growth.

---

[23] The Presidential Jobs Summit was convened in October 1998 and consisted of representatives from the government, organized business, and organized labor. Its purpose was to seek specific measures and strategies to increase employment growth. The parties agreed on a number of measures, which are now being implemented, including special employment programs focusing on rural infrastructure development, mentoring and microfinancing programs for the promotion of small enterprises and labor-intensive sectors (particularly tourism), and skills development and training initiatives targeted at youth and women.

Box 2. Labor Market Projections: Some Simple Illustrative Scenarios 1/

POPULATION (In thousands) 2/

	1997	2002	2007	2012
TOTAL	41,444	45,982	50,768	56,052
0-4	4,780	5,303	5,855	6,465
5-9	4,666	4,780	5,303	5,855
10-14	4,708	4,666	4,780	5,303
15-19	4,320	4,708	4,666	4,780
20-24	4,067	4,320	4,708	4,666
25-29	3,587	4,067	4,320	4,708
30-34	3,175	3,587	4,067	4,320
35-39	2,754	3,175	3,587	4,067
40-44	2,255	2,754	3,175	3,587
45-49	1,778	2,255	2,754	3,175
50-54	1,345	1,778	2,255	2,754
55-59	1,112	1,345	1,778	2,255
60-64	915	1,112	1,345	1,778
65+	1,973	2,133	2,176	2,340
Average annual growth rate		2.1	2.0	2.0
Working Age Population (15 - 64 year olds)	25 308	29 101	32 654	36 089
change		3 793	3 553	3 435
percent change		15.0	12.2	10.5

A. AVERAGE PARTICIPATION RATE CONSTANT

	1997	2002	2007	2012
Average participation rate 3/	55.36	55.36	55.36	55.36
Economically active population	13,902	16,110	18,077	19,979
change		2,208	1,967	1,902
percent change		15.9	12.2	10.5
Scenario 1: Unemployment rate constant				
Employed	8,700	10,082	11,313	12,503
change		1,382	1,231	1,190
percent change		15.9	12.2	10.5
average annual percent change w.r.t. base year 5/	-1.5	3.0	2.7	2.4
As a percent of working age population	34.377	34.6	34.6	34.6
Dependency ratio 4/	20.992	21.9	22.3	22.3
Unemployed	5,202	6,028	6,764	7,476
change		826	736	712
Unemployment rate	37.4	37.4	37.4	37.4
Scenario 2: Unemployment rate declines by 0.5 percentage points a year				
Employed	8,700	10,485	12,217	14,002
change		1,785	1,732	1,785
percent change		20.5	16.5	14.6
average annual percent change w.r.t. base year 5/	-1.5	3.8	3.5	3.2
As a percent of working age population	34.4	36.0	37.4	38.8
Dependency ratio 4/	21.0	22.8	24.1	25.0
Unemployed	5,202	5,625	5,860	5,977
change		423	235	117
Unemployment rate	37.4	34.9	32.4	29.9
Scenario 3: Unemployment rate declines by 1 percentage point a year				
Employed	8,700	10,888	13,121	15,500
change		2,188	2,233	2,379
percent change		25.1	20.5	18.1
average annual percent change w.r.t. base year 5/	-1.5	4.6	4.2	3.9
As a percent of working age population	34.4	37.4	40.2	42.9
Dependency ratio 4/	21.0	23.7	25.8	27.7
Unemployed	5,202	5,223	4,957	4,479
change		21	-266	-478
Unemployment rate	37.4	32.4	27.4	22.4

B. ECONOMICALLY ACTIVE POPULATION=25-54 YEAR OLDS

	1997	2002	2007	2012
Average participation rate 3/	58.8	60.5	61.7	62.7
Economically active population	14,893	17,615	20,158	22,611
change		2,722	2,542	2,453
percent change		18.3	14.4	12.2
Scenario 1: Unemployment rate constant				
Employed	8,700	10,290	11,775	13,209
change		1,590	1,485	1,433
percent change		18.3	14.4	12.2
average annual percent change w.r.t. base year 5/	-1.5	3.4	3.1	2.8
As a percent of working age population	34.4	35.4	36.1	36.6
Dependency ratio 4/	21.0	22.4	23.2	23.6
Unemployed	6,193	7,325	8,382	9,403
change		1,132	1,057	1,020
Unemployment rate	41.6	41.6	41.6	41.6
Scenario 2: Unemployment rate declines by 0.5 percentage points a year				
Employed	8,700	10,584	12,447	14,339
change		1,884	1,864	1,892
percent change		21.7	17.6	15.2
average annual percent change w.r.t. base year 5/	-1.5	4.0	3.6	3.4
As a percent of working age population	34.4	36.4	38.1	39.7
Dependency ratio 4/	21.0	23.0	24.5	25.6
Unemployed	6,193	7,031	7,710	8,272
change		838	679	562
Unemployment rate	41.6	39.9	38.3	36.6
Scenario 3: Unemployment rate declines by 1 percentage point a year				
Employed	8,700	10,877	13,119	15,470
change		2,177	2,242	2,350
percent change		25.0	20.6	17.9
average annual percent change w.r.t. base year 5/	-1.5	4.6	4.2	3.9
As a percent of working age population	34.4	37.4	40.2	42.9
Dependency ratio 4/	21.0	23.7	25.8	27.6
Unemployed	6,193	6,738	7,038	7,141
change		545	301	103
Unemployment rate	41.6	38.3	34.9	31.6

1/ Labor market projections are based on two different assumptions about the growth of the economically active population (or labor force). In the first set of projections (A) it is assumed that the participation rate remains constant, which, together with the working age population, determine the labor force. In the second set of projections (B) it is assumed that the economically active population is equivalent to the persons in the 25-54 age group. The reason for using these two different assumptions was to examine whether the low participation rate witnessed for South Africa was due to the high proportion of young people, who although in the working age population, were out of the labor force because they were still in school. However, as the results show, the projections are robust to the ddifferent assumptions.

2/ The age distribution of the population is estimated by (i) calculating total population on the basis of assumed aggregate population growth rates (equal to Statistics South Africa's estimates of actual population growth over the past five years); estimating the first age cohort (0 - 4) by applying the aggregate population growth rate to the 0 - 4 cohort of the previous period; assuming a natural aging of each cohort except for the 65+ group; and calculating the 65+ age cohort as a residual. Note that the working age population, which comprises of the 15- 64 year olds, it is independent of the assumption of aggregate population growth under this methodology.

3/ Economically active population divided by the working age population

4/ Employed persons divided by the population

5/ 1997 number represents the 1994-1998 average annual growth rate of employment in the formal sector

C. Labor Legislation, 1995-98

The Labor Relations Act

61. The LRA (1995) does not seem to differ significantly in its core principles from its predecessor.[24] It promotes and facilitates collective bargaining; regulates the right to strike and the recourse to lockout; outlines procedures for the resolution of labor disputes through statutory conciliation, mediation, and arbitration (for which purpose the Commission for Conciliation, Mediation and Arbitration has been established); defines what are fair/unfair dismissals and establishes the procedures that must be followed to address this issue, as well as the rights and responsibilities of the parties involved; and bestows on the Labor Court ultimate jurisdiction over labor-related disputes.

62. The LRA guarantees the right of all workers to participate in the formation of a trade union and/or to become a member of a trade union. At the workplace level, the LRA allows for a representative trade union (i.e., a union or unions representing the majority of workers in a place of employment) to conclude collective agreements including agency shop agreements and closed-shop agreements.[25]

63. A key objective of the LRA is to promote collective bargaining at the sectoral level. In this regard, the bargaining council may be viewed in some sense as the cornerstone institution of the labor market.[26] Bargaining councils are forums made up of trade unions and employer organizations covering a particular economic sector and geographical area, with power shared equally between the two sides. The powers and functions of the bargaining council, which are also outlined in the LRA, include concluding and enforcing collective bargaining agreements on wages and working conditions; determining those matters that may not be grounds for a strike or lockout; performing dispute resolution functions; promoting and establishing training schemes; and establishing and administering pension, provident, medical aid, unemployment, and training funds. The constitution of every bargaining council

---

[24] Neither the new version nor the old version of the LRA applies to the military or the national intelligence and secret services. However, the new version applies to domestic servants in private households and to government workers, including teachers, which the old version did not.

[25] Agency shop agreements are collective agreements that bind nonparties to the agreement and also require nonparties to contribute an agreed agency fee to the representative union. Closed-shop agreements require all workers covered by the agreement to be members of the trade union once they gain employment. These agreements are permitted provided that they are ratified by a two-thirds majority vote involving all workers.

[26] Bargaining councils were called industrial councils under the old Labor Relations Act.

must provide for the representation of small and medium enterprises and contain detailed procedures and rules on dispute resolution procedures and on exemptions from collective bargaining agreements. The LRA outlines the requirements for the registration of these councils.

64. For the most part, agreements concluded by the bargaining council on a given issue (e.g., working conditions or strike procedures) supercede any regulation on that issue contained in the LRA or the BCEA. This reflected a desire on the part of the lawmakers to make workplace rules and conditions reflect, as far as possible, voluntary agreements between employers and workers, as opposed to government-mandated regulations. However, it may be that the very "market-based" labor relations desired by the LRA have been compromised somewhat by virtue of the law's granting too much power to the bargaining councils, especially in determining workplace practices and conditions of those workers and employers not represented in the bargaining councils.

65. The LRA specifies that bargaining council agreements **must** be extended to nonparticipants in the same registered scope of the council (the *ergo omnes* principle) by the Minister of Labor, upon request of the bargaining council, if all of the following conditions are satisfied: (i) one or more trade unions in the bargaining council representing the majority of employees covered by the council vote in favor of extension; (ii) one or more employer organizations in the bargaining council employing a majority of employees covered by the council vote for the extension; (iii) the employees covered by the bargaining council account for the majority of the workers in the registered scope of the council; and (iv) the bargaining council agreement establishes an independent body to grant exemptions to nonparticipants and provides the criteria upon which such exemptions would be granted (which must be fair and promote the primary objectives of the LRA). The Minister of Labor may also extend the bargaining council agreement, even if the above conditions are not met, provided that the parties to the council are **sufficiently** representative within the scope of the council and the minister believes that failure to extend the agreement may undermine collective bargaining at the sectoral level.[27]

66. Regarding employment security rules, the LRA does not prescribe formal restrictions on temporary employment or maximum probationary periods. The LRA defines an **automatically unfair dismissal** as any dismissal for (i) participating in or supporting a strike or protest action that complies with the provisions of the LRA; (ii) a woman's pregnancy; or

---

[27] Under the old act (1988 amendments), the minister had complete discretion. He could, if he deemed it appropriate, extend (or not) a collective agreement to all nonparties in the industry. The minister was also required to satisfy himself that the parties to the agreement were "sufficiently" representative of the employers and employees engaged in the industry. The law provided no guidelines in this regard.

(iii) unfair discrimination on the basis of race, age, sex, sexual orientation, etc.[28] Such dismissals, if proved by the plaintiff in the Labor Court, could leave the employer liable for damages of up to 24 months of the employee's salary. For other cases, such as dismissals related to the employee's conduct or capacity, or the employer's economic operations (in which the employer is unable to prove that the dismissal was justified), damages can be as high as 12 months of the employee's salary.

67. For dismissals on account of the employer's operational restructuring, the employer is required to consult with the trade union representing the affected workers, and an attempt must be made to reach an agreement on measures to avoid or minimize the number of dismissals, the criteria for selecting those to be dismissed, and severance pay. In the absence of an agreement, the LRA does not require any arbitration or further procedures on the matter, except to require that the employer provide written statements to the trade union on the various reasons for disagreeing with its proposals, and to require that the employer's criteria for selecting those to be dismissed are fair and objective. The LRA does not prescribe any rules on minimum severance payments; however, this is taken up in the BCEA (see below).

68. Employees have the right to strike and employers the right to lockout if the issue in dispute has first been referred to a bargaining council or to the Commission for Conciliation, Mediation and Arbitration, and if a certificate stating that the dispute remains unresolved has been issued. However, neither party can strike or lockout if a collective agreement prohibits it in respect of the issue in dispute; if an agreement requires the issue in dispute to be referred to arbitration; or if the parties are engaged in an essential or maintenance service.

The Basic Conditions of Employment Act

69. As its name suggests, the Basic Conditions of Employment Act (1997) prescribes basic minimum protection for workers. Compared with its predecessor, it provides more generous worker benefits. It establishes a work week of 45 hours (with a stated goal of eventually reducing it to 40 hours), compared with 46 hours previously; a maximum of 10 hours overtime per week, remunerated at 1½ times the regular wage (compared with 1 1/3 times previously); and double pay for work on Sundays and public holidays. Workers in employment for a full year are entitled to 21 days annual leave at full remuneration (compared with 14 days previously); two weeks' (fully paid) sick leave[29]; four consecutive

---

[28] Discrimination may be considered fair if it is based on an inherent requirement of the particular job.

[29] For sick leave, the BCEA actually specifies that an employee is entitled to six weeks' sick leave over a three-year period of continuous employment, or one day for each 26-day period worked.

months maternity leave; and three days (fully paid) family responsibility leave (nonexistent in previous law).

70. Regarding the termination of an employment contract, an employer or employee must give one week's notice if the employee has been employed for less than four weeks (compared with one day's notice under the previous law), two weeks' notice if employed for between four weeks and a year (compared with one or two weeks' notice previously)[30]; and four weeks' notice if employed for more than a year.[31] Severance pay, in the event of dismissal because of economic restructuring, must be at least one week's salary for each year of continuous employment.

71. As mentioned above, a collective agreement concluded by a bargaining council may alter, replace, or exclude any provision in the BCEA except for those governing the daily and weekly hours of work, maternity and sick leave, and child employment provisions.[32] The Minister of Labor also has this power, which he may exercise by way of a ministerial determination, either at his own discretion or following a petition by an employer or employer organization, and after receiving advice from the Employment Conditions Commission.[33] The Minister of Labor issued such a determination in November 1999 regarding the applicability of certain aspects of the BCEA to small businesses. For businesses with less than ten employees, the maximum number of overtime hours was raised to 15 hours per week; the minimum overtime remuneration rate was lowered to "time and a third"; and their eligibility for three days of family responsibility leave was rescinded. These changes, however, did not apply to small businesses that were already covered by a bargaining council agreement or any other ministerial sectoral determination.

---

[30] Under the old BCEA, if an employee had been employed for more than four weeks (no intermediate period of between four weeks and a year was specified), the employee or employer had to give one week's notice if the employee was paid weekly, or two weeks' notice if the employee was paid monthly.

[31] Instead of giving notice, an employer may pay the employee the remuneration the employee would have received during the notice period. This applies to all cases described above.

[32] In the case of annual leave, a bargaining council agreement may reduce an employee's annual leave to not less than two weeks.

[33] The determination can be made in respect of the basic conditions of employment covering any category of employees or employers, for any period determined by the minister. The minister may make a sectoral determination, establishing basic conditions of employment, including minimum rates of remuneration, for employees in a given economic sector in a specific geographical area, provided that the employees are not already covered by a bargaining council agreement.

The Employment Equity Act

72. The purpose of the EEA is to promote equal opportunity and fair treatment in employment through the elimination of unfair discrimination, and to implement affirmative action measures to redress the disadvantages experienced by **designated groups** (blacks, women, and people with disabilities) in order to ensure their equitable representation in all occupational categories. The law prohibits **unfair** discrimination, with the burden of proof on the employer to show that it is fair;[34] it also prohibits ad hoc medical HIV/AIDS or psychological testing.

73. The law requires **designated employers** (those with more than 50 employees or with an annual turnover above a given threshold)[35] to prepare and implement employment equity plans containing affirmative action measures, after consultation with employees and/or their trade unions. These plans, which are to be implemented over one to five years, must specify numerical goals and a timetable to achieve equitable representation of **suitably qualified persons**[36] from designated groups within each occupational category. The employer is required to submit a report to the Director-General of the Ministry of Labor within 12 months of the passing of the act, outlining the initial development and consultation regarding the employment equity plan; thereafter, an annual (for employers employing more than 150 persons) or biannual update on the progress in the implementation of the plan is required.

The Skills Development Act

74. The SDA (1998), which replaced the Manpower Training Act (MTA), seeks to encourage employers to provide opportunities for employees to acquire new skills, employ job seekers who find it difficult to gain employment, enable new entrants to the labor market to gain work experience, and improve the employment prospects, through training, of persons previously disadvantaged by unfair discrimination. Financing for the SDA will come from the Skills Development Levy, a payroll tax of 0.5 percent that will begin in April 2000 and increase to 1 percent in April 2001.

---

[34] Discrimination on the basis of inherent requirements of a job or affirmative action measures consistent with the act, including preferential treatment and numerical goals but excluding quotas, are **not** unfair.

[35] The threshold varies from R 2 million for businesses in the agriculture sector to R 25 million for businesses in the wholesale trade and commerce sectors.

[36] In the act, these are defined as persons possessing any one or combination of formal qualifications, prior learning, relevant experience, or capacity to acquire the ability to do the job within a reasonable time.

75. The SDA envisages the creation of a National Skills Authority (analogous to the National Training Authority in the MTA) to advise the Minister of Labor on the design of a national skills development policy; and the creation of sectoral training boards, composed of representatives of organized labor and business, and government departments.[37] Bargaining councils having jurisdiction in the particular sector may also participate, if applicable. The training boards are responsible for developing and implementing a skills plan consistent with the national skills development strategy by establishing and promoting apprenticeships or **learnerships**, approving workplace skills plans, allocating training grants to employers, education/training providers, and workers, and collecting and disbursing the skills development levies in its sector.

76. Learnerships are to consist of a structured learning component, as well as practical work experience of a specified nature and duration, leading to a qualification recognized by the South African Qualifications Authority. If a learnership agreement is concluded between a learner and employer with whom the learner is already employed, the learner's contract of employment is not affected. If the learner was not in the employment of the employer with whom he signed a learnership agreement, the learner and employer must enter a contract of employment. This contract would be subject to any terms and conditions of a ministerial determination, as outlined in the BCEA (see above), which would seek to ensure that any proposed condition of employment would not have a negative effect on the employment of learners or the achievement of the purposes of the SDA. The Minister of Labor has yet to make a determination regarding learnerships, including on the rate of remuneration for learners.

77. It is not yet clear what the scope of the learnership program will be, although the objectives of the law suggest that it will broader than its predecessor. Under the MTA, the apprenticeship system was largely geared to training artisans and attracting persons who already could be classified as having some skills. Similarly, although these apprentices may have been paid at a rate equal to (or some fraction of) the lowest artisan wage, this wage was certainly higher than the wage of the unskilled workers.

78. Twenty percent of the Skills Development Levy paid by an employer will automatically go to the Skills Development Fund. Eighty percent of the levy will be transferred to the SETA that has jurisdiction over the employer, or, if a SETA does not exist, the money will go to the Skills Development Fund. The money in the fund may be used only for projects identified in the national skills development strategy as national priorities or as determined by the Director-General of the Ministry of Labor.

---

[37] These Sector Education and Training Authorities (SETAs) are analagous to the training boards of the MTA.

D. The Recommendations of the OECD Jobs Study

79. The main conclusion of the OECD Jobs Study in 1994 was that the root cause of the steadily rising unemployment rates in much of the OECD since the mid-1970s was the failure of member countries to adapt quickly and creatively to the transformation of the world economy that was being driven by the forces of globalization and rapid technological change. The Jobs Study made a number of detailed recommendations constituting an integrated policy mix of labor market reforms, macroeconomic policies designed to stimulate noninflationary growth, and policies to foster technical progress, increased competition, and entrepreneurship.[38]

80. The strategy's emphasis on a balanced mix of policies was deliberate and reflected an appreciation for the need to tackle the unemployment problem through actions on many fronts.[39] Nevertheless, the policy recommendations recognized the key role played by the operation of the labor market and labor market institutions in causing the high and persistent rates of unemployment. The recommendations that directly affect the labor market are summed up in the following six points: (i) make wage and labor costs more flexible by removing restrictions that prevent wages from reflecting local conditions and individual skill levels, in particular of younger workers; (ii) reform employment security provisions that inhibit the expansion of employment in the private sector; (iii) increase the flexibility of working time voluntarily sought by workers and employers; (iv) reform unemployment and related benefit systems—and their interaction with the tax system—such that society's fundamental equity goals are achieved in ways that impinge far less on the efficient functioning of labor markets; (v) strengthen the emphasis on active labor market policies and reinforce their effectiveness; and (vi) improve labor force skills and competencies through wide-ranging changes in education and training systems.

81. In the following section, South African labor laws are analyzed in terms of the above basic policy guidelines, with no presumption made that deviations from them constitute the main factors underlying South Africa's unemployment problem. Rather, the purpose is to show how South Africa's labor laws stand up in the light of policy recommendations made to a group of countries also attempting to overcome the problem of high and persistent unemployment and which, in some cases, possess similar legal and institutional frameworks underlying their labor markets.

---

[38] See OECD (1995).

[39] The Jobs Study was followed up with detailed recommendations for each individual member country.

E. South African Labor Laws and the OECD Jobs Study Recommendations

Increasing flexibility in wages and labor costs

82. In this area, the Jobs Study emphasized the importance of aggregate wage flexibility (i.e., ensuring that real wages were sensitive to changes in the unemployment rate) and relative wage flexibility (i.e., ensuring that wages reflected underlying productivity). The study noted the negative effects on employment in certain countries of minimum wage legislation, wage indexation policies, and centralized collective bargaining agreements, to the extent that they inhibited the market determination of wages.

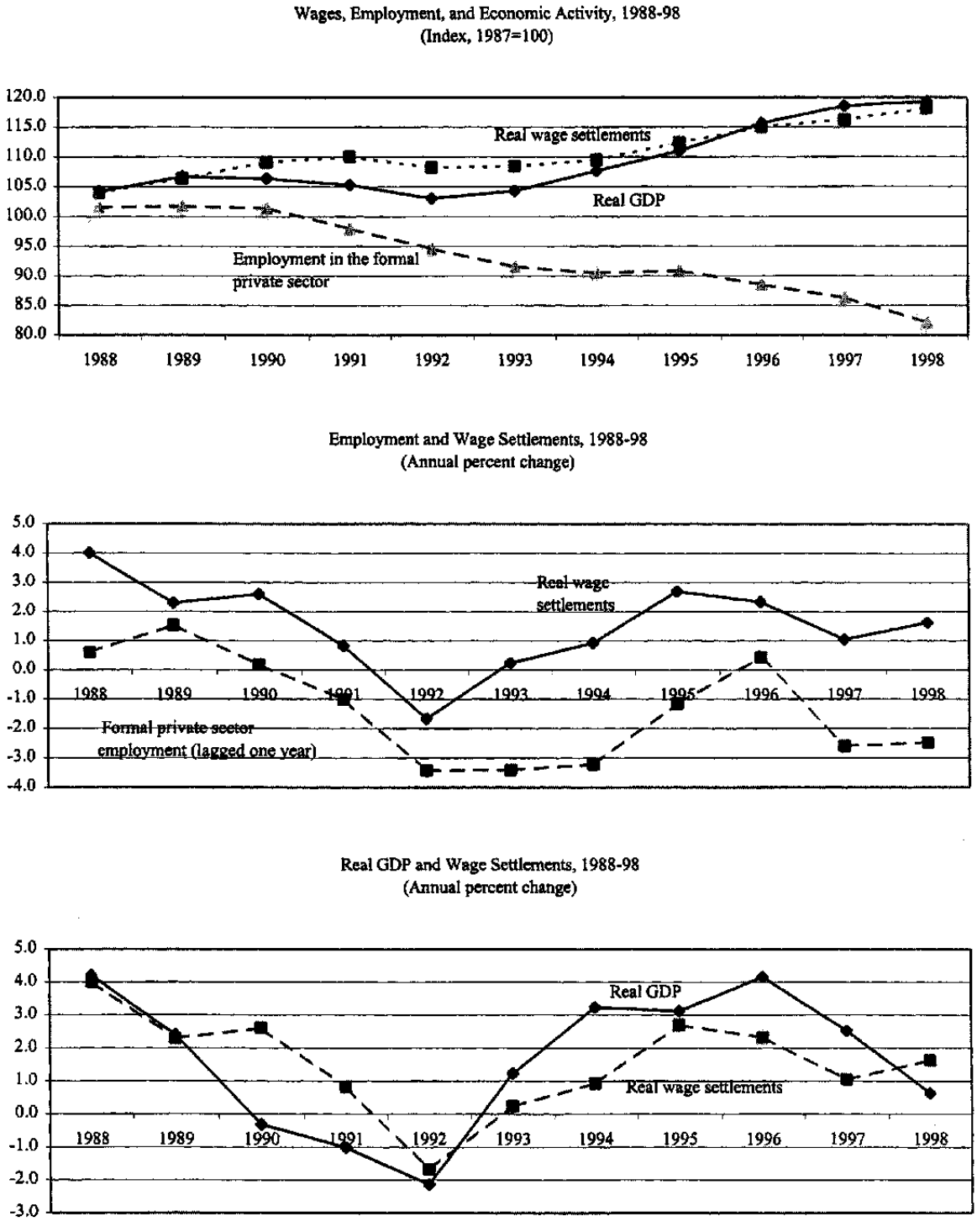
83. As a means of supporting faster employment growth, the Jobs Study advocated a relaxation of policies that impeded the emergence of market-determined wage differentials. Even though it acknowledged that its recommended policies could create low incomes that might put households below the poverty line, the Jobs Study argued that, in the context of the serious unemployment problem, more weight could be given to establishing market-clearing wages while simultaneously pursuing equity objectives through other instruments. Moreover, the greatest concerns about wage inequality and in-work poverty generally related to adults with family responsibilities. Young persons and other first-time job seekers could gain valuable work experience and skills in low-wage jobs and then eventually move up the job ladder; low-wage jobs, it was suggested, were bad only if people became trapped in them.

84. In South Africa, there is no legislated minimum wage, although, as mentioned above, the Minister of Labor is authorized to make determinations on conditions of work (including minimum wages) in cases where workers are not covered by collective bargaining agreements. The wage rates prescribed in these determinations generally tend to be significantly lower than the minimum wage rates for comparable occupations negotiated in bargaining council agreements.[40] There is no official wage indexation process in South Africa. Nevertheless, real wages in South Africa have shown a remarkable insensitivity to labor market conditions, as a result of which adjustment has taken place almost entirely on the employment side (Figure 6).

---

[40] For example, in 1998, a ministerial determination for the security sector set minimum wages for "general" workers in urban areas at R 3.98 per hour. This compared with rates of R 5.66 per hour for urban general workers under the Gauteng Building Bargaining Council; R 6.07 per hour for the (national) Motor Industry Bargaining Council; and R 8.33 per hour for the National Bargaining Council of the Leather Industry (Footwear Section Collective Agreement).

Figure 6. South Africa: Wages, Employment and Economic Activity, 1988-98



Sources: South Africa Reserve Bank; Andrew Levy and Associates; and IMF staff estimates

85. Moreover, with its promotion of sectoral collective bargaining, the LRA seems to go against the Jobs Study recommendation that wages be more reflective of productivity differences across firms and across workers; this tendency is even exacerbated by the automatic extension of collective bargaining contracts to nonparticipants. While there is nothing in the LRA that precludes more firm-level bargaining, the law serves to reinforce the system of sector-level agreements that has been slow to voluntarily move to a more flexible wage formation system. Although there are a few examples where productivity frameworks have been incorporated into wage agreements,[41] bargaining council agreements generally prohibit any firm-level modification of the agreement; firms must formally apply to the council for approval to be exempted from a given provision in an agreement.[42] One measure that could possibly improve relative wage flexibility would be to grant the Minister of Labor more discretion in not extending bargaining council agreements to nonparticipants (as was the case in the old LRA), a proposal that was put forward in the GEAR in 1995 (and made by the Jobs Study to OECD member countries), but which has not yet been implemented.[43]

86. Centralized collective bargaining, with the extension of agreements to nonparticipants, is not uncommon in either the industrialized world, where it occurs in France and Germany, or in the emerging market economies, where it exists in Argentina and Brazil. However, it is noteworthy that, during the 1990s, the trend has been unmistakably in the direction of introducing more flexibility in the wage formation process: in Norway, the government is encouraging social partners to pay more attention to local conditions when negotiating wage bargains; in Australia, the centralized wage system has been largely replaced by firm-level wage bargaining based on productivity improvements; and in the Netherlands and Spain, new legislation permits firms and employees to agree to exclude themselves from sectorally negotiated minimum wages.

Reforming employment security provisions

87. In recommending reforms in this area, the Jobs Study was particularly concerned that overly strict employment protection legislation in certain countries was reducing the incentive of firms to hire workers because the laws made it too difficult or expensive for firms to terminate workers who were no longer required. However, it acknowledged that a delicate balance needed to be struck because employment protection legislation could provide important benefits; specifically, longer-term contracts could encourage employers

---

[41] See Andrew Levy and Associates (1999).

[42] In a few cases, bargaining council agreements grant automatic exemptions to small enterprises.

[43] Of course, it would be important for the Minister of Labor to use this discretion to aggressively promote more flexibility in the wage formation process.

and workers to invest in on-the-job training that would otherwise likely be hindered by high labor turnover.

88. As mentioned above, the LRA defines what constitutes just or unjust firing; the damages for which the employer might be liable; and the procedures required to terminate workers on account of economic restructuring. While the rate of severance pay is substantially lower than in other countries, a negative aspect of South African labor laws from the standpoint of overly strict employment security is the absence of a cap on severance pay, which tends to raise the prospective termination costs and may create a disincentive for keeping long-term employees.

89. South Africa's employment protection legislation is not overly strict when compared with other countries (Table 4). In fact, a major concern on the part of the union movement regarding the LRA is that it requires only that firms consult unions in the case of layoffs, instead of requiring that the size and terms of any layoff be the product of employer-union negotiation. In contrast, in France, which has been cited by the OECD for its onerous employment protection legislation, dismissals must still be approved by the Ministry of Labor; in Indonesia, also, a long process is required for collective dismissals.

Flexible working time arrangements

90. The Jobs Study recommended that introducing more flexible working-time arrangements in some countries could enhance job creation and employment prospects. It noted that the labor requirement of firms varied over time and across sectors, both as a function of seasonal and cyclical fluctuations in demand and differences in production processes. As such, a single set of rules for all firms or sectors constrained flexibility for both employers and workers, leading to reduced output and employment.

91. As described above, the BCEA contains regulations on conditions of work, including maximum hours of daily, weekly, and overtime work, holiday and Sunday work, overtime compensation, and leave entitlements. However, in certain ways, the system is flexible, presenting no formal constraints on part-time employment, allowing employers and employees to average hours over a four-month period or substitute additional time off for overtime, and even overriding many of these regulations in collective bargaining agreements. While one could argue that South Africa is not out of step with recent trends in the rest of the world, they are nevertheless behind Europe, which has been more aggressive in adopting flexible working-time arrangements. For example, in France, rules on maximum weekly hours have been relaxed by a reform that allows firms and their employees to annualize working hours (i.e., average them over a 12-month period), thereby reducing overtime costs. In Spain, the 40-hour work week was annualized, minimum overtime rates abolished, and rules allowing firms to offer additional time off in lieu of overtime introduced. Also, in a number of countries, including France, Spain, Argentina, and Brazil, recent reforms have been introduced to facilitate part-time and/or temporary work.

Table 4. South Africa: Layoffs and Severance Procedures in Selected Countries

	Notification	Severance Pay			Special Procedure for Collective Dismissals?
		x=monthly salary; N=no. years employed			
		Firing with just cause	Firing without just cause	Dismissal due to economic conditions	
Argentina	1month	0	1*x*N. Minimum: 2*x. Maximum: limit on N.	½*x*N. Minimum: 2*x Maximum: limit on N.	
Brazil	1 month. During this month employee entitled to 2hours per day (paid) to look for work	Accumulated balance plus accrued interest in FGTS (Fundo de Garantia por Tempo de Servicio). At time of hiring, employer opens a bank account for employee into which is placed 8 percent of the employee's wage.	Includes dismissals for economic reasons. In addition to FGTS balance, employer pays a "fine" equal to 40 percent of FGTS balance.		
Chile	1 month	0	1.2*x*N. Maximum: N=11. For voluntary resignation, employer pays ½*x*N, if N>=7.	1*x*N	
Mexico	0 – 1 month	3*x	Includes dismissals for economic reasons. No maximum limit 2/3*x*N		Negotiation with union. In case of no agreement, approval by Conciliation and Arbitration Board required
France	1 – 8 weeks	0	0.1*x*N	0.1*x*N	"Social plan" required, which must be approved by labor market authorities
Spain	1 month		1.1*x*N. Maximum: 42*x	2/3*x*N Maximum: 12*x	In 1994, prior administrative authorization for dismissals for economic reasons was abolished
Indonesia		0		x*N. maximum: 4*x. Workers with more than five years tenure are entitled to an additional bonus which can reach 5 month's salary for workers with more than 25 years tenure.	Negotiation between employer and worker representatives required. Mediation by Ministry of Manpower Services if no agreement is reached, and an extensive appeals process is provided for.
Korea	0 – 1 month	0	1*x*N	1*x*N (In 1998, legal permission granted for dismissals due to economic conditions)	Duty to inform and consult with union.. Must notify Minister of Labor
Australia	1 – 4 weeks	0	0	0	Employers required to consult with unions. Notification of public authorities required
New Zealand	No specific period required by law; case law requires reasonable notice	0	0	0	Duty to inform and consult with union only if required by contract. No notification of public authorities required
South Africa	1 – 4 weeks	0	0	¼*x*N	Employers required to consult with unions

Sources: Cox Edwards (1993); Cox Edwards (1996); Gill and Neri (1998); Gausch (1999); Mizala (1998); and of OECD Economic Surveys for various countries.

92. Although not specifically related to working-time flexibility, there have been some concerns expressed by the business sector that the EEA could hinder flexibility in the workplace if it were to constrain the ability of employers to organize their workforce as they desired.[44] The EEA declares that an employer is not required to implement any policy that would establish an absolute barrier to the prospective or continued employment or advancement of persons not from designated groups. It thus remains to be seen to what extent operational flexibility will be compromised as a result of having to comply with the affirmative action requirements of the law.

Reform of tax and benefit systems

93. **Tax and benefit systems** not only have an impact on the demand for labor by affecting the nonwage costs of employment and, hence, the demand for labor, but they also have an important impact on the supply of labor by affecting the incentive to take a job or to improve one's skills. The Jobs Study noted that, in a number of countries, payroll taxes, including social security contribution rates, were contributing to low employment levels.[45] It advocated that governments shift part of the base of financing social programs away from payroll taxes to other sources of revenue, especially in those countries where payroll taxes were high.

94. Under the Skills Development Levy Act, a payroll tax of 0.5 percent (later rising to 1 percent) will be levied on firms in order to finance worker training programs. While the importance of skills development is unquestioned, alternative sources of funding might be preferable, since they would avoid the potential disincentives to employment from the payroll tax. Nevertheless, compared with other countries, South Africa's payroll taxes are small, totaling less than 3 percent (including the Skills Development Levy).[46] In contrast, Argentina, Brazil, France, Germany, and Spain all have payroll taxes greater than 30 percent, with the median for OECD countries higher than 20 percent (Table 5). However, the trend of recent reforms is to lighten the payroll tax burden, as European countries have either reduced

---

[44] See Andrew Levy and Associates (1999). Firms have complained about increased costs attributable to increased training requirements, higher administration costs, and difficulties in finding suitably qualified persons.

[45] If wages are flexible, high nonwage labor costs are unlikely to have major effects on employment in the long run. However, where wages are inflexible, employment will suffer if nonwage labor costs rise.

[46] Apart from the forthcoming Skills Development Levy, there is currently a 1 percent unemployment contribution on employers and workers, and payroll taxes levied by local authorities range from 0.2 percent to 0.4 percent.

Table 5. South Africa: Payroll Taxes and Unemployment Insurance Benefits in Selected Countries

	Payroll Tax Rate	Unemployment Insurance System
Argentina	Old Age, Disability, Death: 27 percent (employee: 11, employer: 16) Sickness, Maternity: 9 percent (employee: 3, employer: 6) Unemployment Insurance: 2.5 percent (employee: 1, employer 1.5) Family Allowance: 6 percent (employer: 6) Total: 43.5 percent	Duration of benefit (B) based on months of contributions (C) to national employment fund, financed by 1.5% surcharge on firm's wage bill and 3% surcharge on payroll of temporary employment agencies. Condition for eligibility: Termination without just cause. Contribution / Compensation / Replacement rate (percent of net salary): $12 < C < 24$ / $B = 4$ $24 < C < 36$ / $B = 8$ $C >= 36$ / $B=12$ 1^{st} 4 months: 50 2^{nd} 4 months: 42.5 3^{rd} 4 months: 35
Brazil	Old Age, Disability, Death: 28 - 31 percent (employee: 8 – 11, employer 20) Other: 2 – 6 percent (employer: 2 – 6 percent) Total: 30 – 37 percent	Conditions for eligibility: Means tested. Termination without just cause; employment for past six months, or legally self-employed for 15 months; no pension or income sufficient for family subsistence. Benefit period: up to 5 months. Replacement rate: 50 percent of avg. salary of past 3 months, but not lower than minimum wage, not greater than 3 times min. wage.
Chile	Old Age, Disability, Death: 13 - 20.7 percent (employee: 13 – 20.7) Sickness and Maternity: 7 percent (employee: 7 percent) Other: 1 percent (employer: 1 percent) Total: 21 – 28.7 percent	Condition for eligibility: registered for employment. Benefit period: 1 year Benefit: 17,338 pesos (US$37) per month for first 90 days, falling to 8,700 pesos (US$19) per month for last 6 months. Subsidy not widely utilized because of its small amount.
Mexico	Old Age, Disability, Death: 14.9 - 20.7 percent (employee: 1.8 - 2.1, employer: 12.8 – 18.9) Sickness and Maternity: 11.9 percent (employee: 3.1, employer: 8.8) Other: 1.3 percent (employer: 1.3) Total: 28.1 – 33.9 percent	None

Table 5. South Africa: Payroll Taxes and Unemployment Insurance Benefits in Selected Countries (concluded)

	Payroll Tax Rate	Unemployment Insurance System
France	Old Age, Disability, Death: 14.8 percent (employee: 6.6, employer: 8.2) Sickness and Maternity: 19.6 percent (employee: 6.8, employer: 12.8) Unemployment Insurance: 6.2 percent (employee: 2.2, employer 4.0) Other: 8.7 percent (employer: 8.7)	Benefit: Replacement rate of 57.4 percent for a period varying according to age and length of covered employment. An additional period of reduced benefits may follow, which also varies according to age and work history. The benefit is reduced every 4 months.
Spain	Total: 49.3 percent Old Age, Disability, Death: 28.3 percent (employee: 4.7, employer: 23.6) Unemployment Insurance: 7.8 percent (employee: 1.6, employer: 6.2) Other: 2.0 percent (employer: 2)	Eligibility condition: 12 months of contributions during past 6 years. Registered for employment. Benefit: 70 percent replacement rate for first 6 months, 60 percent thereafter. Benefit period: 2-year maximum (with 6 years of contributions)
Indonesia	Total: 38.1 percent Old Age, Disability, Death: 6 percent (employee: 2, employer 4) Sickness and Maternity 3 percent (employer: 3 percent) Other: 0.5 percent (employer: 0.5)	
Korea	Total: 9.5 percent Old Age, Disability, Death: 9 percent (employee: 4.5, employer: 4.5) Sickness and Maternity: 2 – 8 percent (employee: 1 – 4, employer: 1 – 4) Other: 1.7 percent (employer: 1.7 percent)	
Australia	Total: 12.7 – 18.7 percent Old Age, Disability, Death: 7 percent (employer: 7)	Conditions for eligibility: Means-tested. Must be actively seeking employment; cannot refuse reasonable job offer. Financed from general revenues. Benefit: A$146 – A$175 (US$93 – US$111) per week. Payable as long as insured remains qualified.
New Zealand		Conditions for eligibility: Means tested. Registered for employment. Financed through general revenues. Benefit: NZ$147.89 (US$106) per week.
South Africa	Unemployment Insurance: 2 percent (employee: 1, employer: 1) Other: 0.2 – 0.4 percent	Eligibility condition: 13 weeks of contribution during past 12 months. Registered for employment. Benefit: Replacement rate of 45 percent Benefit period: 26 weeks.

Sources: Social Security Administration (1998).

employer social security contributions across the board, as in Portugal, or for the long-term unemployed (e.g., in Belgium, France, and Spain), or for youth and low-wage workers (e.g., in Belgium, France, and Ireland).

95. The Jobs Study specifically cited overly generous unemployment insurance (UI) benefits as important contributors to the high level of unemployment in certain countries. The UI system in South Africa is designed to deal with frictional or short-term unemployment. Eligible workers and their employers each pay one percent of wages to the Unemployment Insurance Fund (UIF). Benefits (set at a replacement rate of 45 percent of the last wage received) accrue only to unemployed contributors.[47] One week's benefit is paid for every 6 weeks worked, up to a maximum of 26 weeks' benefit. The replacement rate and the maximum period of benefit payments are low by international standards (see Table 5), and thus it is unlikely that the receipt of UIF benefits discourages job search on the part of unemployed beneficiaries in South Africa.

Active labor market policies and education and training programs

96. The Jobs Study recommended that more active labor market policies (ALMPs) be implemented than passive income support programs, and noted that, if properly targeted and managed, ALMPs could raise the employability of the unemployed. ALMPs improve access to the labor market and jobs; develop job-related skills; and may lead to wage moderation by strengthening the ability of "outsiders" to compete more effectively for jobs.[48]

97. The SDA provides for the setting up of public employment services to facilitate job searches, arrange matches between employers and job seekers, and provide counseling for job seekers. The Presidential Jobs Summit has already initiated similar programs. While it is fair to say that the SDA, the Presidential Jobs Summit, and the EEA (through the employment equity plans that are required to prepare previously disadvantaged workers to fill jobs that they hitherto have not occupied) have made important commitments in the area of ALMPs, careful attention will need to be paid in the implementation of such policies. The Jobs Study warned that international experience had shown that these policies often suffered from poor targeting and other design problems, as well as ineffective delivery and monitoring mechanisms.

---

[47] Workers still excluded from contributing to or receiving benefits from the UIF include those earning above R 69,420, contract workers, piece workers, casual workers working less than eight hours a week, domestic workers, and central government employees.

[48] The Jobs Study noted that countries that rejected the widening of wage differentials as a means of increasing employment would probably have to rely that much more heavily on ALMPs, education, and training policies.

98. The Jobs Study had similar warnings for worker training programs, even while according a high priority to the upgrading of skills and competencies. Thus, while the SDA clearly demonstrates a serious commitment to worker training, there are as yet insufficient details on the national skills development plan or on operational issues concerning the SETAs and learnerships to make any assessment of the likely impact of the worker training initiative.

References

Andrew Levy and Associates (1999) *The Quarterly Wage Settlements Survey.* Johannesburg.

Business South Africa (1998) *Position Paper for the Presidential Jobs Summit.* Pretoria.

Confederation of South African Trade Unions (1998) *Position Paper for the Presidential Jobs Summit.* Pretoria.

Cox Edwards, Alejandra (1993) "Labor Market Legislation in Latin America and the Caribbean" Latin America Regional Studies Program (World Bank), Report No. 31.

Cox Edwards, Alejandra (1996) "Labor Regulations and Industrial Relations in Indonesia." World Bank Policy Research Paper No. 1640.

Gill, Indermit, and Marcelo Neri (1998) "Do Labor Laws Matter? The Pressure Points in Brazil's Labor Legislation". Mimeo.

Guasch, J. Luis (1999) *Labor Market Reform and Job Creation: The Unfinished Agenda in Latin American and Caribbean Countries.* Washington, D.C.: The World Bank.

International Labor Organization (1998) *Yearbook of Labor Statistics.* Geneva: ILO.

International Monetary Fund (1999) *World Economic Outlook, May 1999.* Washington, D.C.: IMF.

Knight, J.B. (1997) "Labor Market Issues in Zimbabwe: Lessons for South Africa", *The South African Journal of Economics 65 (1): 69-98.*

Presidential Commission to Investigate Labor Market Policy (1996) *Restructuring the South African Labor Market.* Pretoria.

Mizala, Alejandra (1998) "La Regulación del Mercado Laboral en Chile: 1975-1995" *Perspectivas 1 (2): 185-214.*

OECD (1994) *The OECD Jobs Study: Facts, Analysis, Strategies.* Paris: OECD.

OECD (1995) *The OECD Jobs Study – Implementing the Strategy.* Paris: OECD.

Social Security Administration (1999) *Social Security Programs Throughout the World – 1999.* Washington, D.C.

Standing, Guy, John Sender, and John Weeks (1995) *Restructuring the Labor market: The South African Challenge.* Geneva: ILO

Statistics South Africa (1999) *The October Household Survey, 1999.* Pretoria

World Bank (1995) Labor and Economic Reforms in Latin America and the Caribbean. Washington, D.C.: The World Bank

III. Trade Policy Developments in South Africa in the 1990s[49]

99. Trade liberalization is an integral part of South Africa's Growth, Employment, and Redistribution (GEAR) strategy. Indeed, the South African economy has opened up substantially during the 1990s, including reductions in both the degree of trade protection and the complexity of the trade regime. These efforts have improved the dynamic efficiency of the economy (see Section IV) and boosted its supply potential. This section provides a detailed description of the trade policy developments in South Africa during the 1990s, including the recent free trade agreements with the European Union (EU) and the imminent agreement with the Southern Africa Development Community (SADC).

A. Trade Policy Prior to the 1990s

100. During the 1960s and 1970s, South Africa's trade regime was characterized by high tariffs and extensive import controls. In response to the perception that growth through import substitution was being exhausted and in the wake of declining manufacturing production and trade, attempts were made to mitigate the anti-export bias of the system. The focus, however, was on export promotion measures rather than on liberalization of the import regime. It was only in 1983, when about 77 percent of imports were subject to direct import controls, that the first systematic attempt was made to dismantle some of the controls, and in 1985 South Africa switched from a positive list of permitted imports to a negative list of prohibited imports covering about 23 percent of imports (see General Agreement on Tariffs and Trade (1993)).

101. However, with the imposition of financial sanctions and the debt standstill in 1985, balance of payments pressures halted, and even reversed, progress on trade liberalization. An import surcharge of 10 percent was introduced in 1985, which was increased to 60 percent on some items in 1988, and by 1990 there were three rates (10 percent, 15 percent, and 40 percent) for the surcharge. During the 1980s, a number of export promotion schemes were introduced in an attempt to offset the anti-export bias caused by the protectionist policy. In 1990, these were consolidated into one scheme—the Generalized Export Incentive Scheme (GEIS)—that provided a tax-free subsidy to exporters related to the value of exports, the degree of processing of the exported product, the extent of local content embodied in exports, and the degree of overvaluation of the rand.

102. In terms of import controls, 15 percent of tariff lines were affected by them by 1992, with great sectoral variation; while most sectors were relatively free of controls, some sectors were highly restricted, including agriculture (74 percent of tariff lines), food, beverages, rubber, and tobacco (about 90 percent), and clothing (59 percent). In addition, the trade regime was highly complex. By the end of the 1980s, South Africa had the most tariff lines

[49] Prepared by Arvind Subramanian.

(greater than 13,000), most tariff rates (200 ad valorem equivalent rates),[50] the widest range of tariffs, and the second-highest level of dispersion (as measured by the coefficient of variation) among developing countries (see Belli, Finger, and Ballivian (1993)). In sum, South Africa had a highly distorted system of protection (Table 6).

B. Trade Policy in the 1990s

103. Liberalization started to gain momentum in the early 1990s, as reflected in a consultative process established under the auspices of the tripartite National Economic Forum involving government, labor, and organized business. As a result, South Africa adopted a two-pronged approach to trade liberalization during the 1990s. These included (i) multilateral trade liberalization in the context of the Uruguay Round of trade negotiations and (ii) unilateral trade liberalization.

104. **Multilateral trade liberalization**. In the context of the Uruguay Round, South Africa made a tariff offer phased over five years that took effect on January 1, 1995 (except in the case of three sectors where the reductions were phased over a longer period (see below)). This offer was publicly announced in 1994 after extensive consultations with civil society within South Africa. The offer aimed to

- reduce the number of tariff lines (from over 13,000) at the six-digit level by 15 percent in the first year and by 30 percent or more by 1999;
- convert all quantitative restrictions (QRs) on agricultural imports to bound ad valorem rates, and lower all bound agricultural tariffs by 21 percent on average and reduce export subsidies by 36 percent;
- increase the number of bindings[51] on industrial products from 55 percent to 98 percent; replace all QRs and formula duties with tariffs, and reduce the number of tariff rates to six—0 percent, 5 percent, 10 percent, 15 percent, 20 percent, and 30 percent—with the exception of the "sensitive" (textiles, clothing, and motor vehicles) industries;
- liberalize the sensitive industries over an eight-year period; and

[50] The 200 ad valorem equivalent rates comprised 35 ad valorem rates and about 2,865 tariff lines with either formula or specific rates (Belli, Finger, and Ballivian, 1993).

[51] A binding represents a legal commitment to not raise tariffs beyond the level embodied in the binding.

Table 6. South Africa: Trade Regime, 1990 and 1998
(In percent, unless otherwise indicated)

	1990	1998
Tariffs		
Manufacturing		
Maximum tariff	1,389	72
Average import-weighted tariff	28	10
Average unweighted tariff	30	14
Number of tariff bands	> 200	72
Standard deviation	43	15
Number of tariff lines 1/	>13,000	7,814
Percent of tariff lines with non-ad valorem duties 1/	28	26
Range of effective protection 2/	189 to -411	204 to -2
Average import-weighted surcharge 3/	6	0
Import surcharge bands	10, 15, and 40	Eliminated
Agriculture		
Average tariff	25	2.2
Average import surcharge	8	0
Export subsidy 4/	17	Eliminated
Export taxes		
Diamonds	15	15
Quantitative restrictions on imports 5/	15	Virtually eliminated
of which:		
Agriculture	74	Virtually eliminated
Manufacturing	14	Virtually eliminated
Quantitative restrictions on exports; goods 3/	Diamonds 21 agricultural commodities	Diamonds
Memorandum items:		
Trade tax revenue as share of total revenue	7.9	4.0
Import taxes as share of imports	10.8	4.1
Export subsidies as a share of GDP	0.3	0.0

Sources: GATT (1993); WTO (1998); IDC South Africa; and Belli et. al. (1993).

1/ The figure for 1998 refers to June 1997.
2/ At ISIC three-digit level; excludes import surcharge.
3/ The figure for 1990 refers to 1992.
4/ Actual subsidy disbursements were 2.7 percent of exports in 1990/91.
5/ The figure for 1990 refers to 1992. As percent of total tariff lines (other than those maintained for health, security, and environmental reasons).

- phase out the GEIS by 1997.[52]

105. **Unilateral trade liberalization.** South Africa also announced, in 1994, a schedule of unilateral tariff liberalization expiring in 1999 that went beyond the Uruguay Round commitments. As a result, its average (import-weighted) tariffs in manufacturing declined from 15.8 percent in 1994 to 10.3 percent in 1998.[53] The current average (import-weighted) tariff is below that bound in the World Trade Organization (WTO) in 2004 by more than 5 percentage points,[54] although the "water in the tariff" varies considerably between sectors.

106. As a result of these changes, South Africa's trade regime has been considerably liberalized since the early 1990s. Virtually all quantitative restrictions have been eliminated, including those operating through agricultural marketing boards; also, the tariff regime has been rationalized, with the number of lines having been reduced from over 13,000 in 1990 to about 7,900 in 1998 and the number of tariff bands from well over 200 to 72. In addition, the tariff regime was simplified, as the number of lines carrying formula duties (which acted like variable import levies) was reduced from 1,900 in 1993 to 28 in 1997, and the number of lines facing specific tariffs was reduced from 500 to 227, respectively.

C. Recent Trade Agreements

The EU – South Africa agreement

107. The European Union (EU) - South Africa free trade agreement went into force on January 1, 2000.[55] The agreement embodies the principle of asymmetry in that liberalization by the EU will be faster (mostly over a three-year period, compared with a twelve-year period for South Africa) and broader in coverage (encompassing 95 percent of all imports, compared with 86 percent for South Africa) than that by South Africa.

---

[52] The GEIS was altered in 1995 in two ways: the magnitude of support was scaled down, and payments under it were made taxable. In 1996, the GEIS was limited to fully manufactured products, and in July 1997 it was entirely eliminated.

[53] In 1990, the average (unweighted) tariff was about 30 percent, while the average (weighted) tariff including import surcharges was 36 percent. These surcharges were eliminated in 1994.

[54] The average bound tariff in the WTO in 2004 will be about 16 percent.

[55] A controversial wine and spirits accord, which addresses the use by South Africa of appellations such as "port" and "sherry," was to have been part of the overall agreement but is still being negotiated; it will move forward on its own schedule, delinked from the agreement.

108. Regarding the liberalization of EU markets, the elimination of tariffs on 91 percent of all industrial imports from South Africa will take place within three years, and the liberalization will cover almost all industrial imports within ten years. It should be noted, however, that the incremental liberalization by the EU will cover about 13 percent of imports, because currently about 78 percent of imports from South Africa already enter the EU duty free. In agriculture, the EU's liberalization will be both partial and back-loaded, as restrictions would continue to apply to about 40 percent of South Africa's agricultural exports to the EU by the end of the ten-year transition period.

109. South Africa will eliminate tariffs affecting 86 percent of the value of imports from the EU (comprising 73 percent of all tariff lines in the industrial sector) over twelve years, with about three-fourths of this taking place within the first three years. In addition, tariffs will be reduced, but not eliminated, on an additional 3 percent of imports. It is noteworthy that the sectors that are exempted from the tariff elimination account for about one-fourth of all tariff lines and are sectors with the highest tariffs. These sectors are textiles, with an average tariff rate of 29 percent (which compares with an average tariff rate of 14.4 percent in the manufacturing sector), clothing (57 percent), footwear (34 percent), and automotive products (38 percent). In agriculture, South Africa will eliminate its tariffs on about 81 percent of agricultural imports from the EU, with less than half of this liberalization taking place within the first three years of the agreement.

The SADC agreement

110. South Africa has formally ratified the Trade Protocol of the SADC, as have six other SADC countries (8 out of the original 12 SADC member states need to ratify the agreement for it to come into force). South Africa is willing to implement the agreement unilaterally early next year, but only if an acceptable consensus can be reached on the rules of origin. Negotiations on this issue are ongoing. South Africa's offer to its SADC partners also embodies the principle of asymmetry, as South Africa will liberalize faster than the other SADC countries. According to statistics compiled by the Department of Trade and Industry, 99 percent of tariff lines (97 percent of SADC imports) will qualify for duty-free access to South Africa by 2005, with duties on 63 percent of tariff lines (69 percent of SADC imports) eliminated upon the implementation of the agreement.

111. However, in order to qualify for duty-free access to South Africa, imports of textiles, clothing, leather, footwear, and automotive products will need to demonstrate sufficient processing and substantial transformation according to criteria set out in the following proposed rules of origin. First, all primary products, including agricultural products, must be wholly obtained from each member state. Second, processed industrial products can acquire originating status provided that the imported materials have undergone sufficient transformation such that (i) the c.i.f. value of those materials does not exceed 60 percent of the total cost of the materials used in the production of the goods; or (ii) the value added resulting from the process of production accounts for at least 35 percent of the ex-factory cost of the goods; or (iii) there is a change in the tariff heading of a product arising from a processing carried out in the nonoriginating materials.

D. Remaining Issues

112. Despite the considerable strides taken in liberalizing the economy, three issues with South Africa's tariff regime and trade policy still need to be addressed. First, the tariff regime continues to be very complex. In relation to a number of comparator countries, several features of the tariff regime, such as the number of tariff rates and percentage of tariff lines carrying non–ad valorem rates, are still high (see Table 7).

Table 7: Comparison of South Africa's Trade Regime with Selected Countries

	South Africa 1997	Brazil 1996	Chile 1996	Australia 1996	New Zealand 1997	Malaysia 1997	Zambia 1997	Uganda 1997
Number of tariffs (including specific)	**72**	40	1	26	n.a.	n.a.	3	3
Non–ad valorem tariffs (as percent of all tariffs)	**26**	0	0	1	4	7	n.a.	n.a.
Range	**0-72**	0-70	0-11	0-40	0-30	0-200	0-25	0-20
Collection efficiency (percent)	**53**	62	76	78	84	36	60	51
Simple average tariff (percent)	**15**	13	11	6	6	8	14	9
Standard deviation	**18**	10	0	9	8	14	9	11
Fund's trade restrictiveness index	**6**	5	2	1	1	5	3	5

Sources: OECD, *Indicators of Tariff and Non-Tariff Trade Barriers*, 1997; World Trade Organization, *Trade Policy Reviews*; and Fund staff estimates.

113. Second, a number of key sectors, such as textiles and clothing, footwear, and automotive products, remain highly protected. Further tariff reductions in these sectors would help raise the economy's efficiency.

114. Third, while the number of discretionary tariff changes has been reduced, South Africa has become a major user of antidumping actions. Table 8 shows that, while South Africa was a restrained user of antidumping actions during the period 1991-94, it has become one of the most frequent users of antidumping actions in the world since then. Continued heavy use of antidumping actions may eventually undermine the beneficial impact of trade liberalization that South Africa has experienced thus far.

Table 8: Antidumping Initiations by Economy Taking Action

Economy	Number of Antidumping Initiations		Index of Antidumping Initiations 1995-98 (Per dollar of imports, United States=100) 1/
	1991-94	1995-98	
	Developed Economies		
Australia	213	77	1096
Canada	84	39	199
European Union	135	122	210
United States	226	94	100
All developed economies	678	353	74
	Developing Economies		
Argentina	59	72	2627
Brazil	59	54	871
India	15	78	1875
Korea	14	34	204
Mexico	127	31	275
South Africa 2/	**16**	**72**	**2324**
All developing economies	394	509	313

Source: WTO Secretariat, Rules Division, Antidumping Measures Database.

1/ Based on numbers of antidumping initiations 1995-98 and values of merchandise imports for 1996.
2/ The figure in the 1995-98 column refers to 1995-97.

References

Belli, Pedro, J.M. Finger, and Amparo Ballivian, 1993, "South Africa: A Review of Trade Policies," World Bank Southern Africa Department Discussion Paper No. 4 (Washington: World Bank).

General Agreement on Tariffs and Trade, 1993, *Republic of South Africa: Trade Policy Review* (Geneva: General Agreement on Tariffs and Trade).

World Trade Organization, 1998, *Republic of South Africa: Trade Policy Review*, (Geneva: World Trade Organization).

IV. Trade Liberalization and Productivity in South Africa[56]

A. Introduction

115. The purpose of this chapter is to examine the empirical relationship between trade and total factor productivity (TFP) in South Africa,[57] where the hypothesis is that enhanced trade in recent years has improved the efficiency of the economy. The study is important from a policy perspective, as trade liberalization constitutes an important element in the government's efforts to boost the underlying supply capacity of the economy. In addition, the study briefly reviews the research literature in this area, and discusses whether and how the South African experience differs from that of other countries.

116. South Africa affords the possibility of a rich case study on account of the substantial variation in the degree of openness over time (owing both to the lifting of external sanctions and trade liberalization)[58] and in trade policy orientation and productivity performance across sectors. The availability of disaggregated data—on capital stock, employment, and trade policy variables—permits such questions to be examined in a thorough and comprehensive manner. Thus, a distinctive feature of the paper is that the relationship between trade and TFP growth is examined from both a time-series and a cross-sectional perspective.

117. The main finding of this study is that there is a significant positive relationship between trade and TFP growth both over time and across sectors in South Africa. The relationship holds after controlling for a set of other determinants of TFP growth and is robust to various potential statistical problems.

118. The rest of the paper is organized as follows. Section B briefly reviews some earlier studies related to trade and growth. Section C discusses methodological issues and describes the data, while the results are presented in Section D. Section E offers some concluding observations.

B. Previous Research

119. In theoretical models, the impact of trade liberalization on economic growth is either absent or ambiguous. In a conventional neoclassical growth model, trade does not affect the equilibrium or steady state rate of output growth because, by assumption, growth is

---

[56] Prepared by Gunnar Jonsson and Arvind Subramanian.

[57] Throughout this paper, the term "trade" encompasses two distinct concepts: the first, **trade openness**, will refer to **trade outcomes**, while the second, **trade liberalization** will denote explicitly the reduction of domestic **trade policy** barriers.

[58] See Section III for a detailed description of developments in South Africa's trade regime.

determined by an exogenously given technological progress.[59] In two-sector models of this kind, trade policy affects the allocation of resources between sectors and, hence, the steady state level of savings and capital accumulation. This relationship can have a one-off effect on the steady state level of output (which can be positive or negative depending on how savings and capital accumulation are affected by trade policy), but not on the long-run rate of growth. Nevertheless, even in the neoclassical model, trade policy can have a transitional impact on growth as the economy converges toward the steady state.[60]

120. However, in endogenous growth models, the impact of trade liberalization on output growth can be positive or negative, hinging on model-specific assumptions. Increased trade per se can have a number of generalized positive impacts.[61] For example, trade enables a country (i) to employ a broader variety of intermediate goods and capital equipment, which could enhance the productivity of its other resources; (ii) to acquire technology developed worldwide, especially in the form of embodied capital goods; (iii) to produce and consume a greater variety of goods; and (iv) to improve the efficiency with which resources are used and thereby help to change market structures, reduce markups, and impart dynamic efficiency benefits. However, as emphasized by Rodriguez and Rodrik (1999), the impact of trade policy changes cannot be unambiguously signed. If the resource allocation effects of trade policy changes promote sectors or activities that generate more long-run growth, the impact is positive, and negative otherwise. The question is then really an empirical one of determining the impact of trade policy in specific cases.

121. The empirical evidence on trade and economic growth includes cross-country as well as within-country studies. The first set of studies has focused on the direct impact of trade on growth in output or in TFP,[62] and the broad conclusion is typically that increased trade has a positive impact on economic growth. However, Rodriguez and Rodrik (1999) have questioned the results arguing that the studies (i) examine only whether openness, defined in terms of outcomes, helps growth, rather than whether more liberal trade policy helps growth,

---

[59] In static models without market imperfections (such as monopolistic market structures, internal and external economies of scale, or other distortions), trade restrictions reduce the **level** of real GDP (equivalent to welfare when measured at world prices). The presence of imperfections opens up a plethora of possibilities in which the effects of trade policies are typically indeterminate, depending on the prior distortion (see Bhagwati (1971)).

[60] The distinction between the transitional path and the steady state is well-defined in theory but less easily applied empirically. If transitions are sufficiently long, the actual data could exhibit growth effects from trade policy changes.

[61] See Grossman and Helpman (1991) and the references therein.

[62] See, for example, Dollar (1992), Sachs and Warner (1995), and Coe, Helpman, and Hoffmaister (1997).

and (ii) do not incontrovertibly support the conclusions because they mismeasure trade policy, or because the trade policy variable employed actually is picking up other effects, such as macroeconomic stability or regional dummies.

122. The within-country studies are based on either plant-level data or industry-level data.[63] Although it is difficult to summarize the results of this strand of literature, it indicates that the causal link between trade and TFP is less evident in the data. For example, Bernard and Jensen (1998) suggest that, while trade orientation and efficiency are correlated, the causation appears to run from the latter to the former, in the sense that efficient firms tend to self-select into export markets rather than that openness leads to increased efficiency.

C. Methodology and Data

123. As indicated above, some of the empirical cross-country (or cross-sectional) studies have focused on the determinants of growth in TFP rather than in real GDP. The advantage with such an approach is that there is a stronger presumption that growth in TFP is positively related to trade. As discussed above, trade policy might also affect factor accumulation, but in ways that are theoretically ambiguous. Therefore, a study focusing exclusively on output growth would be unable to isolate and capture the effects working through increased efficiency.

124. In addition to using different measures of trade policy to explain fluctuations in TFP growth, previous studies have included various factors that are assumed to be conducive to technological development. These include, for example, investment in machinery and equipment as a share of total investment, research and development (R&D) activities, measures of human capital, terms of trade developments, macroeconomic stability, efficiency of the domestic financial system, and other institutional variables.[64] In the current study, we followed a fairly eclectic and pragmatic approach in narrowing the possible determinants of South Africa's TFP growth. Parsimony in the choice of explanatory variables was also dictated by the relatively small sample size.

Data used in time-series analysis

125. The time-series variations in the data were examined for the period 1971-97 (Figure 7).[65] Two measures of TFP, based on alternative approaches to measuring the factor shares, were used (see Fajgenbaum and others (1998)): one calculates these shares using the

---

[63] See, for example, Tybout (1992), Bernard and Jensen (1998), and Harrison (1994).

[64] See DeLong and Summers (1991), Collins and Bosworth (1996), Rodriguez and Rodrik (1999), and Edwards (1998).

[65] See Appendix for data description and sources.

national income accounts, while the other (*TFP-alt*) employs the methodology developed in Sarel (1997).[66] Because the latter approach yields consistently smaller capital shares than the former and because capital growth exceeds labor growth, the TFP series resulting from the Sarel methodology is at a consistently higher level than the series based on the national income accounts. In terms of movements over time, however, the two series are fairly similar.

126. Openness was measured as the ratio of the sum of real imports and real exports of goods and nonfactor services to real GDP.[67] The use of this variable is open to the Rodriguez and Rodrik (1999) critique that it measures an outcome and, hence, may not have policy implications. The preferred estimation strategy in this view would be to use direct measures of trade policy. However, it is difficult to compute a reliable series of "trade policy" over the sample period, especially because of the pervasiveness of nontariff barriers until the late 1980s.

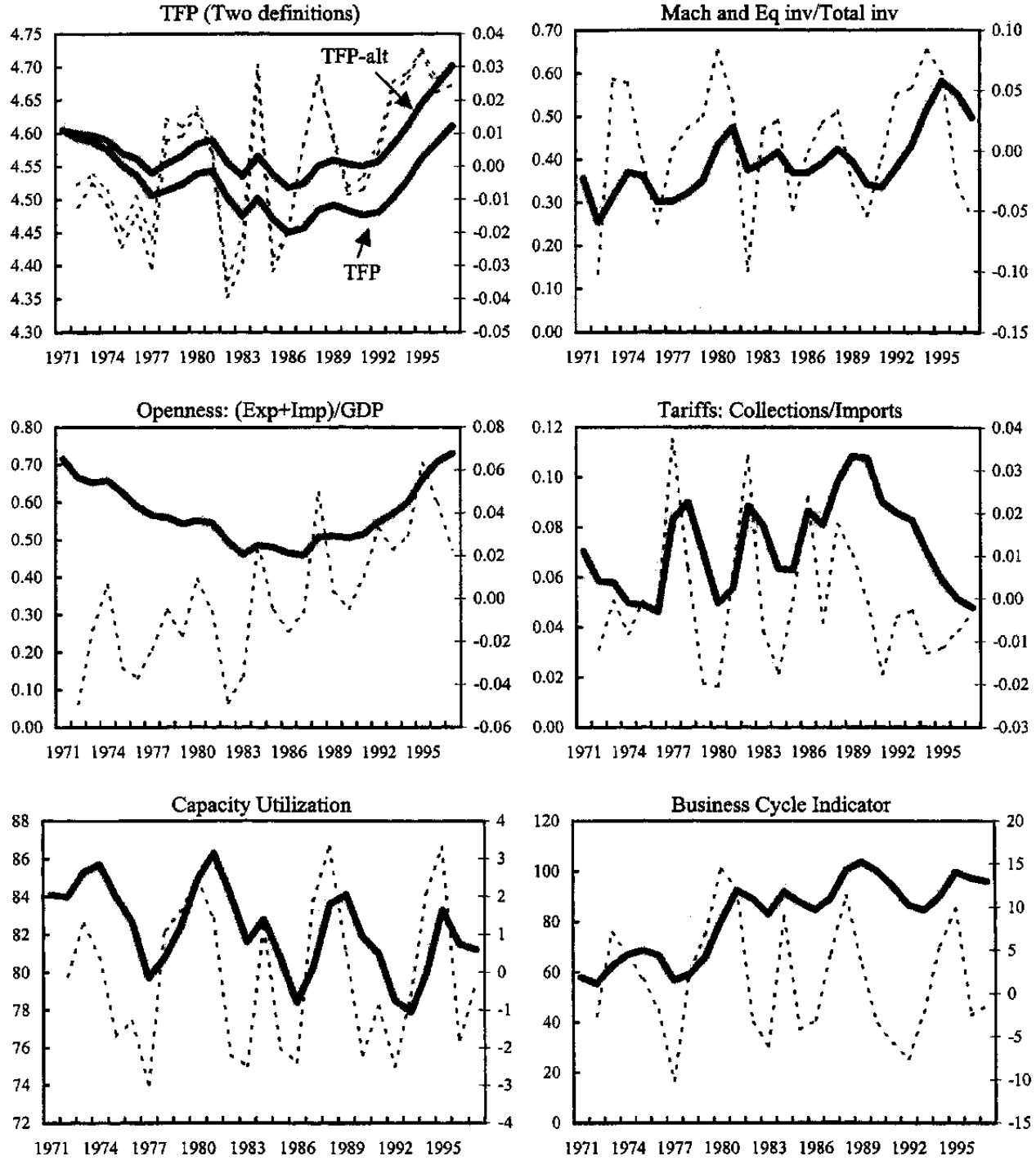
127. Time series data for R&D in South Africa are not easily available. However, following DeLong and Summers (1991), the share of investment in equipment and machinery in total investment was used as the proxy for technology. Insofar as South Africa does not undertake significant amounts of R&D activity, it is expected that the bulk of the R&D is embodied in capital equipment, especially that imported from abroad. By looking at total investment in machinery and equipment, the specification implicitly aggregates R&D undertaken at home and abroad and assumes that the two have similar effects on TFP. An alternative approach that could have disentangled the effects of foreign and domestic R&D would have been to use separate measures for domestic and imported capital goods (or even construct an imported R&D variable, à la Coe, Helpman, and Hoffmaister (1997)), but this was difficult to do because of the absence of data on imported capital goods for the entire

---

[66] Sarel's (1997) methodology involves computing sector-specific capital shares based on data for a cross section of OECD and developing countries, and then using these to compute the economy-wide capital share. Under this approach, capital shares vary across countries only to the extent of differences in the sectoral composition of output.

[67] As alternatives, we used this ratio in nominal terms, as well as the ratio of exports and imports of goods alone to GDP; the results were similar but less robust.

Figure 7. South Africa: Time-Series Data, 1971-97
(Levels (solid lines) on left-hand scale; first-difference (dashed lines) on right-hand scale)



Sources: South African Reserve Bank, *Quarterly Bulletin*; and Fund staff estimates.

sample period.[68]

128. We also tried alternative specifications that included a proxy for human capital, but this variable was dropped subsequently as the proxy was likely mismeasured.[69] Similarly, exogenous influences, such as terms of trade developments and the aggregate capital-labor ratio, were initially included in the analysis, but they did not turn out to be important. While recent work in explaining growth in East Asia has focused on the role of the financial sector and the efficiency of its intermediation, this aspect was not explored as it seemed less important in the case of South Africa, which has had well-developed and well-regulated financial institutions for a long time.[70]

Data used in cross-sectional analysis

129. The cross-sectional analysis is based on pooled data for the years 1990-94 and 1994-98 for 24 manufacturing industries (defined at the International Standard Industrial Classification three-digit level). TFP growth was defined in the same way as in the time-series analysis, with the nominal factor shares for each sector—obtained from industry-specific data—used to weight the growth in factors (see Appendix for further details). The trade variable (*Tariff*) is a policy variable, namely, the sum of all import charges (tariff and import surcharge) for each sector. Data were available for the years 1990, 1994, and 1998, although for three sectors (textiles, clothing, and motor vehicles) the announced tariffs for 2002 were used, rather than the actual 1998 tariffs, in order to capture any forward-looking behavior.[71]

---

[68] These data were only available from 1979.

[69] The Nehru-Swanson-Dubey (1995) human capital stock series does not cover South Africa. The Barro-Lee (1997) series does cover South Africa but exhibits anomalous movements, which raise doubts about its quality. In private correspondence, the authors agreed that this series required further refinement.

[70] Macroeconomic policy could also have been considered as a possible determinant of TFP growth, but this variable was ignored as it is, in general, more important in influencing capital accumulation than TFP growth (see Collins and Bosworth (1996)).

[71] As explained in Section III, under the Uruguay Round commitments, South Africa announced tariff reductions for these three sectors that would extend to the 2002.

D. Results

Time-series evidence

130. The time-series properties of the variables were analyzed before any regressions were run. The relatively small number of observations implies that traditional nonstationarity tests do not have great power, especially when several lags are included in the models. Nevertheless, the (augmented) Dickey-Fuller tests indicate that total factor productivity (*TFP*), share of machinery and equipment investment in total investment (*MachInv*), and openness (*Open*) are all integrated of order 1 (see Table 9); the first differences of *TFP* and *MachInv* appear to be stationary, while the first difference of *Open* appears to be trend stationary.[72] Given these nonstationarity results, the long-run relationships among the variables was estimated using the co-integration tests proposed by Johansen (1988) and Johansen and Juselius (1990).

131. The results from the Johansen tests (see Table 10) clearly indicate that there exists one long-run co-integrating vector among *TFP*, *Open*, and *MachInv*. Moreover, the coefficients of this vector have the expected signs: *TFP* is positively related to *Open* and *MachInv*,[73] and all three variables contribute significantly to the co-integrating vector.[74] An examination of the speed of convergence coefficients (the alpha matrix) indicates that both *TFP* and *Open* are "error correcting," whereas *MachInv* can be treated as weakly exogenous. The absence of a weak exogeneity result for *Open* implies that the estimation of a single first-difference equation with *TFP* as the dependent variable could be problematic. However, as will be discussed below, this apparent absence of weak exogeneity for the openness variable turns out to be a small-sample problem rather than a true simultaneity problem, as various stability tests clearly show that only *TFP* is error correcting.

132. Hence, in a second step, a single-equation error-correction model was used to examine the annual fluctuations in the variables (see Table 11). The fit of these regressions was remarkably good, considering the small sample size. Moreover, the estimated significant,[75] while the estimated coefficient for the lagged error-correction term (*EC*) is

---

[72] Broadly similar results were obtained when the Johansen procedure was used to test for the order of integration of the variables.

[73] One lag was included in the co-integration models.

[74] Using the alternative measure of TFP (*TFP-alt)* generated qualitatively the same results (bottom panel of Table 10).

[75] The first lags of the variables were insignificant and therefore dropped.

coefficients for both *DOpen*[76] and *DMachInv* have the expected positive sign and are negative, as expected, and significant.

133. Recursive regressions show that the estimated coefficients in the error-correction model are stable, and no trend breaks could be detected (see top panel of Figure 8). These results tend to support the case for treating the openness variable as weakly exogenous. Indeed, recursive regressions using *DOpen* as a dependent variable show that the estimated

Table 9. Augmented Dickey-Fuller Tests of Unit Root, 1971-97

	Levels (max four lags)			First Differences (max four lags)			Additional Regressors
Variable	Obs.	Lags 1/	*t*-value 2/	Obs.	Lags 1/	*t*-value 2/	
TFP	22	1	-0.99	21	0	-3.00	Constant
TFP-alt	22	0	1.10	21	0	-2.97	Constant
Open	22	4	-0.91	21	3	0.04	Constant
MachInv	22	1	-2.33	21	1	-4.12*	Constant
Capacity	22	1	-3.82*	21	4	-4.95*	Constant
TFP	22	0	-0.16	21	0	-3.70	Constant and trend
TFP-alt	22	0	0.06	21	0	-3.60	Constant and trend
Open	22	2	1.43	21	1	-5.23*	Constant and trend
MachInv	22	1	-3.38	21	1	-3.84*	Constant and trend
Capacity	22	4	-4.64*	21	4	-4.80*	Constant and trend

	Levels (no lags)			First Differences (no lags)			Additional Regressors
Variable	Obs.	Lags	*t*-value 2/	Obs.	Lags	*t*-value 2/	
TFP	26	0	-1.10	25	0	-3.06*	Constant
TFP-alt	26	0	0.69	25	0	-3.03*	Constant
Open	26	0	-0.75	25	0	-2.95	Constant
MachInv	26	0	-1.50	25	0	-4.51*	Constant
Capacity	26	0	-2.34	25	0	-3.81*	Constant
TFP	26	0	0.23	25	0	-3.95*	Constant and trend
TFP-alt	26	0	0.38	25	0	-4.04*	Constant and trend
Open	26	0	0.37	25	0	-4.47*	Constant and trend
MachInv	26	0	-2.65	25	0	-4.28*	Constant and trend
Capacity	26	0	-2.68	25	0	-3.72*	Constant and trend

Note: See Appendix for definitions of variables.

1/ The lag length was chosen by using the Schwarz Bayesian Criterion assuming a maximum of 4 lags.
2/ The *t*-value is the test statistic from the (Augmented) Dickey-Fuller test; * indicates rejection of the null hypothesis of nonstationarity at the 5-percent significance level.

[76] All variables beginning with the operator "*D*" refer to the change in the underlying variable.

Table 10. Cointegration analysis of TFP, Openness, and Machinery Investment

Rank	Eigenvalue	Lambda	Critical Value (95%)	Trace	Critical Value (95%)
r = 0	0.67	29.08**	21.0	36.92**	29.7
r <= 1	0.18	5.22	14.1	7.85	15.4
r <= 2	0.10	2.63	3.8	2.63	3.8

Standardized Eigenvectors

TFP	*Open*	*MachInv*
1	**-0.52**	**-0.32**
-1.92	1	-0.28
3.57	-8.70	1

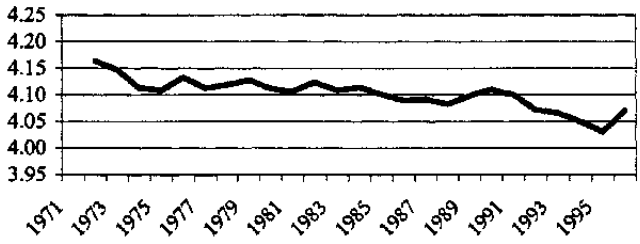
Tests for significance of a given variable

	TFP	*Open*	*MachInv*
Chi-sq (1)	8.91**	7.59**	17.44**
p-value	(0.00)	(0.01)	(0.00)

Tests for Weak Exogeneity

	TFP	*Open*	*MachInv*
Chi-sq (1)	9.77**	10.76**	0.30
p-value	(0.00)	(0.00)	(0.58)

Cointegrating Vector



As Above, but with Alternative Measure of TFP (*TFP-alt*)

Rank	Eigenvalue	Lambda	Critical Value (95%)	Trace	Critical Value (95%)
r = 0	0.57	21.77*	21.0	32.08*	29.7
r <= 1	0.32	10.11	14.1	10.31	15.4
r <= 2	0.01	0.20	3.8	0.20	3.8

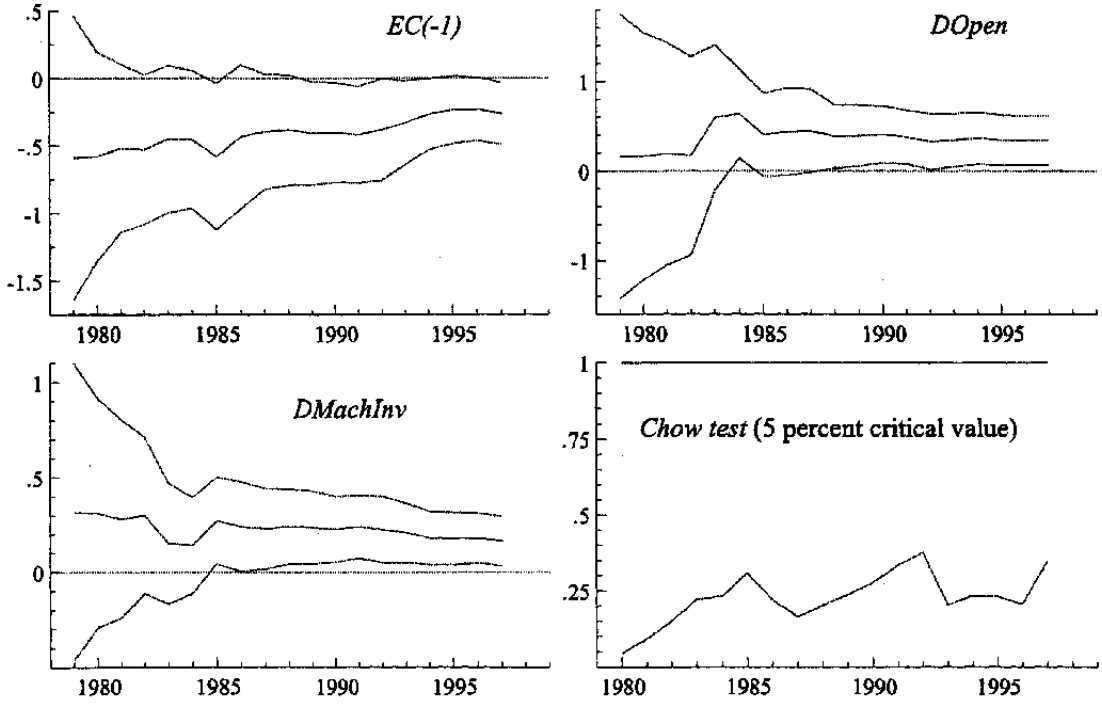
Standardized Eigenvectors

TFP-alt	*Open*	*MachInv*
1	**-0.38**	**-0.65**

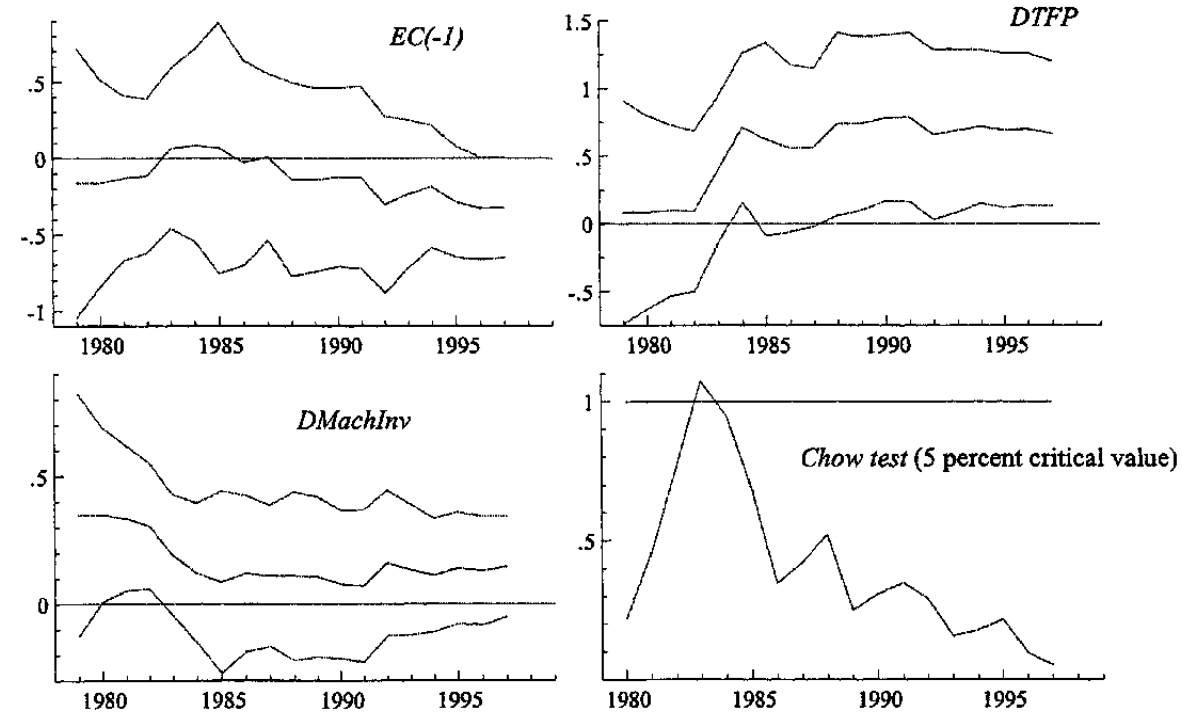
Notes: See Appendix for definitions of variables. * and ** indicate rejection of the null hypothesis at the 5-percent and 1-percent significance level, respectively.

Figure 8. Stability Tests of Error-Correction Model
(Beta-coefficients ± 2 standard errors and Chow tests)

DTFP as Dependent Variable



DOpen as Dependent Variable



coefficient on the error-correction term is highly unstable and shifts sign over time, indicating that this variable is not really error correcting and thus should be treated as weakly exogenous (bottom panel of Figure 8). Furthermore, when the long-run Johansen equation was estimated using the alternative definition of TFP, weak exogeneity of the openness variable could not be rejected at the 5 percent significance level, and the TFP variable remained error correcting. Taken together, these findings are broadly supportive of the proposition that causation runs from increased openness to higher TFP growth, rather than the converse.

134. One potentially important problem with the short-run growth regressions is the sensitivity of the measured level of TFP to the business cycle. For example, if it is difficult to adjust the capital stock in the short run, and/or if the labor market is inflexible, leading to labor-hoarding behavior on the part of firms, the measured level of productivity would be higher during booms and lower during recessions. Such an omitted-variable problem could, in turn, generate a simultaneity problem; depending on the magnitude of the export and import elasticities, output fluctuations related to the business cycle could lead to fluctuations in import and export shares of GDP, that is, openness.

135. To deal with this problem, the change in capacity utilization in the manufacturing sector (*DCapacity*) was added as an independent variable.[77] As expected, the estimated coefficient on this variable came out positive and strongly significant, indicating that the growth rate in *TFP* in a particular year does not necessarily reflect an improvement in technology. Still, the coefficients on *DOpen* and *EC* were virtually unaffected by the inclusion of *DCapacity*. In contrast, the coefficient on *DMachInv* drops sharply and becomes insignificant, suggesting that firms invest less in machinery and equipment during recessions.

136. As emphasized by a number of authors (e.g., Rodriguez and Rodrik, (1999)), openness is somewhat difficult to interpret in a growth regression, as it captures a number of different aspects that contribute to the outcomes; these include not only actual trade policy variables such as tariffs and surcharges, export incentives, and quantitative restrictions, but also variables such as size, geography, foreign demand conditions, transport costs, and preferences. In an attempt to control for some of these aspects, two additional variables were included in the specification: a dummy variable for the period 1985-92, during which South Africa was subject to trade and financial sanctions (*Dum*8592), and the trade policy variable *DTariff*, defined as the change in the ratio of import duties and surcharges to import value.

---

[77] The level of capacity utilization, a business cycle indicator proposed by the Economics Department of the South African Reserve Bank, and fluctuations in the terms of trade were used as alternative measures. The results were qualitatively the same, in the sense that the estimated coefficients on *DOpen* and *DMachInv* were virtually unaffected by the choice of the proxy for cyclical fluctuations.

Table 11. The Error-Correction Model: TFP Growth and Openness, 1971-97

	Dependent Variable: TFP growth						
Constant	1.08	1.02	0.90	1.00	0.89	0.82	0.77
	[2.29]	[2.89]	[2.47]	[2.88]	[2.48]	[2.89]	[2.75]
EC(-1) 1/	-0.26	-0.25	-0.22	-0.24	-0.22	-0.20	-0.19
	[-2.29]	[-2.89]	[-2.46]	[-2.88]	[-2.48]	[-2.89]	[-2.74]
DOpen	0.34	0.27	0.32	0.26	0.31	0.31	0.34
	[2.50]	[2.60]	[2.87]	[2.54]	[2.75]	[3.55]	[3.82]
DTariff				-0.17	-0.16	-0.19	-0.17
				[-1.39]	[-1.27]	[-1.62]	[-1.41]
DMachInv	0.16	0.07	0.04	0.05	0.03		
	[2.52]	[1.21]	[0.77]	[0.92]	[0.56]		
DCapacity		0.38	0.37	0.36	0.35	0.40	0.37
		[4.18]	[4.06]	[4.08]	[3.96]	[4.86]	[4.51]
*Dum*8592			-0.004		-0.004		-0.005
			[-1.16]		[-1.03]		[-1.29]
DW statistic	2.07	2.06	2.04	2.18	2.11	2.21	2.13
R^2	0.78	0.88	0.89	0.89	0.90	0.89	0.90
Number of obs.	25	25	25	25	25	25	25

Note: See Appendix for definitions of variables. *t*-statistics in brackets.

1/ The error-correction term is derived from the cointegration relation among TFP, Open, and MachInv.

137. These variables are clearly not an ideal measure of the annual change in trade policy in South Africa. Nevertheless, both of their estimated coefficients have, as expected, negative signs, indicating that TFP growth was somewhat lower during the sanctions period and during the years when tariffs were increased. However, the coefficients were in general insignificant or only marginally significant. Moreover, the estimated coefficient on *DOpen*—which in this context should be interpreted as fluctuations in imports and exports that are not driven by the sanctions or changes in tariff collections—remains positive and strongly significant. Likewise, the coefficient on *EC* is virtually unaffected by the inclusion of the additional variables.

138. To summarize, the time-series data indicate that there exists a robust long-run relationship among TFP, the degree of openness (measured as imports plus exports over GDP), and the share of machinery and equipment investment in total investment. In addition, annual growth in TFP is positively (and significantly) related to contemporaneous changes in openness, and temporary deviations from the long-run relationship are restored primarily by adjustments in the level of TFP, rather than through changes in imports and exports or in investment in equipment and machinery. The quantitative effects seem to be quite large. The estimated coefficients indicate that a 10 percentage point increase in openness is associated with an increase in TFP by 5 percent in the long-run. Similarly, an increase in the share of machinery and equipment investment of 10 percentage points is associated with an increase in TFP by about 3 percent in the long run. The coefficient on the error-correction term indicates that nearly one-fourth of a given deviation from the long run equilibrium is adjusted within one year by changes in TFP.

Cross-sectional evidence

139. The evidence from the cross-sectional analysis corroborates the time-series results. The focus is on how variations in TFP growth across 24 different manufacturing sectors are related to tariff reductions during the period 1990-98. There are three advantages with this approach: first, the problem in separating true technological process from aggregate demand-related effects is mitigated, as aggregate shocks affect all sectors; second, the number of observations for measuring the long-run effects is greatly increased; and third, the independent variable is actual trade policy (import tariffs) rather than trade outcomes. As mentioned earlier, it is difficult to measure trade policy—both conceptually[78] and empirically—at the aggregate level. However, in the cross-sectional analysis, there is a fair degree of confidence that the trade policy variable is accurately measured: all the charges on imports (surcharges and tariffs) are included; there is no problem stemming from the effect of

[78] There are well-known problems relating to finding a scalar measure that successfully aggregates protection across sectors. One exception is the measure developed by Anderson and Neary (1994), but its data requirements are fairly onerous.

quantitative restrictions, as those in manufacturing were virtually eliminated before 1990; and it is possible to control for the impact of the export subsidies.[79]

140. Figure 9 shows the degree of trade protection—as measured by the level of import tariffs—in the 24 manufacturing sectors in 1990, 1994 and 1998. In general, tariffs were reduced substantially during the 1990s, but the magnitude of reduction varied significantly across the sectors. Figure 10 shows the TFP growth in the same 24 manufacturing sectors during the 1990s. It can be noticed that the growth rates tended to be higher after 1994, but also that there was substantial variation in the TFP growth rates across the sectors.

141. Table 12 reports the results from regressions of TFP growth on changes in tariffs (*DTariff*).[80] To ensure that this effect is not picking up the impact of other variables, we included four additional variables: the capital labor ratio (*CLR*), the share of exports in total domestic production (*Exportshare*), the share of imports in total domestic sales (*Importshare*), and the initial level of *Tariff*. The square values of the levels and changes in tariffs were also included in one specification to test for any nonlinear effects. The regression was pooled over the periods 1990-94 and 1994-98, and all regressors, except for *DTariff*, were measured at their initial level in 1990 and 1994, respectively. A time-dummy for the second subperiod (*Dum*9498) was included, to ensure that the results are mainly driven by cross-sectional variations in the data.

142. The results show that there is a significant negative relationship between changes in tariffs and TFP growth across the manufacturing sectors. This result is robust to the inclusion of a set of variables that are possibly important for TFP growth. Of these variables, only *CLR* enters significantly, indicating that more capital-intensive sectors tend to exhibit higher TFP growth rates, possibly reflecting a R&D effect of capital investment. The initial level of the tariff, as well as the degree of export orientation of, and import penetration in, a sector, appears to be less important in explaining TFP growth rates.

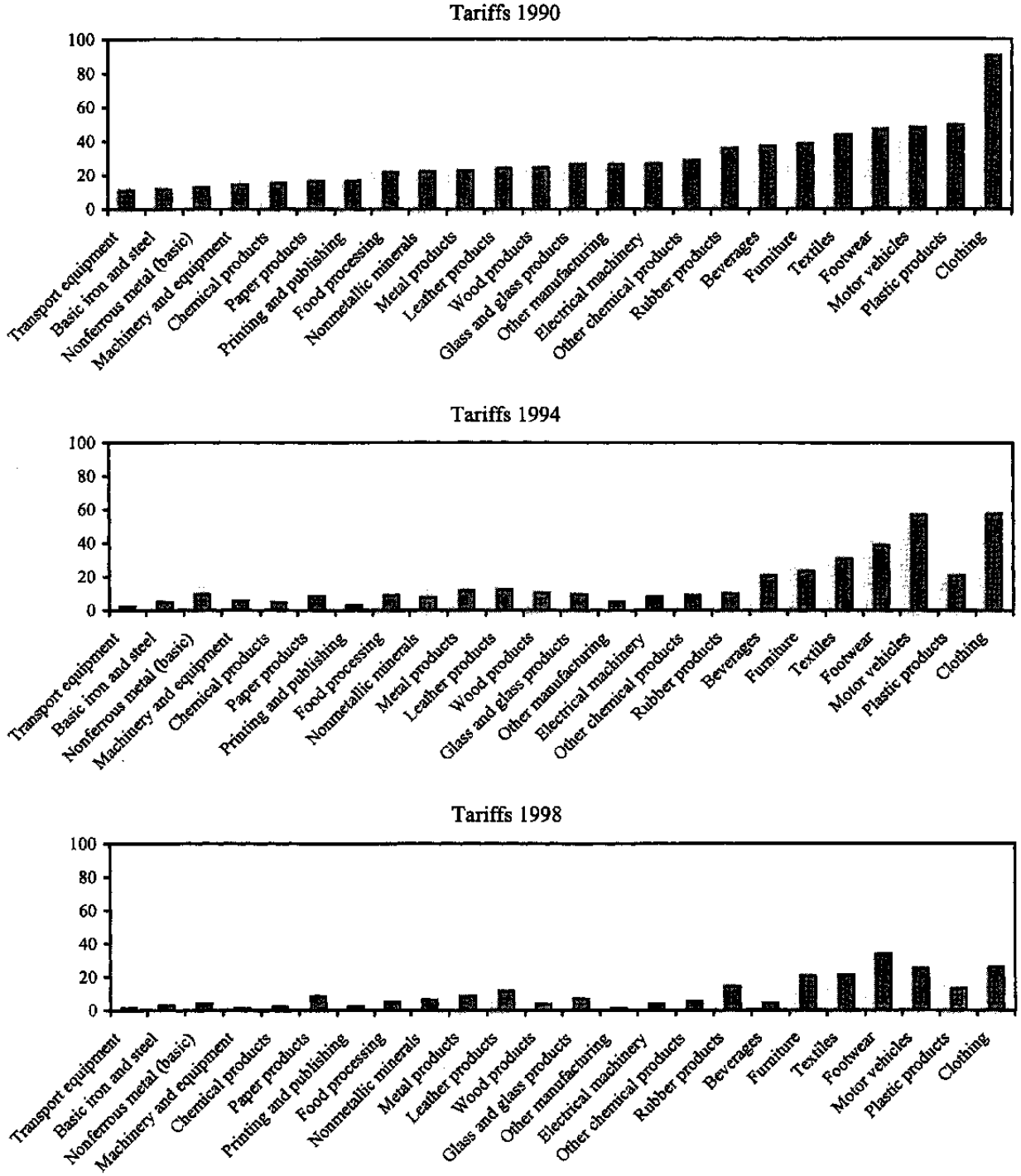
143. It is also interesting to note that the impact of the tariff changes on TFP growth seems to be nonlinear, with the marginal effect on TFP growth declining as tariff reductions

---

[79] Although data on effective protection are available, they were not used for three reasons: first, the data were based on statutory tariffs alone and did not incorporate the impact of the import surcharges, which varied substantially across sectors; second, the effective protection data series contained a few outliers, which raised doubts about its accuracy; and third, nominal protection has a more natural metric and is, therefore, more easily interpretable.

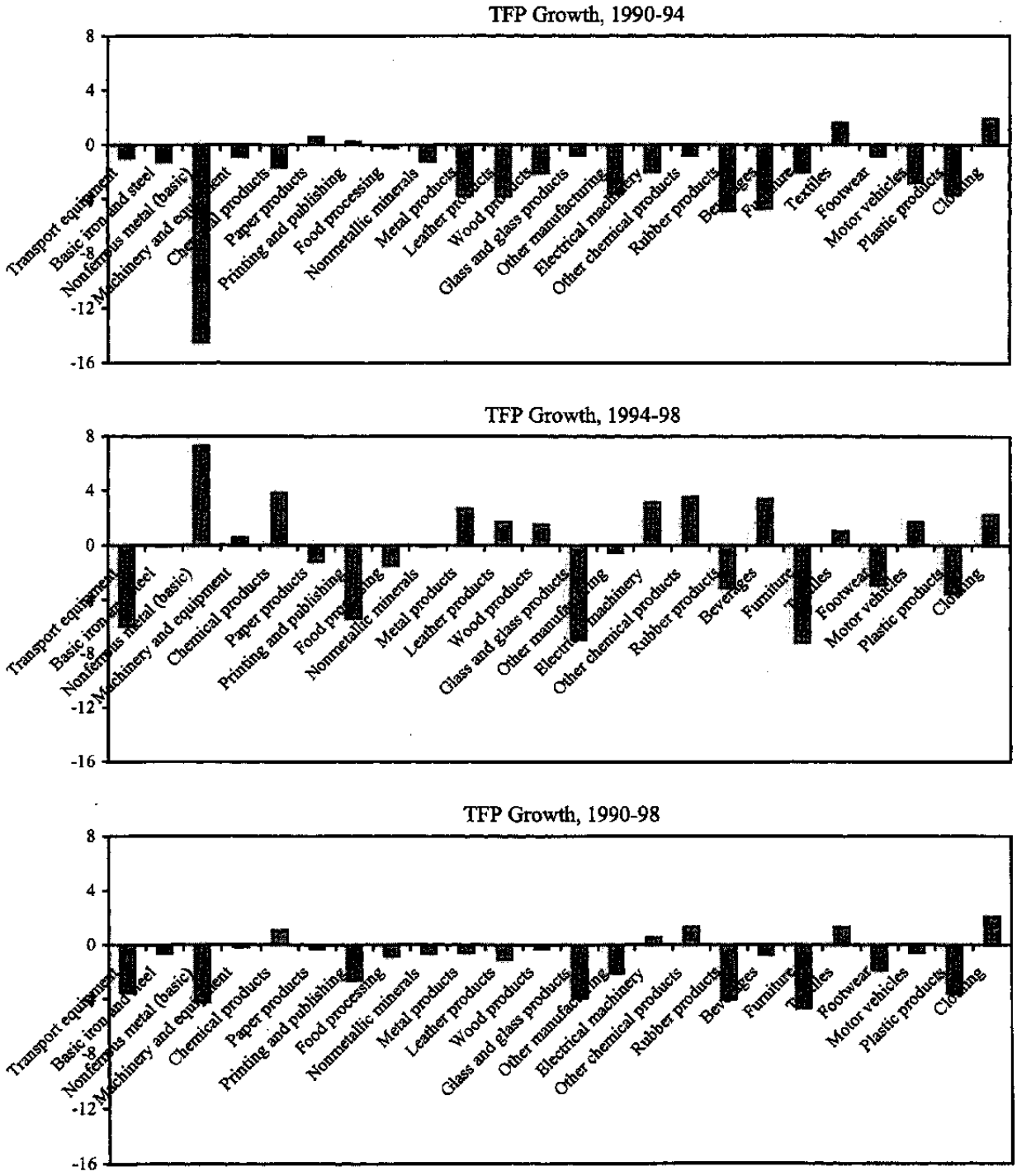
[80] The variable *DTariff* is measured as the change in tariff divided by 1 plus the initial tariff and, hence, reflects the change in domestic price owing to the tariff reduction.

Figure 9. South Africa: Tariff Protection, 1990-98
(In percent)



Sources: Industrial Development Corporation of South Africa; and the World Bank.

Figure 10. South Africa: TFP Growth, 1990-98
(Annual percentage change)



Sources: Industrial Development Corporation of South Africa; and Fund staff estimates.

Table 12. Trade Liberalization and TFP Growth
(Pooled results, 1990-94 and 1994-98)

	Dependent Variable: *DTFP*			
Constant	-3.96 [-3.18]	-4.39 [-3.56]	-5.35 [-3.36]	-5.93 [-2.85]
Dum9498	2.89 [2.64]	2.69 [2.79]	3.11 [2.72]	3.28 [2.87]
CLR		0.01 [2.39]	0.01 [2.23]	0.01 [2.23]
Exportshare		-0.07 [-0.90]	-0.08 [-0.95]	-0.07 [-0.80]
Importshare		0.04 [1.12]	0.04 [1.20]	0.05 [1.38]
Tariff				-0.02 [-0.31]
Tariff-sq				0.00 [1.47]
DTariff	-0.17 [-2.17]	-0.16 [-2.65]	-0.48 [-2.15]	-0.59 [-2.85]
DTariff-sq			0.02 [1.67]	0.03 [2.59]
R^2	0.15	0.25	0.28	0.33
Number of obs.	48	48	48	48

Note: See Appendix for definitions of variables. OLS estimations; the *t*-statistics (in brackets) are based on a heteroscedastic consistent covariance matrix (White (1980)).

144. It is also interesting to note that the impact of tariff changes on TFP growth seems to be nonlinear, with the marginal effect on TFP growth declining as tariff reductions become

larger.[81] One possible explanation is that this nonlinear impact simply reflects some exogenous limit to TFP growth within the estimated four-year period. These results are illustrated in Figure 11, where the conditional TFP growth is shown on the y-axis. The figure (and the regression results) also shows that the quantitative effect of trade liberalization is sizable; for example, the results indicate that the annual growth rate in TFP was nearly 3 percentage points higher in sectors where tariffs were reduced by 10 percent (or rather, where prices fell by 10 percent because of tariff reductions), than in sectors where tariffs were unchanged.

145. Table 13 depicts the results of the estimations for the two different subperiods, 1990-94 and 1994-98. The estimated coefficients on *DTariff* are negative and significant in both subperiods, but the quantitative effect is somewhat stronger in the latter subperiod. In this subperiod, it was also possible to examine the lagged effects of changes in tariffs on TFP growth. However, the coefficients on these lagged variables were small and insignificant. For the second subperiod, tests were also conducted on whether changes in the export subsidy affected TFP growth.[82] The result shows that the reductions in the Generalized Export Incentive Scheme (GEIS) could have adversely affected TFP growth but not significantly.[83] More important, the inclusion of the export subsidy variable leaves the coefficient of the tariff change variable.

146. The robustness of the results was examined in several ways. First, to test the sensitivity of the results to individual sectors, 24 additional regressions were run in which the observations from a single sector were dropped alternatively.[84] The estimated coefficient on *DTariff* always remained negative and significant at the 5 percent level, except in one case where it remained significant at the 10 percent level. Second, to test whether the impact of trade liberalization was confined to the import-competing sector, the observations for the two most export-oriented sectors were excluded; again the results remained broadly unaffected. Also, various measures of the extent to which a sector is a net exporter were included in the

---

[81] More precisely, given the normalization that occurs when calculating *DTariff*, the marginal effect on TFP growth tends to decline as the price reductions caused by tariff changes become larger.

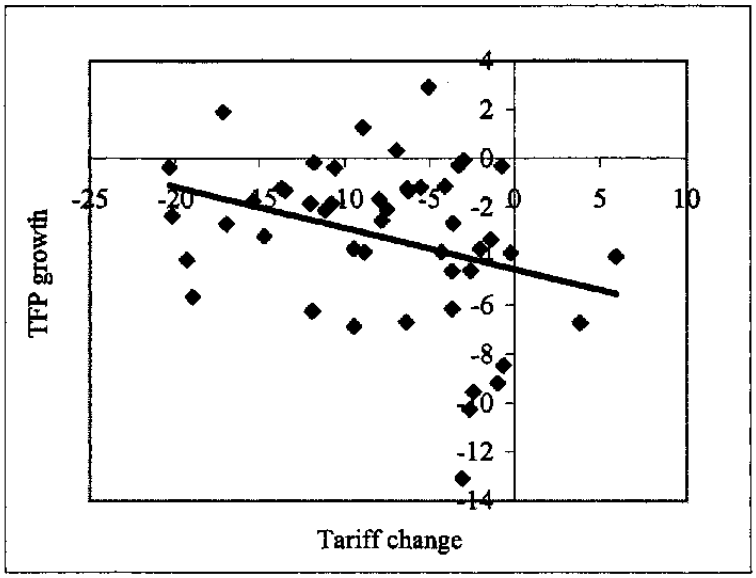
[82] The export subsidy remained broadly unchanged during 1990-94.

[83] One point on the measurement of the export subsidy should be noted. On the one hand, the subsidy provided effective protection to those sectors that received it; on the other hand, insofar as the subsidy was linked to the use of locally produced inputs, its effect was diluted (on the reasonable assumption that the local content requirement was binding). It is not clear that the manner in which the subsidy is measured adequately captures the latter effect.

[84] Thus, the number of observations dropped from 48 to 46 in these regressions.

Figure 11: Conditional TFP Growth and Tariff Changes

DTFP|(CLR, Exp, Imp, Dum 9498) = a + b(DTariff)



DTFP|(CLR, Exp, Imp, Dum 9498) = a + b(DTariff)+c(DTariff-sq)

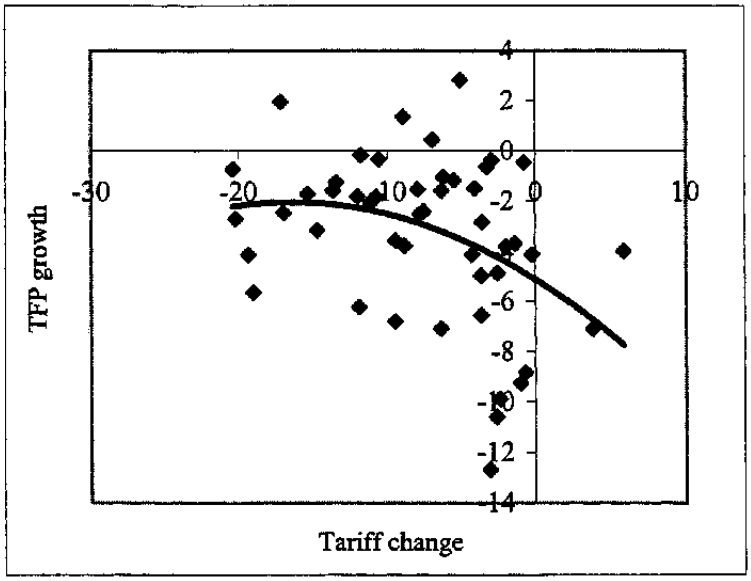


Table 13. Trade Liberalization and TFP Growth; Results for Subperiods

	Dependent Variable: *TFP growth*						
	1990-94		1994-98				
Constant	-2.03	-0.69	-4.16	-4.34	-3.99	-4.64	-2.22
	[-1.96]	[-0.17]	[-2.78]	[-2.21]	[-1.84]	[-2.14]	[-1.05]
Capital Labor Ratio	0.00	0.00	0.01	0.01	0.01	0.01	0.01
	[-0.04]	[-0.02]	[3.52]	[3.75]	[3.36]	[3.46]	[2.38]
Exportshare	-0.19	-0.20	0.04	0.04	0.04	0.04	0.03
	[-1.95]	[-1.93]	[0.50]	[0.48]	[0.51]	[0.57]	[0.45]
Importshare	0.02	0.03	0.03	0.03	0.03	0.03	0.03
	[0.52]	[0.67]	[0.56]	[0.71]	[0.56]	[0.55]	[0.84]
Tariff		-0.11		0.07			
		[-0.87]		[0.43]			
Tariff-sq		0.00		0.00			
		[1.56]		[-0.89]			
DTariff	-0.43	-0.46	-0.63	-0.51	-0.28	-0.63	-0.74
	[-2.57]	[-1.75]	[-2.77]	[-2.02]	[-4.62]	[-2.18]	[-3.57]
DTariff-sq	0.02	0.03	0.02	0.00		0.02	0.02
	[2.45]	[1.92]	[1.69]	[0.08]		[1.10]	[2.08]
DTariff (-1)					-0.03	-0.05	
					[-0.38]	[-0.17]	
DTariff-sq (-1)						0.00	
						[0.07]	
DGEIS							0.11
							[1.39]
R-square	0.40	0.49	0.39	0.41	0.36	0.39	0.43
Number of obs.	24	24	24	24	24	24	24

Note: OLS estimations; the t-statistics (in brackets) are based on a heteroskedastic consistent covariance matrix (see White (1980)).

regressions. In every instance, this variable was added separately (as an alternative to *Exportshare* and *Importshare*), but also interacted with *DTariff*. In no regression did these coefficients turn out to be significant, but the estimated coefficient on *DTariff* remained negative and significant. Finally, the average capacity utilization of individual sectors was included in the regressions to capture the possibility of idiosyncratic shocks affecting TFP growth differently across sectors. This variable was not significant, and it did not affect the importance of the tariff change variable.

147. While the results appear strong, it is possible that they are driven by the impact of trade liberalization on employment. If this impact is negative, TFP growth may have increased because firms fired less productive workers as tariffs were reduced in order to stay competitive. This is an important issue to clarify in the case of South Africa because employment fell almost continuously during the 1990s; in the manufacturing sector, employment fell in 18 of the 24 sectors examined in this study between 1990-98. However, the data do not lend any support to this hypothesis.

148. Table 14 reports regression results similar to those discussed above, but in which the dependent variable is employment growth, capital growth, or the growth in capital intensity (*C/L*), rather than TFP growth. There is no evidence for the hypothesis that the tariff reductions are positively related to the employment decline across the manufacturing sectors. In fact, the coefficient on *DTariff* is negatively signed, indicating that, if anything, employment has fallen less in the sectors where tariffs have been reduced more aggressively.[85] However, it can be noted that capital growth is positively related to changes in tariffs. This result suggests that, in sectors that have experienced larger tariff reduction, firms have tended to use the existing capital stock more efficiently rather than adding more capital; to some extent, this might also have had an indirect effect on the relative improvement in TFP growth in these sectors. Taken together, the data reveal that capital intensity increased more in the sectors that remained relatively highly protected (i.e., where tariffs were reduced less) during the 1990s, rather than the opposite.

E. Discussion and Conclusions

149. The proposition that trade is beneficial to dynamic efficiency (and not just to static economic welfare) is theoretically ambiguous, and the empirical evidence supporting it has been questioned. In this paper, we tested this proposition for South Africa using an aggregate time-series approach (covering the period 1970-97) and a cross-sectional approach covering the manufacturing sector for the period 1990-98 when South Africa witnessed major trade

---

[85] The regressions in Table 14 are not structural equations for factor accumulation and should therefore be interpreted with caution. However, even after controlling for variables such as nominal and real wage growth and labor productivity, the basic conclusion with regard to the relationship between employment growth and tariff reductions remains robust.

reform. Both approaches validate the proposed correlation between trade and TFP growth with a remarkably high degree of statistical reliability.

Table 14. Trade Liberalization and Factor Accumulation
(Pooled results, 1990-94 and 1994-98)

	Dependent Variable					
	Employment growth		Capital growth		Growth in *C/L*	
Constant	2.55	-3.04	6.15	7.61	8.93	10.94
	[-2.69]	[-2.72]	[3.36]	[4.21]	[4.49]	[4.91]
*Dum*9498	2.33	2.54	-0.22	-0.85	-2.84	-3.72
	[2.73]	[2.67]	[-0.14]	[-0.55]	[-1.60]	[-2.04]
CLR	0.00	0.00	-0.01	-0.01	-0.01	0.00
	[-0.93]	[-1.08]	[-1.65]	[-1.41]	[-1.17]	[-0.87]
Exportshare	-0.12	-0.12	0.22	0.22	0.37	0.37
	[-3.55]	[-3.52]	[1.86]	[1.93]	[3.09]	[3.22]
Importshare	-0.02	-0.02	-0.11	-0.12	-0.09	-0.09
	[-0.61]	[-0.59]	[-2.56]	[-2.64]	[-1.55]	[-1.60]
Dtariff	-0.16	-0.32	0.27	0.75	0.44	1.10
	[-3.06]	[-1.78]	[2.59]	[2.90]	[3.80]	[3.23]
Dtariff-sq		0.01		-0.03		-0.04
		[1.02]		[-1.83]		[-2.04]
R^2	0.29	0.33	0.28	0.31	0.41	0.44
Number of obs.	48	48	48	48	48	48

Notes: See Appendix for definition of variables. OLS estimations; the t-statistics (in brackets) are based on a heteroscedastic consistent covariance matrix (see White (1980)).

150. It is generally agreed that the South African economy needs to boost its supply capacity—through increases in factor accumulation and in TFP growth. The results reported in this section indicate that trade liberalization has contributed significantly to the growth process through increases in TFP. For example, the openness ratio increased on average by about 3.2 percent per year during the period 1990-97, which, according to our long-run results, contributed to TFP growth of about 1.6 percent per year. The actual annual growth in TFP during 1990-97 was 1.8 percent, implying that increased openness accounted for close to

90 percent of the actual TFP growth in that period.[86] The cross-sectional analysis yields similar results. The average price reduction in the 1990s due to the tariff changes was about 14 percent, which translates to higher TFP growth of nearly 3 percent per year. In other words, the typical manufacturing industry exhibited higher TFP growth per year of almost 3 percent because of the trade liberalization.

151. The time-series results pointing to the joint importance of the openness and the technology variable draw attention to two key and complementary channels of influence on the economy's productivity. While R&D, as embodied in investment in machinery and equipment, augments productivity, it also appears to be important to provide an open or liberal environment in which the gains from R&D can be maximized. A policy corollary of this finding could be that emphasis on increasing an economy's access to foreign capital goods—by, say, selectively liberalizing imports of capital goods—might be insufficient to harness the benefits from technology absorption. By the same token, the results suggest that an open environment needs to be complemented by appropriate avenues for the creation and absorption of technology.

152. The high level of unemployment is, arguably, the most serious macroeconomic problem in South Africa. A concern among policymakers and analysts has been that trade liberalization could aggravate the unemployment problem, as firms might reduce the size of workforce to remain competitive. However, the results in this study indicate that this concern is unfounded; employment has tended to fall less in the sectors where tariffs have been reduced most aggressively.

153. A comparison of the "footwear" and "chemical" sectors vividly illustrates this point. The footwear sector employed 33,000 people in 1990, and was relatively highly protected by an import tariff of 47 percent. The sector remained quite protected during the 1990s, as the tariff was reduced only to 34 percent by 1998. Despite this continued protection, employment fell on average by 5 percent per year to 22,000 by 1998. In addition, TFP fell on average by 1.9 percent per year, and value added fell on average by 5.1 percent per year. In contrast, the sector "other chemical products" employed 64,000 people in 1990, and the tariff was 29 percent. By 1998, the tariff had been slashed to 5 percent. Nevertheless, employment had increased on average by 1 percent per year to 68,000, and, at the same time, the sector had improved its efficiency: TFP increased on average by 1.3 percent per year, while value added grew on average by 2.6 percent per year.

154. The results in this paper are encouraging, but there remains considerable scope for refining and deepening the research agenda. In particular, it would be interesting to explore the impact of liberalization at the plant level. Plant-level data exist for the manufacturing

---

[86] Real output was virtually flat between 1990 and 1997, as the growth in TFP, together with capital accumulation of 0.9 percent per year, was offset by a reduction in labor input of 2.3 percent per year.

sector (in the form of the manufacturing census) for 1991 and 1993, and those for 1996 are expected to be released in early 2000. This would constitute a rich data set for examining issues related to trade, concentration, and efficiency, as has been done for Turkey (Levinsohn, 1993) and Cote d'Ivoire (Harrison, 1994).

155. Although significant strides have been made in opening up the economy, three significant problems remain with the South African tariff regime: its complexity, the continuing high protection for selected sectors, and the enduring problem of discretionary tariff changes. Addressing these problem could further increase the efficiency gains that can be reaped from greater openness.

References

Anderson, James E., and J. Peter Neary, 1994, "Measuring the Restrictiveness of Trade Policy," *World Bank Economic Review*, Vol. 8 (May), pp. 151-69.

Barro, Robert J., and Jong-Wha Lee, 1997, "Schooling Quality in a Cross Section of Countries," NBER Working Paper No. 6198 (Cambridge, Massachusetts: National Bureau Of Economic Research).

Belli, Pedro, J.M. Finger, and Amparo Ballivian, 1993, "South Africa: A Review of Trade Policies," World Bank Southern African Department Discussion Paper No. 4, (Washington: World Bank).

Bernard, Andrew B., and J. Bradford Jensen, 1998, "Exporting and Productivity," NBER Working Paper No. 7135 (Cambridge, Massachusetts: National Bureau of Economic Research).

Bhagwati, Jagdish N., 1971, "The Generalized Theory of Distortions and Welfare," in *Trade, Balance of Payments, and Growth: Papers in International Economics in Honor of Charles P. Kindleberger*, do by Jagdish N. Bhagwati and others (Amsterdam: North Holland), pp. 69-90).

Coe, David T., Elhanan Helpman, and Alexander W. Hoffmaister, 1997, "North-South R&D Spillovers," *Economic Journal*, Vol. 107, 134-(January), pp.49.

Collins, Susan M., and Barry P. Bosworth, 1996, "Economic Growth in East Asia: Accumulation Versus Assimilation," *Brookings Papers on Economic Activity: 2*, Brookings Institution, pp. 135-91.

De Long, J. Bradford, and Lawrence H. Summers, 1991, "Equipment Investment and Economic Growth," *Quarterly Journal of Economics*, Vol. 106 (May), pp. 445-502.

Dollar, David, 1992, "Outward-Oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs, 1976-1985," *Economic Development and Cultural Change*, Vol. 40 (April), pp. 523-44.

Edwards, Sebastian, 1998, "Openness, Productivity and Growth: What Do We Really Know?" *Economic Journal*, Vol. 108 (March), pp. 383-98.

Fajgenbaum, José, and others, 1998, "Growth Accounting," in *South Africa: Selected Issues*, IMF Staff Country Report No. 98/96 (Washington: International Monetary Fund).

General Agreement on Tariffs and Trade, 1993, *Republic of South Africa: Trade Policy Review* (Geneva: General Agreement on Tariffs and Trade).

Grossman, Gene N., and Elhanan Helpman, 1991, *Innovation and Growth in the Global Economy* Cambridge, Massachusetts: MIT Press).

Harrison, Ann E., 1994, "Productivity, Imperfect Competition and Trade Reform: Theory and Evidence," *Journal of International Economics*, Vol. 36, (February), pp. 53-73.

Johansen, Soren, 1988, "Statistical Analysis of Cointegrating Vectors," *Journal of Economic Dynamics and Control*, Vol. 12 (June-September), pp. 231-54.

Johansen, Soren, and K. Juselius, 1990, "Maximum Likelihood Estimation and Inference on Cointegration—With Applications to the Demand for Money," *Oxford Bulletin of Economics and Statistics*, Vol. 52 (May), pp. 169-210.

Levinsohn, James, 1993, "Testing the Imports-as-Market Discipline Hypothesis," *Journal of International Economics*, Vol. 35 (August), pp. 1-22.

Nehru, Vikram, Eric Swanson, and Ashutosh Dubey, 1995, "A New Database on Human Capital Stock in Developing and Industrial Countries: Sources, Methodology, and Results," *Journal of Development Economics*, Vol. 46 (April) pp. 379-401.

Rodriguez, Francisco, and David Rodrik, 1999, "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence," NBER Working Paper No. 7081 (Cambridge, Massachusetts: National Bureau of Economic Research).

Sachs, Jeffrey D., and Andrew Werner, 1995, "Economic Reform and the Process of Global Integration," *Brookings Papers on Economic Activity: 1,* Brookings Institution, pp. 1-118.

Sarel, Michael, 1997, "Growth and Productivity in ASEAN Countries," IMF Working Paper, 97/97 (Washington: International Monetary Fund).

Tybout, James R., 1992, "Linking Trade and Productivity: New Research Directions," *World Bank Economic Review*, Vol. 6 (May), pp. 189-211.

White, Halbert, 1980, "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity," *Econometrica*, Vol. 48 (May) pp. 817-838.

Data Description and Sources

A. Time-Series Analysis

Variable	Definition	Source
TFP	Index of growth in private nonagricultural GDP minus growth in capital and labor, weighted by their respective shares in output; factor shares based on national income accounts.	Fajgenbaum and others (1998)
TFP-alt	Index of growth in private nonagricultural GDP minus growth in capital and labor, weighted by their respective shares in output; factor shares based on Sarel (1997).	Fajgenbaum and others (1998)
Open	Real imports and real exports of goods and nonfactor services divided by real GDP.	South African Reserve Bank (SARB), *Quarterly Bulletin*, 1998
MachInv	Share of investment in machinery and equipment in total gross fixed capital formation.	SARB, *Quarterly Bulletin*, 1998
CLR	Real private nonagricultural capital stock divided by private nonagricultural employment.	SARB, *Quarterly Bulletin*, 1998
Tariff	Sum of tariff revenues and import surcharges divided by value of imports.	SARB, *Quarterly Bulletin*, 1998
DTariff	Change in tariff divided by 1 plus initial level of tariff.	
DCapacity	Change in capacity utilization in manufacturing.	SARB, *Quarterly Bulletin*, 1998
*Dum*8592	Sanctions dummy taking a value of 1 for the period 1985-92 and 0 otherwise.	

B. Cross-Sectional Analysis 1/

Variable	Definition	Source
TFP growth	Annual average of growth in real value added in a sector minus the factor share weighted growth in capital stock and employment; factor share is in nominal terms.	Industrial Development Corporation of South Africa (IDC)
Exportshare	Exports divided by production (in current prices).	IDC
Importshare	Imports divided by domestic consumption (in current prices).	IDC
Tariff	Sum of tariff revenues and import surcharges divided by value of imports.	Belli, Finger, and Ballivian (1993) for tariff data for 1990; IDC for tariff data for 1994 and 1998; and GATT (1993) for import surcharge data.
DTariff	Change in tariff divided by 1 plus initial tariff.	
*Dum*9498	Dummy variable that takes a value of 1 for the period 1994-98 and 0 otherwise.	
Generalized Export Incentive Scheme	Export subsidy.	Belli, Finger, and Ballivian (1993)
C/L	Capital stock in constant prices divided by employment.	IDC (1999)

1/ The data refer to the following 24 International Standard Industrial Classification (ISIC) three-digit subsectors within the manufacturing sector: food processing, beverages, textiles, clothing, leather, footwear, wood and wood products, furniture, paper and paper products, printing and publishing, basic chemicals, other chemical products, rubber products, plastic products, glass and glass products, other nonmetallic minerals, basic iron and steel, basic non-ferrous metals, metal products, machinery and equipment, electrical machinery, motor vehicles, transport equipment, and other manufacturing.

V. South Africa's Pattern Of Trade

A. Introduction and Summary[87]

156. In the past ten years, South Africa's international trade has undergone substantial structural change, including the end of the trade embargo, the elimination of nontariff barriers, a large reduction in tariffs, and the end of the generalized export subsidies. With the removal of these trade distortions, it would seem useful to examine the pattern of South Africa's trade today. On another front, one of the interesting phenomena in South Africa has been the high capital intensity of production in the context of very high unemployment rates. Is this capital intensity also reflected in South Africa's pattern of trade, that is, are South Africa's net exports relatively capital intensive?

157. The analysis finds that the majority of South Africa's trade is with the so-called high-income countries, most importantly the European Union; this trade tends to be characterized by large exports of natural resource commodities and large imports of sophisticated manufactured goods. We find that South Africa tends to be a net exporter of capital-intensive goods to high- and middle-income countries, in apparent contradiction of the Heckscher-Ohlin-Samuelson theorem. Moreover, it appears as if this capital intensity increased during the 1989-97 period.

158. Subsection B describes some of the stylized facts concerning South Africa's trade: with whom South Africa carries out the majority of trade; what goods make up South Africa's trade; and what the relative factor intensities are of the goods that South Africa trades with its various partners. Subsection C outlines the theoretical considerations and the empirical approaches relevant to testing the Heckscher-Ohlin-Samuelson (HOS) theorem; Subsection D reviews other recent studies on South Africa's trade; and Subsection E presents the results of two approaches to testing the validity of the HOS theorem in South Africa: the standard factor content approach, in the tradition of Leontief (1954) and modified by Leamer (1980), and the commodity composition approach. Subsection F concludes.

B. South Africa's Pattern of Trade

159. Three main themes are apparent when looking at South Africa's pattern of trade: the high concentration of trade with relatively high-income countries; the very diverse net export patterns with respect to different commodity groups; and the positive correlation between capital intensity and net exports in the commodity pattern of trade. [88]

---

[87] Prepared by Trevor Alleyne and Arvind Subramanian

[88] All the analysis in this study is based on a detailed input-output table (supplied by WEFA of South Africa) with 45 sectors (defined at ISIC 3-digit level) and four factors of production

(continued...)

The country and commodity composition of trade

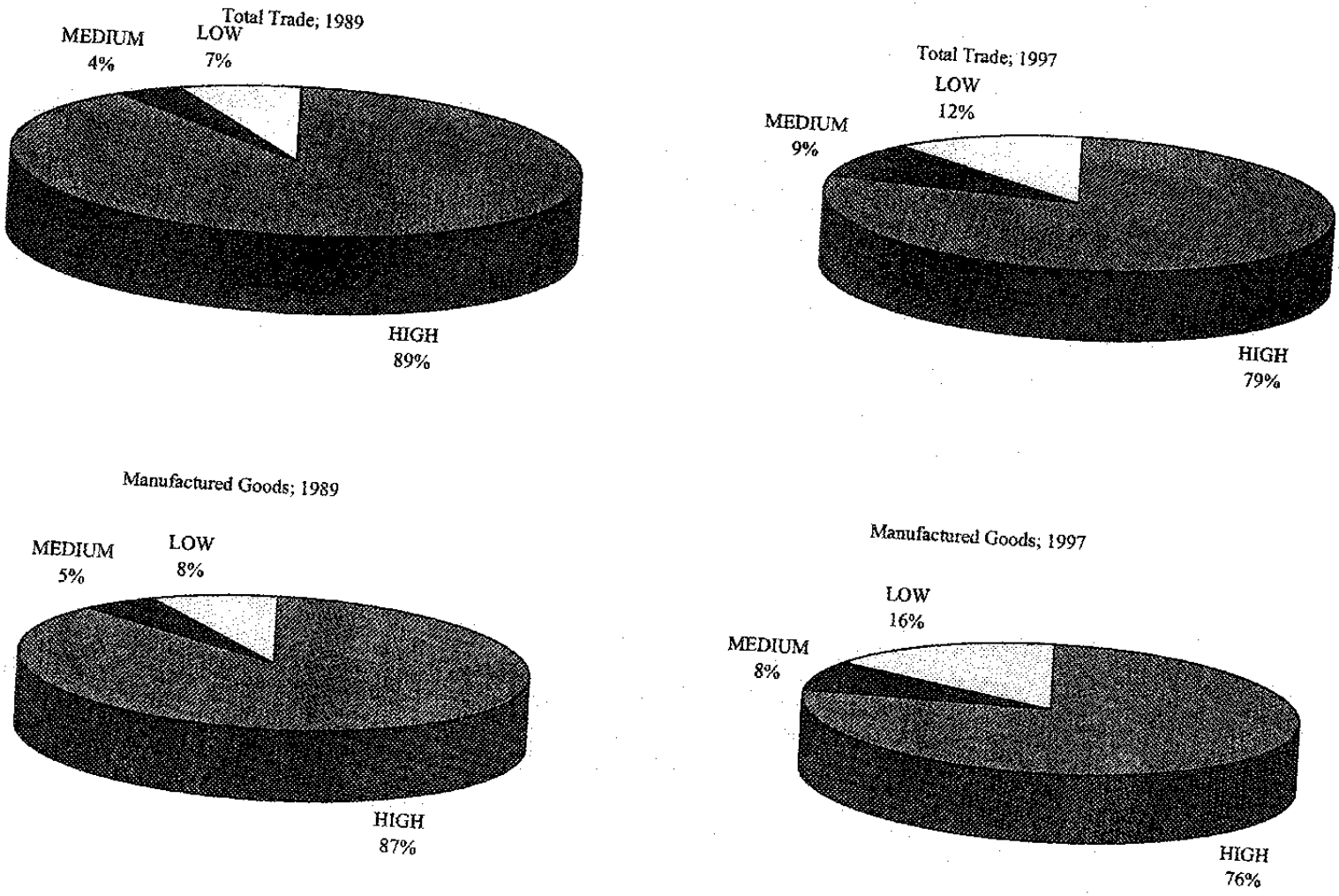
160. South Africa has a relatively open economy, with trade accounting for 32 percent of GDP in 1997. From a geographical standpoint, South Africa's trade is relatively concentrated with the European Community (EU), with which it conducts 39 percent of its trade (38 percent of exports and 41 percent of imports); East Asia and Pacific, with which it conducts 24 percent of its trade (27 percent of exports and 22 percent of imports); North America (15 percent of trade, 12 percent of exports, and 18 percent of imports); and sub-Saharan Africa (11 percent of trade, 14 percent of exports, and 7 percent of imports).

161. When trading partners are grouped according to their income level, South Africa's trade appears even more concentrated, with 79 percent of total trade conducted with high-income countries, compared with just 9 percent and 12 percent conducted with middle- and low-income countries, respectively (Figure 12). Moreover, this concentration is present even when South Africa's trade is disaggregated into natural resources, basic manufactured goods, and sophisticated manufactured goods.[89] As Tables 15 and 16 show, for all categories of goods, the overwhelming majority of trade is carried out with the high-income countries. However, during the course of the 1990s, trade with the high-income countries declined in relative terms while it increased with the middle-income countries (in the case of natural resources) and the low-income countries (in the case of sophisticated manufactured goods).

(capital plus three types of labor). The study focuses on the 32 nonservice, or commodity sectors, of which 28 are manufacturing and four are natural resources. For the purposes of this study, the labor factors were aggregated into **skilled labor** and **unskilled labor**. Trade data were available for 12 groups of partner countries, which were combined into 3 categories: The EU (including the rest of western Europe), North America (including Mexico) and East Asia and Pacific constitute the high-income countries; sub-Saharan Africa and South Asia make up the low-income country group; and the remaining countries constitute the middle-income countries.

[89] See the footnote to Table 17 for a definition of the commodity groups. In 1997, trade in natural resources constituted 33 percent of total trade, while trade in basic manufactured goods and sophisticated manufactured goods constituted 38 percent and 29 percent, respectively.

Figure 12. South Africa: Distribution of Trade by Partner Country, 1989 and 1997



Source: WEFA South Africa; and IMF staff estimates

Table 15. South Africa: Trade Patterns, by Commodity Group and Trading Partner Group, 1989

Trading Partner	Share of Trade in:				Net Exports as a Percent of Trade			
	Total Trade	Natural Resources	Manufactured goods		Total Trade	Natural Resources	Manufactured goods	
			Basic	Sophisticated			Basic	Sophisticated
High income	89.2	92.8	83.5	93.1	7.5	71.9	-3.9	-84.0
Middle Income	4.0	2.5	6.7	1.6	14.9	45.1	12.9	-53.9
Low income	6.8	4.7	9.7	5.3	38.6	-72.9	75.1	88.3
Total	100.0	100.0	100.0	100.0	9.9	64.4	4.9	-74.3

Sources: WEFA South Africa; IMF staff estimates

Table 16. South Africa: Trade Patterns, by Commodity Group and Trading Partner Group, 1997

Trading Partner	Share of Trade in:				Net Exports as a Percent of Trade			
	Total Trade	Natural Resources	Manufactured goods		Total Trade	Natural Resources	Manufactured goods	
			Basic	Sophisticated			Basic	Sophisticated
High income	78.3	82.3	73.6	80.2	-1.4	66.2	-4.2	-73.9
Middle Income	9.3	12.4	7.8	8.0	-7.9	6.3	12.3	-57.9
Low income	12.4	5.2	18.7	11.8	27.0	-22.0	35.5	33.0
Total	100.0	100.0	100.0	100.0	1.5	54.1	4.5	-60.0

Sources: WEFA South Africa; IMF staff estimates

Table 17. South Africa: Factor Intensities, 1997

		High-skilled and skilled	Semi, unskilled, and informal	Total Labor	Capital	Capital-Labor ratio	Skilled-Unskilled ratio
AG	Agriculture, forestry, & fishing	0.15	0.18	0.33	0.67	2.02	0.80
CO	Coal mining	0.27	0.22	0.49	0.51	1.04	1.22
G	Gold & uranium ore mining	0.20	0.41	0.61	0.39	0.63	0.50
O	Other mining	0.22	0.25	0.47	0.53	1.13	0.88
F	Food	0.27	0.19	0.46	0.54	1.16	1.42
BV	Beverages	0.27	0.15	0.41	0.59	1.43	1.82
TO	Tobacco	0.27	0.15	0.42	0.58	1.39	1.80
TX	Textiles	0.26	0.31	0.57	0.43	0.75	0.82
AP	Wearing apparel	0.26	0.39	0.65	0.35	0.54	0.67
LE	Leather & leather products	0.24	0.23	0.47	0.53	1.13	1.08
FW	Footwear	0.25	0.29	0.54	0.46	0.86	0.88
W	Wood & wood products	0.29	0.24	0.53	0.47	0.90	1.19
P	Paper & paper products	0.28	0.16	0.44	0.56	1.25	1.77
PR	Printing, publishing, & recorded media	0.42	0.14	0.56	0.44	0.79	3.04
CK	Coke & refined petroleum products	0.27	0.19	0.46	0.55	1.20	1.44
C	Basic chemicals	0.31	0.15	0.46	0.54	1.18	2.05
OC	Other chemicals & manmade fibres	0.33	0.15	0.48	0.52	1.08	2.20
R	Rubber products	0.30	0.22	0.52	0.48	0.92	1.36
PL	Plastic products	0.30	0.21	0.52	0.49	0.94	1.44
GL	Glass & glass products	0.26	0.23	0.49	0.51	1.03	1.11
NM	Nonmetallic minerals	0.26	0.23	0.49	0.51	1.05	1.14
FE	Basic iron & steel	0.30	0.22	0.52	0.48	0.91	1.36
NF	Basic nonferrous metals	0.23	0.15	0.39	0.61	1.58	1.53
MP	Metal products, excluding machinery	0.32	0.25	0.57	0.43	0.76	1.29
MA	Machinery & equipment	0.38	0.21	0.59	0.41	0.70	1.76
EM	Electrical machinery	0.36	0.27	0.63	0.37	0.60	1.31
TV	Television, radio, & communication equipment	0.33	0.27	0.60	0.40	0.66	1.24
SC	Professional & scientific equipment	0.29	0.24	0.53	0.47	0.88	1.18
MV	Motor vehicles, parts, & accessories	0.34	0.19	0.53	0.47	0.88	1.80
OT	Other transport equipment	0.40	0.24	0.64	0.36	0.55	1.66
FU	Furniture	0.31	0.28	0.59	0.41	0.69	1.09
O	Other industries	0.27	0.20	0.47	0.53	1.12	1.38

Sources: WEFA South Africa; and IMF staff estimates.

Note: The upper shaded region represents the natural resource goods; the lower shaded region represents the sophisticated manufactured goods; and the unshaded region represents the basic manufactured goods.

162. On an net export basis, South Africa, in 1997, had close to a zero balance in its overall merchandise trade account, comprising small absolute deficits with the high- and middle- income countries and a moderately large surplus with the low-income countries. As a proportion of total bilateral trade, the imbalance with the high-income countries is negligible (a deficit of under 2 percent), while that with middle- and low-income countries (a deficit of 8 percent and a surplus of 27 percent, respectively) is much higher; in the latter case, the imbalance is a matter of some contention between South Africa and its African partners (see Table 16).

163. The near-zero balance on overall net exports masks the existence of large imbalances in trade across commodities (see Tables 15 and 16). South African trade is characterized by large surpluses in natural resources, similarly large deficits in sophisticated manufactured goods, and near balance in basic manufactured goods. This aggregate pattern essentially reflects the separate commodity trade patterns with its high- and middle-income partners.[90] In contrast, trade with the low-income countries is characterized by large South African surpluses in both basic and sophisticated manufactured goods, which are only partially offset by a deficit in natural resource commodities.[91]

Factor intensity of South Africa's production and trade

164. On the basis of a cursory inspection of the input-output coefficients (Table 17 and Figure 13), one can make some general observations about the relative factor intensities of the three broad sectors. First, the production of basic manufactured goods tends to be more capital intensive than that of sophisticated manufactured goods; the production of the latter, which tend to be net imports for South Africa, are, on average, more skilled labor intensive. Second, the natural resource sector does not exhibit any homogeneity in terms of the factor intensities of its subsectors: agriculture is the most capital-intensive sector of all three-digit categories, the legacy of past policies designed to create a large, mechanized farming sector, while gold mining is the most unskilled labor intensive subsector of all the three-digit categories. Third, capital-labor ratios declined across-the-board during the 1989-97 period, while the ratio of skilled to unskilled labor generally increased.

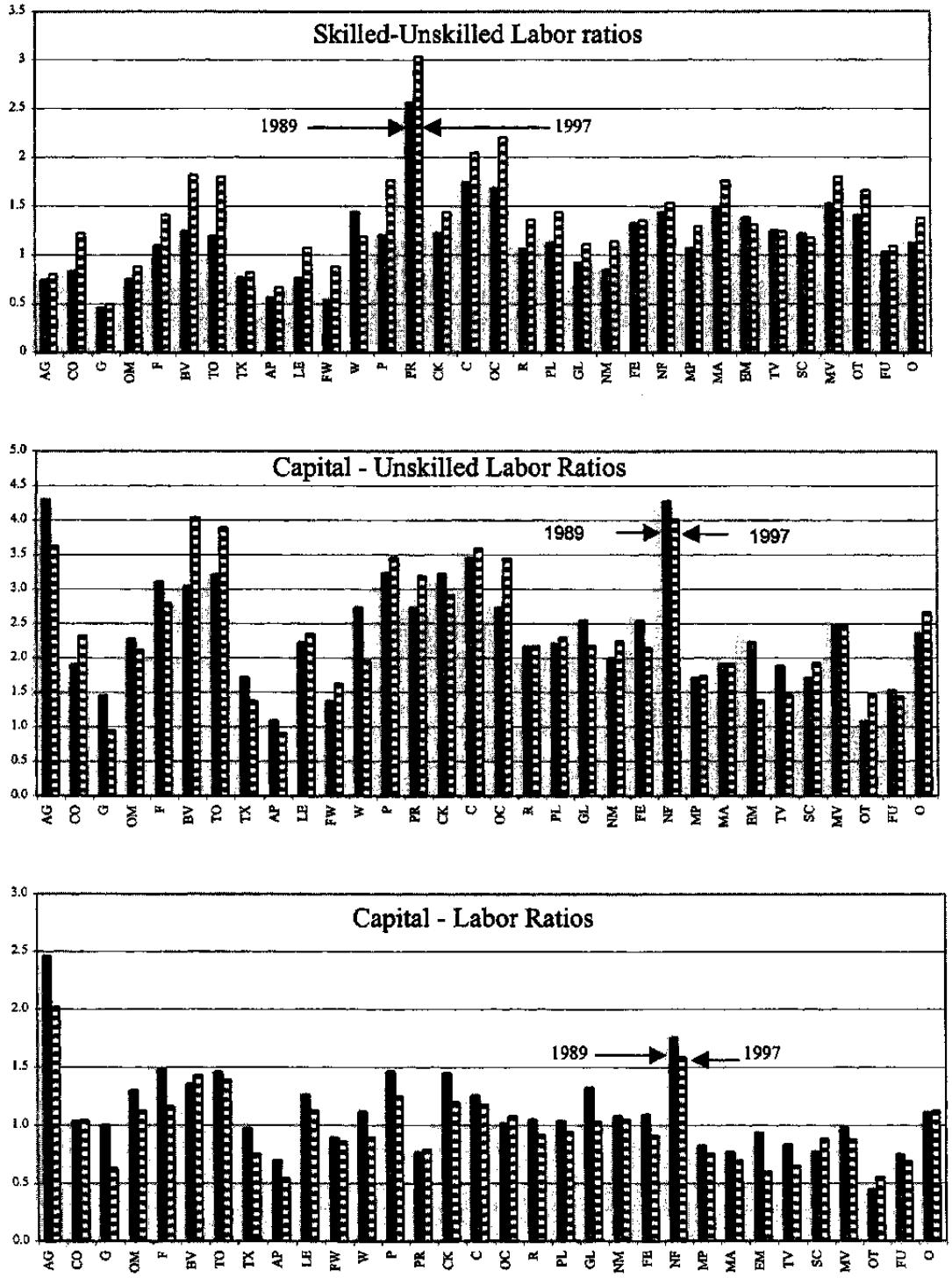
165. In this context, it is useful to look at various rank correlations between net exports and relative factor intensities (Figure 14). For overall trade, there is a positive correlation between net exports and the capital-labor ratio. This result holds when examining trade with each of the high-, middle-, and low-income countries. At least with respect to the high-

---

[90] In the case of natural resource trade with the middle-income countries, South Africa's surplus is relatively small because of offsetting petroleum imports.

[91] The significant reduction in the magnitudes of ratios since 1989 may simply reflect a large increase in the value of total trade with the low-income countries.

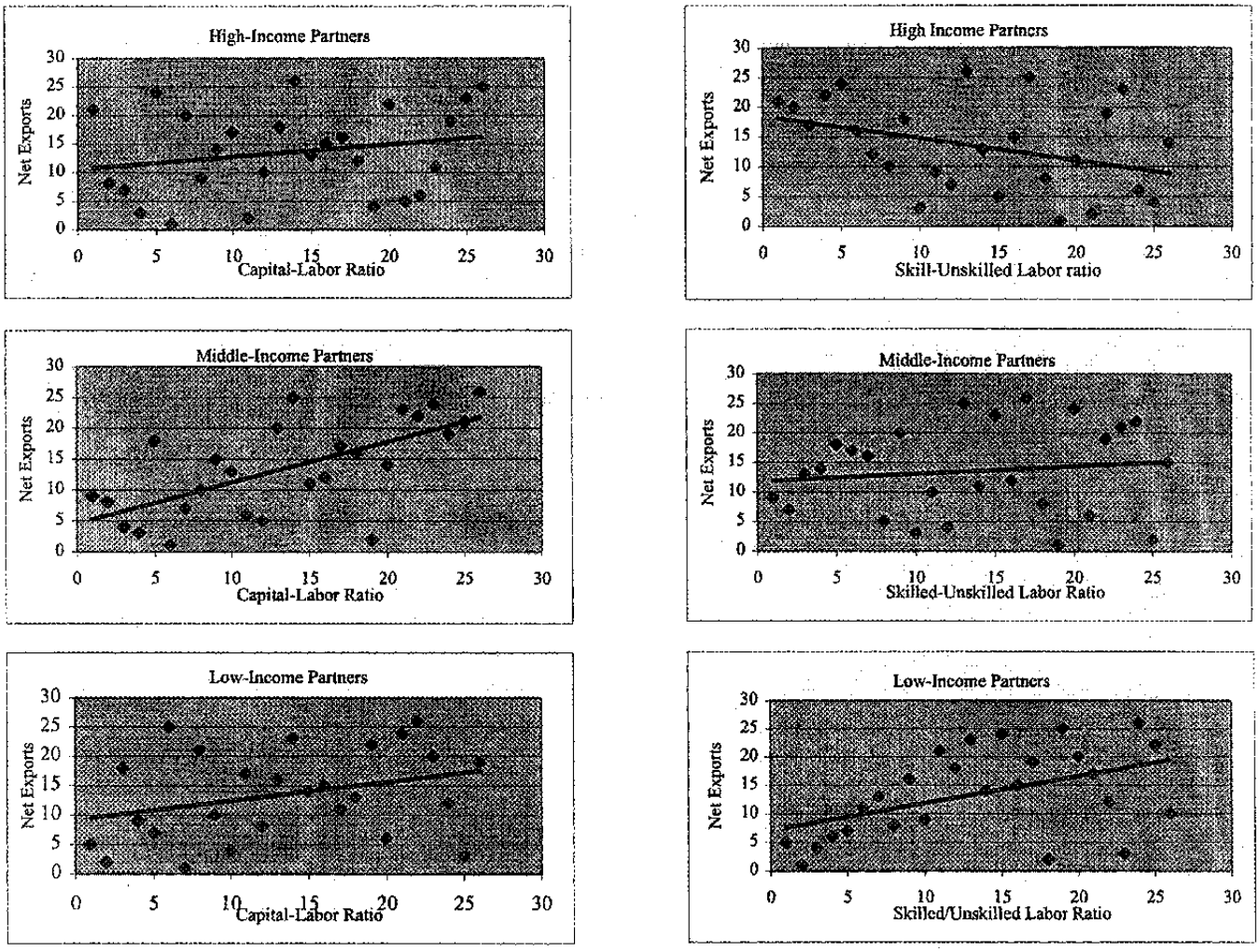
Figure 13. South Africa: Factor Input Ratios, 1989 and 1997



Sources: WEFA South Africa; and IMF staff estimates

Note: See Table 17 for definition of items on the horizontal axes

Figure 14. South Africa: Rank Correlations between Net Exports and Factor Ratios, 1997



Source: WEFA South Africa; and IMF staff estimates

income countries, this result is somewhat counterintuitive and will be investigated more formally in the following sections. Another result, which is more intuitively appealing, is the correlation between net exports and the ratio of skilled to unskilled labor, which is negative for trade with high-income countries and positive for trade with low-income countries.

C. Explaining the Pattern of Trade: Theory and Empirical Approaches to Testing

166. In the basic two-sector, two-factor, two-good Hecksher-Ohlin-Samuelson (HOS) model, a country exports those goods whose production uses intensively the factor in which the country is relatively well endowed and imports those goods whose production uses intensively the factor that is relatively scarce in the country. Because this proposition does not generalize easily with many goods and factors (Deardorff, 1984),[92] empirical testing of this proposition takes two forms.

Factor content approach

167. The first approach is an extension of the "factor content" version of the HOS theorem. This says that countries will be net exporters of their abundant factors and net importers of their scarce factors. The proof of this proposition can be stated as

$$AT_i = E_i - E_w B_i, \qquad (1)$$

where A is the m x n matrix of technology coefficients whose typical element, a_{kj}, represents the quantity of the k^{th} factor used per unit of production of good j; T is the n x 1 vector of net exports; E_i is the endowment of factors of country i; E_w is the world's endowment vector of factors, which is summed over all i's; and B_i is a scalar.

168. If Q_i is the vector of outputs of country i, factor market equilibrium requires $AQ_i = E_i$. Summing over all countries yields

$$AQ_w = E_w \qquad (2)$$

Identical and homothetic tastes imply that the consumption vectors C_i of each country are proportional to each other and to world output (Q_w): $C_i = Q_w B_i$.

Country i's trade, T_i, is given by $T_i = Q_i - C_i$, and the factors embodied in trade are

$$AT_i = A(Q_i - C_i) = E_i - AQ_w B_i = E_i - E_w B_i \qquad (3)$$

---

[92] For example, how can goods be ranked by factor intensities when there are more than two factors?

If there are two factors of production, capital ***(K)*** and labor ***(L)***, the two equations derived from (3) above are

$$K_T = K_i - B_i K_w; \text{ and}$$

$$L_T = L_i - B_i L_w. \qquad (4)$$

where K_T and L_T are capital and labor embodied in net exports. It is then natural to define capital and labor abundance for a particular country relative to the world's endowments; that is, a country is relatively capital abundant if

$$K_i/K_w > L_i/L_w.$$

169. In one of the first tests of the HOS proposition, Leontief (1954) drew attention to the "paradox" whereby the United States appeared to be relatively labor abundant because of his empirical demonstration that the capital-labor ratio embodied in U.S. exports was smaller than that in U.S. imports. While many subsequent studies have tried to reconcile the observed U.S. pattern of trade with the theory, Leamer (1980) has shown that Leontief's test was not the appropriate one, especially in the case of unbalanced trade. For example, if a country has a large trade surplus, it is possible for it to be a net exporter of factor services with which it is relatively poorly endowed. Indeed, in the U.S. data studies of Leontief, the United States was a net exporter of both capital and labor services, in part because it had a large trade surplus.

170. Leamer (1980) shows that a valid test of the factor content proposition in the presence of unbalanced trade is to compare factor ratios in trade versus those in consumption. Specifically, if a country is a net **exporter** of both capital and labor services, it is relatively **capital abundant** if the capital intensity of net exports **exceeds** the capital intensity in consumption (i.e., $K_T/L_T > K_c/L_c$); conversely, if it is a net **importer** of both services, it is relatively capital abundant if the capital intensity of net exports is less than the capital intensity of consumption (i.e., $K_T/L_T < K_c/L_c$).[93]

Commodity composition approach

171. An alternative route to testing the HOS theorem is to conduct a regression analysis of the commodity composition of trade, with the regression equation taking the form

$$T_j = \beta_1 \theta_{1j} + \beta_2 \theta_{2j} + \beta_m \theta_{mj} + \mu_j \quad j = 1, \ldots, n \qquad (5)$$

---

[93] Of course, if the country is a net **exporter** of capital but a net **importer** of labor, i.e., $K_T > 0$ and $L_T < 0$, the country is also considered to be capital abundant.

where T_j represents net trade of commodity j, the θ's are the gross factor input requirements (factor intensities), and β's the associated coefficients.[94] Equation (5) itself can be theoretically justified based on an underlying trade model that relates a country's autarky price to factor intensities and factor abundance defined relative to the world. The justification is less than perfect because, whereas the underlying trade relationship requires putting measures of abundance **and** factor intensities on the right-hand side of the equation, the regression only uses measures of factor intensities.

172. Deardorff (1984) points out a number of important features that should be borne in mind in estimating equation (5). First, according to the theory, the independent variables must be factor shares and not relative physical ratios, although many studies have resorted to the latter. Second, the factor shares must be the total factor shares, that is, those derived from the gross input-output coefficients and not those from the direct input-output coefficient, because gross factor intensities determine autarky prices.[95] Third, the dependent variable should be **net exports**; gross exports may behave very differently from net exports, reflecting the phenomenon of intra-industry trade, about which the standard HOS theory has very little to say. Fourth, the dependent variable must be scaled, preferably by a measure of the size of the world market. However, this has rarely been done in practice: many studies have not scaled at all or have scaled by final output or by gross trade (exports plus imports). Fifth, because of the likely relation between the variance of the error term and the industry size, heteroscedasticity could significantly affect the estimation of equation (5) and thus should be corrected for. Finally, it would be preferable to test the HOS theorem by applying it to bilateral trade and not to aggregate trade. This is especially important for countries, like South Africa, that have less extreme relative endowments of labor and capital.

173. Two versions of the theory set out in equation (5) are usually tested with correspondingly different estimation techniques. One version, using regression analysis, tests for the sign on the coefficient of the various factor shares on the right-hand side; in the other version, the dependent variable is binary rather than continuous, because the theory of comparative advantage can explain only the direction, not the quantity, of trade flows. Thus, a number of studies have used probit and logit analysis to test the probability that the sign of the **dependent** variable is related to the explanatory variables.

174. Of the two versions, the factor content version is better grounded in theory. The commodity composition approach is theoretically deficient because, although the HOS

---

[94] Because the factor shares sum to unity, the regression equation has no constant term.

[95] It is clear—at least for nontraded inputs—that the factors used in producing them should be accounted for in assessing the potential for trade in a good that uses these inputs. This is so because the costs of these factors will be passed through to the goods.

theorem is a relationship among **three** variables—factor abundance, factor intensity, and trade—the empirical testing involves only intensity and trade. However, Bowen and Sveikauskas (1992) show, on the basis of extensive multicountry and multicommodity analyses, that this deficiency is not severe. Thus the commodity composition approach remains a useful way to test the HOS theory.

D. Comparison with Other Work

175. Two recent papers, Tsikata (1998) and ILO (1999), have also examined South Africa's pattern of trade. However, their analyses suffer from the following shortcomings. Tsikata (1998) examines the pattern of exports rather than that of net exports, raising questions as to how her results should be interpreted. Second, Tsikata classifies products as skilled labor, unskilled labor, resource, or capital intensive on the basis of a priori criteria drawn from experience around the world. This classification could fail to capture an important feature of South Africa's production structure, namely, that certain sectors could actually be capital intensive (because of various distortions) even though they might be classified as labor intensive in other countries. Third, Tsikata only looks at aggregate exports, that is, exports with all partners, rather than trade with different trading partners, which, theory suggests, is a more appropriate approach, especially if there are significant variations in the pattern of trade across trading partners (as appears to be the case for South Africa). Fourth, Tsikata uses physical factor intensities rather than those in terms of factor shares, which Deardorff (1984) suggests is the more appropriate one. Tsikata does not undertake any formal econometric analysis of the pattern of trade.

176. The examination of the patterns of South African trade in the recent paper by the ILO (1999) consists essentially of a categorization of product categories according to (physical) capital-labor ratios and natural resource intensity[96] and the correlation of these to the trade performance of the sector. The determination of whether a sector is export oriented or import substituting is based on an index of revealed comparative advantage. In addition to the arbitrary nature of the definitions and classifications, the ILO paper suffers from the shortcomings noted above in relation to Tsikata (1998). The ILO paper does, however, extend the analysis in one important direction by incorporating South Africa's endowment of natural resources and raising the possibility that South Africa's apparent abundance of capital might be related to an assumed inherent capital intensity of resource-based sectors. In the following subsection, we control explicitly for South Africa's endowments of natural resources in order to test the hypothesis of capital intensity of trade and production.

---

[96] Product categories are classified as capital intensive, intermediate, or labor intensive depending on whether the capital-labor ratio (rand/employment) is greater than 15, between 5 and 15, or less than 5, respectively. Similarly, a sector is classified as resource intensive if it uses a minimum of 20 percent of inputs from natural resource sectors.

E. Results

Factor content approach

177. Tables 18 and 19 contain the results of the analysis based on measuring the factor content of South Africa's trade in manufactured goods for 1989 and 1997. Although exports are overwhelmingly more capital intensive than imports (with a capital-labor ratio of 0.18 for exports versus a ratio of 0.11 for imports in 1997), South Africa is a net **importer** of both capital and labor services (note the negative entries in the "Net trade" columns under "Total Trade" in Table 19). However, the more appropriate comparison, that is, between the factor intensity of net trade (0.03) and that of consumption (0.11), shows that, being a net importer of both capital and labor services, South Africa is relatively capital abundant and exhibits a capital-intensive pattern of trade.

178. South Africa is also a net importer of skilled and unskilled labor services, and thus the correct test condition for skilled labor versus unskilled labor intensity requires a comparison between net trade and consumption in those services (i.e., 0.90 and 0.80, respectively, in 1997). Following Leamer, these results show that South Africa is more endowed with unskilled labor because the skilled-unskilled labor ratio is greater for net trade than for consumption.

179. With respect to the disaggregated trade data, South Africa is revealed through trade to be capital rich in comparison with each of its trading partners.[97] It is not surprising that South Africa's net exports to low-income countries is relatively capital intensive, given its level of income and the development of the manufacturing sector. However, it is somewhat surprising that South Africa's net exports to richer countries is relatively capital intensive. The disaggregated data also demonstrate that South Africa's net exports to its high- and medium-income trading partners is more unskilled labor intensive, while its net exports to low-income partners is more skilled labor intensive, which would be the expected result.

Cross-commodity regression approach

180. This analysis also focuses on net exports of the various manufacturing goods sectors. Table 20 presents the regression results that use a simple ordinary least squares (OLS) estimation procedure, while Tables 21 and 22 contain the results of the logit analysis. For the OLS regressions the dependent variable is net exports scaled by total trade, the scaling is necessary to keep the explanatory variables from picking up the effect of size. As the theory

---

[97] South Africa is a net exporter of factor services to low-income countries but a net importer from high-income countries. The appropriate test condition to determine relative factor abundance is therefore different, but in both cases the conclusion is similar.

Table 18. South Africa: Factor Services Embodied in Actual Trade and Consumption, 1989

Factor	Units	Total Trade				High-Income		Medium-Income		Low-Income	
		Exports	Imports	Net trade	Consumption	Net trade	Consumption	Net trade	Consumption	Net trade	Consumption
Capital	Billions of rand	38	46	-8	481	-13.2	486.1	-0.67	473.6	6.2	466.7
Labor	Thousands of man-years	560	923	-363	9442	-303	9383	-129	9209	94	8986
Capital-labor ratio		0.07	0.05	0.02	0.05	0.04	0.05	0.01	0.05	0.07	0.05
Skilled labor	Thousands of man-years	238	418	-180	4,070	-151	4,041	-59	3,949	40.5	3,849
Unskilled labor	Thousands of man-years	322	505	-183	5,373	-152	5,341	-69	5,259	54	5,136
Skilled-unskilled labor ratio		0.74	0.83	0.98	0.76	0.99	0.76	0.86	0.75	0.75	0.75
Capital/labor abundance				Capital		Capital		Capital		Capital	
Skilled/unskilled abundance				Unskilled		Unskilled		Unskilled		...	

Table 19. South Africa: Factor Services Embodied in Actual Trade and Consumption, 1997

Factor	Units	Total Trade				High-Income		Medium-Income		Low-Income	
		Exports	Imports	Net trade	Consumption	Net trade	Consumption	Net trade	Consumption	Net trade	Consumption
Capital	Billions of rand	113	110	-19	419	-49	549	5	494	13	487
Labor	Thousands of man-years	613	1,043	-558	3,879	-589	4,761	-210	4,382	59	4,114
Capital-labor ratio		0.18	0.11	0.03	0.11	0.08	0.12	-0.02	0.11	0.22	0.12
Skilled labor	Thousands of man-years	276	480	-264	1,723	-283	2,135	-95	1,948	29	1,824
Unskilled labor	Thousands of man-years	337	563	-294	2,156	-306	2,625	-115	2,434	30	2,289
Skilled-unskilled labor ratio		0.82	0.85	0.90	0.80	0.92	0.81	0.83	0.80	0.97	0.80
Capital/labor abundance				Capital		Capital		Capital		Capital	
Skilled/unskilled abundance				Unskilled		Unskilled		Unskilled		Skilled	

Note:

Given factors a and b, where a_t, b_t, a_c, and b_c are the amounts of a and b embodied in net trade and consumption,

Leamer (1980) shows that the country is relatively more endowed in a if and only if one of the following three conditions hold:

(i) $a_t > 0, b_t < 0$,

(ii) $a_t > 0, b_t > 0, a_t/b_t > a_c/b_c$, or

(iii) $a_t < 0, b_t < 0, a_t/b_t < a_c/b_c$

Table 20. South Africa: OLS Regression Results on the Pattern of Trade, 1997

Independent Variable (Total Factor Intensities)	Dependent Variable: Net Exports/Total Trade			
	All partners	High-income partners	Medium-income partners	Low-income partners
Capital-labor ratio	Positive (4.08)***	Positive (3.37)***	Positive (4.97)***	Positive (.23)
Skilled-unskilled labor ratio	Negative (2.02)**	Negative (2.72)**	Positive (.49)	Positive (1.18)
Resource intensity	Negative (.41)	Negative (.97)	Positive (.42)	Positive (1.77)*
Import intensity	Negative (1.38)	Negative (1.28)	Negative (.78)	Negative (.73)
Test for heteroscedasticity 1/	0.003	0.683	0.692	4.78**
Adjusted R^2	0.424	0.338	0.533	0.22

Notes: "Positive" and "negative" denote the sign of the coefficient. *t*-statistics in parentheses. *t*-statistics are computed based on White's heteroscedasticity-consistent standard errors. Asterisks denote significance at 1 (three asterisks), 5 (two), and 10 (one) percent, respectively.
1/ The test for heteroskedasticity is an F-test (Reset). Asterisk suggests the presence of heteroscedasticity.

Table 21. South Africa: Results of Logit Regression Analysis, 1997

	Dependent Variable											
	Total	Total	Total	High Income	High Income	High Income	Middle Income	Middle Income	Middle Income	Low Income	Low Income	Low Income
Constant	-1.94 *	-0.86	-1.68	-2.00 **	-0.72	-0.60	-1.86 *	-1.04 *	-0.93	-0.94	-1.15	-0.48
Capital-labor ratio	2.66 ***		2.47 **	2.77 ***		2.44 **	1.92 *		1.07	-0.21		-0.67
Capital-unskilled labor ratio		2.67 ***			2.76 ***			1.79 *			-0.29	
Skilled-unskilled labor ratio	-1.64 *	-2.44 **	-1.68 *	-1.75 *	-2.52 **	-2.29 **	-0.60	-1.18	-0.33	1.27	1.01	1.50
Intermediate imported inputs			-0.16			-0.16			-0.38			-0.06
Resource inputs 1/			0.43			0.51			1.66 *			0.92
L-R statistic	9.91 ***	10.24 ***	11.81 **	11.66 ***	11.76 ***	11.98 **	6.79 **	6.83 **	10.68 **	4.22	4.33	6.28
R^2	0.28	0.29	0.32	0.32	0.32	0.33	0.18	0.18	0.28	0.13	0.14	0.20

Notes: Numbers denote *t*-statistics. *** represents significance at 1 percent, ** at 5 percent, and * at 10 percent.
Dependent variable is a binary variable: If net exports > 0, dependent variable = 1; 0 otherwise.
1/ Direct intermediate inputs of the agriculture and mining sectors.

Table 22. South Africa: Results of Logit Regression Analysis with Pooled 1989 and 1997 Data

	Dependent Variable											
	Total	Total	Total	High Income	High Income	High Income	Middle Income	Middle Income	Middle Income	Low Income	Low Income	Low Income
Constant	-1.94 *	-1.87 *	-1.94 *	-2.00 **	-1.97 **	-1.32	-1.86 *	-2.17 **	-2.23 **	-0.94	0.30	0.34
Dummy 1/	1.27			0.84			-0.07			2.14 **		
Capital-Labor ratio	2.66 ***	3.76 ***	3.62 ***	2.77 ***	3.45 ***	3.35 **	1.92 *	2.85 ***	2.49 **	-0.21	-0.25	0.17
dum_kl 2/	-0.52	-1.27		-1.15	-2.30 **		-0.51	-1.79 *		-0.23	0.82	
Skilled-unskilled labor ratio	-1.64 *	-2.69 ***	-2.21 **	-1.75 *	-2.32 **	-2.87 **	-0.60	-0.53	0.13	1.27	0.54	0.49
dum_su 3/	-1.22			-0.32			0.36			-1.57		
L-R statistic	24.29 ***	22.27 ***	21.00 ***	18.57 ***	17.71 ***	14.21	11.49 **	11.34 ***	8.48 **	6.77	1.37	0.40
R^2	0.33	0.30	0.28	0.26	0.25	0.20	0.16	0.16	0.12	0.12	0.02	0.01

Notes: Numbers denote *t*-statistics. *** represents significance at 1 percent, ** at 5 percent, and * at 10 percent.
Dependent variable is a binary variable: If net exports > 0, dependent variable = 1; 0 otherwise.
1/ *Dummy* = 1 in 1989; 0 in 1997.
2/ *Dum_kl* = *Dummy* * capital labor rato.
3/ *Dum_su* = *Dummy* * skilled-unskilled labor ratio.

is agnostic about the quantitative magnitude of the parameters, only their sign (along with the statistical significance) is reported. All *t*-statistics are computed based on White's heteroscedasticity-consistent standard errors.

181. For the logit analysis, regressions were done using 1997 data only (Table 21), and also pooling the 1989 and 1997 data (Table 22). Two specifications were used to study the determinants of overall trade in manufactured goods, as well as of trade with the high-, middle-, and low-income countries separately. The first specification used the capital-labor ratio and the skilled-unskilled labor ratio as the two explanatory variables, while the second specification used the capital-unskilled labor ratio and the skilled-unskilled labor ratio as the two explanatory variables. In the analysis using the pooled data, only the results from the first specification are reported.

182. The OLS and logit regressions using the 1997 data produced similar results. First, consistent with the calculation of the rank correlation coefficients in Subsection B, the coefficient on the capital-labor ratio is positive and significant in relation to net exports with high- and middle-income partners, but not with low-income partners. This outcome indicates that, the higher the capital-labor ratio in the production of a commodity, the greater the probability that South Africa will be a net exporter of that commodity. Furthermore, in the case of trade with high-income partners, this is true even after controlling for resource intensity.[98] In other words, South Africa's trade is not capital intensive because it is also concurrently resource intensive, as the ILO study tended to suggest. Second, the coefficient on the skilled-unskilled labor ratio is negative and significant for trade with high-income partners, indicating that, the higher the skilled-unskilled labor ratio in the production of a given commodity, the lower the probability that South Africa will be a net exporter of that product. That coefficient, however, is insignificant for trade with medium- and low-income partners.

183. The logit analysis of the pooled 1989 and 1997 data upholds the results obtained from the analysis of the 1997 data alone. In addition, because of the negative and significant value of the variable formed by interacting a time dummy variable with the capital-labor ratio coefficient (*dum_kl*), it appears as if the capital intensity of net exports to high-and medium-income countries increased over the 1989-97 period.[99]

184. Thus, South Africa's net exports to high-income countries are capital intensive and tend to be more unskilled labor intensive. Net exports to middle-income countries are also

---

[98] For trade with middle-income countries, the results are more ambiguous. The logit analysis suggests that, when resource intensity is accounted for, the capital-labor ratio loses its significance as an explanatory variable. However, the OLS regression indicates that the capital-labor ratio is significant even after controlling for resource intensity.

[99] The dummy variable was set equal to 1 in 1989 and 0 in 1997.

capital intensive, but the distinction between skilled and unskilled labor does not appear to be important. For net exports to low-income countries, the regression analysis suggests that relative factor intensities are not significant in explaining the prevailing pattern of trade.

F. Conclusion

185. South Africa, which would be expected to be relatively labor abundant in its trade with high-income countries, is actually revealed through trade to be relatively capital abundant. Despite being relatively well endowed with labor in **quantity** terms, the actual trading pattern suggests that, in **price** terms, labor is relatively expensive. This situation draws attention to aspects of the labor market that may need to be addressed.

186. These counterintuitive results may have an alternative explanation. Specifically, the standard HOS theorem assumes that countries have identical production technologies and employ the same production techniques. If this is not the case, then differences in production technologies and techniques, as well as different factor endowments, will determine trading patterns. Apartheid-era economic policies affecting the price of capital and labor may still be exerting an important influence on the choice of South Africa's capital-intensive production techniques. However, lingering effects of apartheid-era policies are unlikely to explain the increased capital intensity of net exports over the 1989-97 period.

References

Bowen, Harry, and Leo Sveikauskas, 1992, "Judging Factor Abundance," *Quarterly Journal of Economics,* Vol. 107 (May), pp. 599-620.

Deardorff, Alan, 1984, "Testing Trade Theories and Predicting Trade Flows," in *Handbook of International Economics*, Vol. 1, ed. by Ronald W. Jones and Peter B. Kenen (Amsterdam: North-Holland).

Leamer, Edward, 1980, "The Leontief Paradox, Reconsidered," *Journal of Political Economy,* Vol. 88: (No. 3), pp. 495-503.

Leontief, Wassily, 1954, "Domestic Production and Foreign Trade: The American Capital Position Re-examined," *Econ. Internazionale*, Vol. 7 (No. 1), pp. 3-32. Reprinted in *Readings in International Economics*, ed. by Richard Caves and Harry Johnson (Homewood, Illinois: R.D. Irwin for the American Economic Association, 1968).

Tsikata, Yvonne, 1998, "Liberalization and Trade Performance in South Africa" (unpublished; Washington, D.C.: World Bank).

International Labor Organization, 1999, Studies in the Social Dimension of Globalization: South Africa (Geneva: International Labor Organization).

VI. Inflation Targeting as a Monetary Policy Framework in South Africa[100]

187. A number of industrial countries have adopted a framework for monetary policy that became known as inflation targeting in the 1990s.[101] In most cases, inflation targeting was introduced after unsuccessful attempts to target some monetary aggregate (e.g., Canada) or the nominal exchange rate (e.g., United Kingdom and Sweden). Its increasing popularity also has been nourished by a growing consensus among policymakers, economists, and the public in general that there is no long-term trade-off between inflation and output, and that price stability fosters economic growth. For similar reasons, several emerging market economies have recently adopted, or indicated that they intend to adopt, inflation targeting as their monetary policy framework.[102]

188. In South Africa, the general monetary policy objective is "to protect the value of the rand."[103] The South African Reserve Bank (SARB) attempts to achieve this objective by gradually bringing core inflation[104] down to the level prevailing in South Africa's major trading partners over the medium term.[105] Given this goal, the SARB has opted for an eclectic

---

[100] Prepared by Gunnar Jonsson.

[101] Industrial countries that have adopted inflation targeting include, in chronological order, New Zealand, Canada, United Kingdom, Sweden, Finland, Australia, and Spain. Useful references on their experiences with inflation targeting are Leiderman and Svensson (1995), Debelle (1997), Bernanke and Mishkin (1997), and Mishkin and Posen (1997). However, since January 1999, Finland and Spain should no longer be regarded as inflation-targeting countries, as these countries have joined the European Monetary Union.

[102] The Czech Republic has operated a full-fledged inflation targeting regime since December 1997, while Brazil adopted inflation targeting in mid-1999. Israel, Chile, and Mexico are examples of countries that announce a one-year ahead inflation target as the objective of monetary policy, although other objectives (such as the nominal exchange rate) have also played an important role in the policy formulation (see, e.g., Morandé and Schmidt-Hebbel (1999) for discussions). Poland and Hungary have recently announced multiyear inflation targets, with an eye to eventually joining the European Monetary Union. An examination of the scope for inflation targeting in developing countries can be found in Masson, Savastano, and Sharma (1997).

[103] See South African Reserve Bank (1999a).

[104] Core inflation excludes changes in mortgage interest costs as well as overdraft/personal loans, fresh-food prices, and various indirect taxes from the headline consumer price index.

[105] See South African Reserve Bank (1999b).

approach to monetary policy, which is based on informal guidelines for growth in broad money and bank credit extension, supplemented by the monitoring of a range of economic and financial indicators.

189. More recently, Governor Mboweni of the SARB has argued that South Africa should "move away from the 'eclectic' or informal inflation-targeting framework to formal inflation targeting,"[106] and the Minister of Finance, Mr. Manuel, has indicated that a formal inflation targeting framework will be announced and implemented during 2000. The purpose of this section is to examine the implications of the adoption of a formal inflation-targeting framework in South Africa. Subsection A briefly describes the main elements of inflation targeting. Subsection B assesses whether South Africa complies with the institutional and macroeconomic prerequisites for inflation targeting, while Subsection C discusses the relative merits and consequences of adopting inflation targeting in South Africa. Subsection D highlights some specific features of the South African economy, which may be of particular importance when considering an inflation targeting framework. Subsection E concludes and presents some issues for further discussion.

A. Inflation Targeting: General Features

190. The main feature of an inflation-targeting framework is that the central bank adopts or is given a clear mandate to concentrate on achieving an explicit inflation target as the overriding objective of monetary policy. The basic ingredients of inflation targeting include the announcement of a target for future inflation at some low level or range; periodic assessments of expected inflation over the relevant horizon on the basis of a set of variables; and systematic adjustments of the monetary policy instruments to maintain the projected inflation rate in line with the target.[107]

191. As implemented in practice, inflation targeting is characterized as a fairly broad framework for the conduct of monetary policy rather than a specific policy rule. Indeed, inflation-targeting central banks maintain significant scope for applying discretion in the conduct of monetary policy, as the inflation targets typically need to be attained over a multiyear horizon and are in many cases specified in terms of bands rather than point estimates.

192. Another important element in an inflation-targeting framework is a relatively high degree of transparency of monetary policy and accountability of the central bank. All inflation-targeting central banks have intensified their efforts to communicate and clarify to the public the goals of monetary policy, describe and justify the policy measures being taken

---

[106] See South African Reserve Bank (1999c).

[107] See, for example, Svensson (1997a) for a theoretical discussion of the mechanisms of inflation targeting.

to achieve these goals, and explain the recent performance of monetary policy, always with a focus on future inflation as the fundamental objective of the actions of the central bank. A number of vehicles have been used for greater transparency, including regular publications of extensive inflation reports, appearances of central bank officials before parliamentary committees, and published minutes of monetary policy council meetings.

193. The inflation target also provides a yardstick against which the central banks' actions can be evaluated, and, with the enhanced transparency associated with inflation targeting, the central banks have naturally become more accountable about their actions in the public debate and the political process.

B. The Feasibility of Inflation Targeting in South Africa

194. The prerequisites needed to adopt an inflation-targeting framework for monetary policy include institutional aspects, such as an absence of commitments to objectives that might conflict with low inflation; an independent central bank, at least operationally; sufficiently developed capital and money markets; and a reasonable degree of control and forecastability of the inflation process. In general, South Africa satisfies these conditions.

Institutional aspects

195. In an inflation-targeting regime, the paramount goal of monetary policy is achieving the inflation target. Any other goal can be pursued only to the extent that it is consistent with the inflation target. The conduct of monetary policy cannot be subordinated to fiscal needs, such as reliance on revenue from seigniorage or a need to provide central bank financing to the government, nor can monetary policy be used to ultimately target the exchange rate or any other nominal variable. In South Africa's case, there is no fiscal dominance of monetary policy, nor is there a commitment to target the nominal exchange rate or other nominal variables with monetary policy.

196. The central bank must be capable of pursuing the inflation goal free of constraints on its use of monetary policy instruments. This does not necessarily mean it must be free to set its own goals (goal independence), but it must be free to use the monetary policy instruments at its disposal in the pursuit of the inflation goal (instrument independence). Actual monetary policy decisions are typically taken by a Monetary Policy Committee of the central bank or by the central bank board. In all inflation-targeting countries, the central banks have instrument independence, but the process of setting the inflation target varies across countries. In South Africa, the SARB has constitutionally granted goal and instrument independence, and it is free to unilaterally announce a move to inflation targeting if it so desires. The fact that the Ministry of Finance also supports the move to inflation targeting is an additional advantage.

197. A reasonably well-developed financial market facilitates the operations of an inflation-targeting framework. Policy instruments need to be effective in influencing the economy, while money and capital markets must be sufficiently developed so as to react

quickly to the use of these instruments. South Africa has quite sophisticated financial markets, and monetary policy changes tend to influence the money market interest rates in a transparent and rapid fashion. The SARB's repurchase system, together with other open market operations for managing liquidity, constitute an appropriate framework for effective monetary policy operations.

Macroeconomic aspects

198. To control inflation (under any monetary policy framework), there must be a reasonably stable relationship between the monetary policy instruments and inflation outcomes. In an inflation-targeting framework, inflation must also be forecastable to a reasonable degree. Given the forward-looking nature of the inflation target, changes in monetary policy have to be made on the basis of forecasted changes in inflation. This requires that the authorities be able to develop a satisfactory forecasting framework.

199. While South Africa has undergone a degree of structural change in recent years, inflation appears to be relatively well behaved and forecastable. The SARB regularly undertakes and revises its inflation projections using models that are based on a range of financial and economic variables, including a set of leading indicators of inflation (see, e.g., Pretorius (1997)). Further refinement and strengthening of the SARB's forecasting framework would help improve the accuracy of the inflation projections, which is critical in an inflation-targeting regime. Moreover, it is possible that some further experience with the repurchase system (which was introduced in March 1998), including how changes in the repurchase rate feed into the inflation forecasts, is needed before a full-fledged inflation-targeting framework is introduced.[108]

200. Notwithstanding these considerations, it can be noted that many financial and macroeconomic aggregates in South Africa tend to interact in a similar way as in many other more developed economies. In an empirical analysis of the relationship between inflation and a set of financial and macroeconomic aggregates in Fajgenbaum and others (1998), it was argued that a number of reasonable leading indicators for inflation could be identified. It was also argued that, despite the structural shifts in the economy, there exists a stable money demand type of relationship involving domestic prices, broad money, real income, and nominal interest rates, with plausible estimates of the long-run coefficients, as well as a long-

[108] These aspects are recognized by the SARB. As stated by Casteleijn (1999) in the SARB's *Quarterly Bulletin,* "[the need for] a continuous assessment of the relationship between the instruments of monetary policy and the inflation target... [and a] comprehensive forecasting framework... appear to preclude the immediate adoption of an explicit inflation target."

run relationship among domestic prices, foreign prices, and the nominal effective exchange rate.[109]

201. Moreover, an extension of that study—described in Appendix I—shows that the variables tend to adjust and interact in the short run in a way that is similar to that typically found in developed economies. In particular, it is found that a shock to the nominal exchange rate has an almost immediate impact on domestic prices, while shocks to either money or output affect domestic prices with a lag of four-six quarters. It is also found that a monetary shock has a temporary impact on real output before inflation picks up. These results are similar to those found in a number of other countries. For example, Sims (1992) uses a similar vector autoregression (VAR) approach to study the effects of monetary policy in five OECD countries; he shows that a shock to the money equation results in a temporary real output response in France, United Kingdom, and the United States, while prices adjust with a lag. He also shows that a positive shock to real output exerts upward pressure on domestic prices with a lag of several quarters in most countries. Together, these results suggest that it would be possible to develop a forecasting model for inflation in South Africa that is similar to those used in other countries that have implemented inflation targeting.

C. Relative Merits and Implications of Inflation Targeting in South Africa

202. The main advantage of adopting an inflation-targeting framework in South Africa would be to raise the likelihood of attaining and maintaining a low and stable rate of inflation, with concomitant beneficial effects on economic growth.[110] An inflation-targeting framework could help the SARB resist pressures to conduct expansionary monetary policies inspired by short-term considerations, as it would help in focusing the attention of economic agents, politicians, the press, and the public on the long-term objectives and consequences of monetary policy. Moreover, the explicit mandate of the SARB to achieve low inflation, together with the increased transparency of monetary policy and accountability, would tend to reduce uncertainties among price- and wage-setters about the future path of the inflation rate, and thereby contribute to more coordinated and accurate inflation expectations.

203. A second advantage of an inflation-targeting framework (compared with a framework based strictly on monetary or exchange rate targeting) is that, if judiciously implemented, it could lead to a better cyclical adjustment of the economy. This is because an inflation-targeting framework provides substantial scope for applying discretion in the conduct of

---

[109] The long-run coefficients on the income elasticity of the demand for broad money and on the nominal effective exchange rate in the "purchasing power parity" relationship were estimated at about unity. This is in line with empirical results found for many industrial countries (see Fase (1993) and Habermeier and Mesquita (1999)).

[110] The theoretical argument for how an inflation-targeting regime could eliminate the inflation bias in an economy is described in Appendix II.

monetary policy, and thus provides the central bank with flexibility to deal with aggregate demand and supply shocks, while a target for the exchange rate or some monetary aggregate generally implies more rigidity in this regard.[111]

204. An inflation-targeting framework, however, provides no guarantee that the central bank will use its discretion appropriately in formulating monetary policy. For instance, the central bank might interpret its mandate too strictly and attempt to target "headline" inflation over a relatively short time horizon, which can lead to excessive instability in other macroeconomic variables, such as output, interest rates, and the exchange rate. In this context, a potential concern is that in a small, open economy that is prone to external shocks, inflation targeting could generate large fluctuations in the real exchange rate with concomitant fluctuations in the external current account balance. However, these fluctuations could be accommodated either by introducing well-designed "escape clauses" or by establishing a sufficiently wide band around the inflation target (see below). Moreover, the simplest theoretical model of inflation targeting indicates that the "credibility versus flexibility" trade-off can be avoided by adopting an appropriately defined inflation target. This means that the average rate of inflation could be reduced without resulting in higher output volatility (see Appendix II for a more detailed discussion). In addition, empirical evidence from countries that have implemented inflation targeting tends to support this argument (see, e.g., Mishkin (1999), Jonsson (1999a), and Sarel (1999)).

205. As with any monetary policy framework, the introduction of inflation targeting involves the risk that an initial disinflation process could result in short-term output costs if the public does not quickly find the policy credible. Of course, these costs will tend to be lower the more effective the SARB is in explaining its objective and the necessary policies to achieve it, the better the public understands the rationale for adopting inflation targeting, and the more explicit the government is in endorsing the inflation targeting regime. Also, adjustments of inflation expectations would be facilitated if the targeted path for the decline in inflation was perceived as realistic. To address these issues, the SARB has set up a Monetary Policy Committee, which meets every six weeks to assess policy and operational issues, and a summary of its deliberations is being made public. In addition, the Governor of the SARB has indicated that he will consult with civil society, including business and labor representatives, before introducing inflation targeting, so as to enable all parties to become familiar with the new framework.

206. While it can be argued that the SARB has been implementing an informal inflation-targeting framework, and that a move to a formal inflation-targeting framework would not change the actual conduct of monetary policy in a significant way, it is likely that the absence of an explicit and well-defined target for monetary policy has created some uncertainties among economic agents about the SARB's objectives. These uncertainties might have been

---

[111] It should be noted that, from a welfare perspective, it might be optimal to not stabilize against certain supply-side shocks.

reinforced by the observations that the growth rates in broad money and credit extension have exceeded their indicative guidelines in recent years,[112] and by the occasionally heavy intervention by the SARB in the spot and forward foreign exchange markets. Thus, to the extent that a formal or explicit inflation-targeting framework would be perceived as a stronger commitment to reduce inflation over the medium term and bring more clarity to the conduct of the SARB's monetary policy operations, some of these uncertainties would be eased. This would, in turn, improve the accuracy and coordination of inflation expectations, and possibly reduce the risk premium on investment in South Africa, implying a lower path for long-term interest rates.

207. Hence, an important implication and advantage of the adoption of a formal inflation targeting regime in South Africa would be the associated enhancement of both the transparency of monetary policy and the accountability of the SARB. This enhancement would take the form of frequent public disclosures of the SARB's inflation projections and associated monetary policy measures by, for example, regular publications of inflation reports and the release of more general economic forecasts, as well as regular testimony to parliament. Moreover, the adoption of explicit targets for monetary policy and the accountability that this involves would impose a natural discipline upon the SARB, which, in turn, would help bolster its credibility.

208. Moreover, in the event of a breach of the inflation target (which occasionally can be expected because of the lags involved in the monetary transmission mechanism), the increased transparency of monetary policy and accountability of the SARB should, to some extent, make apparent whether such a breach is caused by a failure to respond to inflationary pressures, whether it was foreseeable at the time of the policy decision, or whether it reflects shocks outside the control of the SARB.

D. Specific Concerns in South Africa

209. In assessing whether inflation targeting is a feasible and desirable framework for South Africa, three additional questions need to be answered. First, does the fact that South Africa is an emerging-market economy, with the associated risk for large swings in capital flows and the exchange rate, pose any particular problems for inflation targeting? Second, how does the presence of potentially divergent views on what constitutes an appropriate monetary policy stance across business and labor representatives, the government, and the SARB affect the feasibility and desirability of inflation targeting? Third, is the SARB's goal of reducing its large open foreign exchange position in the forward market consistent with an inflation-targeting framework?

---

[112] Growth in broad money exceeded the guideline range of 6-10 percent every year between 1994 and 1998. However, by November 1999, the growth rate had fallen to 8½ percent (12-month rate).

Inflation targeting in an emerging market economy

210. As noted in the introduction, the Czech Republic and Brazil have recently implemented a full-fledged inflation-targeting framework, and other emerging market economies may follow in the near future. One important feature of the emerging markets in recent years, including South Africa, has been the very large and volatile capital flows and associated swings in the nominal exchange rate. How do these issues affect the feasibility and desirability of inflation targeting?

211. Three aspects deserve to be mentioned. First, it is possible that inflation targeting could, to some extent, actually dampen the volatility in the capital flows and the associated sharp swings in the nominal exchange rate. In many emerging-market economies, the currency has been attacked precisely because the central banks have had an implicit or explicit exchange rate objective that was not perceived as credible (e.g., Mexico in 1994 and Brazil in 1998/99). In South Africa, some of the volatility in the foreign exchange markets may have been driven by uncertainties about the SARB's objectives regarding the exchange rate. Consequently, to the extent that the adoption of inflation targeting signals a clear commitment to a flexible exchange rate regime, such a framework should contribute to more stable foreign exchange and capital market conditions.

212. Second, in the case of South Africa, it is interesting to note that despite the large and volatile capital and exchange rate movements during the 1990s, fluctuations in inflation have been relatively limited, especially with respect to core inflation. In particular, while large capital outflows in 1994, 1996, and 1998 caused the nominal exchange rate to depreciate substantially, the impact on (core) inflation was modest.[113] Although this pattern possibly is associated with a contemporaneous movement in economic activity, it seems that the SARB has been successful in controlling the inflationary impulses generated by the volatile capital flows.

213. Third, as discussed above, an inflation-targeting regime allows for certain fluctuations in the actual inflation rate, especially if the inflation target is set in terms of a band rather than a point. Of course, to be meaningful, the width of a band would have to be limited, although the possibility of volatile capital flows may argue in favor of adopting a band around the inflation target that is somewhat wider than the common ± 1 percentage point.[114]

---

[113] For example, although the nominal effective exchange rate depreciated by 20 percent between March and September 1998, core inflation only increased from 7 percent in March 1998 to 8 percent in March 1999; it remained at about this level throughout 1999 despite a large increase in fuel prices.

[114] The United Kingdom, Sweden, and Canada are examples of countries that have adopted some form of band around the target of this magnitude.

Inflation targeting and divergent views on monetary policy

214. In the economic literature (and in the South African press) it has been debated whether the central bank or the government should set the inflation target, that is, whether the central bank should have goal or instrument independence. In this context, a more general question is whether it is necessary to form a broad consensus about the appropriate monetary policy among not only the central bank and the government, but also the business community, the labor organizations, etc., before inflation targeting is implemented.

215. To start with, and as discussed above, it can be noted that inflation-targeting economies differ on the issue of goal versus instrument independence for the central bank (see Jonsson (1999a)). The features of the labor market and various political institutions (such as the degree of trade unionization, wage-bargaining system, political ideology of the government, etc.) also vary substantially across the inflation-targeting countries. Moreover, it is unclear whether there ever was a general consensus among the various interest groups about monetary policy when inflation-targeting was introduced in these countries. However, despite these differences, the macroeconomic outcomes under inflation targeting seem to be quite similar across the countries that have adopted this framework.

216. Although the South African authorities managed to reduce inflation at a relatively steady pace during the 1990s without any formal or apparent consensus among the various interest groups in the economy, it is important to emphasize that a formal inflation-targeting framework would be more effective when economic policies are well coordinated.[115] If this is not the case, the disinflation process and adjustments to adverse shocks will generate higher short-term output costs, at least until credibility is established. Similarly, structural policies will also play an important role in determining the cost associated with achieving and maintaining a lower inflation rate—a flexible labor market will help lower the output costs, as wage increases would adjust to lower inflation and aggregate shocks, while competitive product markets can help spread the benefits of lower inflation more rapidly. Because of these arguments, the Governor has argued that the inflation target should be set jointly by the Reserve Bank and the government, that the coordination of policies should be clearly spelled out, and that all stakeholders must be consulted, including business and the trade union movement (see South African Reserve Bank (1999c)).

Inflation targeting and the foreign exchange position of the SARB

217. By international standards, South Africa's level of international reserves is quite low; at the same time, the SARB has large outstanding forward foreign exchange liabilities. In

---

[115] Other studies have emphasized the importance of this argument in the case of South Africa and added that an explicit approval of an inflation-targeting framework by the Ministry of Finance would enhance credibility and confidence in the government's overall macroeconomic strategy (see CREFSA (1998) and Casteleijn (1999)).

response, the SARB gradually reduced these liabilities and increased its international reserves during 1999, and announced that it intends to continue this process.[116] In this context, a question often raised is whether these objectives are consistent with the implementation of an inflation-targeting regime.

218. In principle, a gradual reduction of the forward position and/or a buildup of reserves are compatible with inflation targeting. The reason is that the SARB can achieve its objectives with regard to international reserves (spot and forward) by operations in the foreign exchange markets (i.e., purchases and sales of foreign exchange) and then assess whether, and to what extent, these operations affect variables that are important in the inflation-forecasting framework (such as the nominal exchange rate). Given this information, the SARB would adjust its interest rate instrument accordingly, in order to achieve the inflation objective.

219. In this context, it is interesting to note that Sweden had an open forward foreign exchange position of about US$22 billion when the Riksbank introduced an inflation targeting regime in January 1993. Sweden has achieved price stability since then, and the net forward position of the Riksbank was virtually eliminated over the course of the next four years.

E. Conclusion and Discussion

220. This paper suggests that a monetary policy framework based on inflation targeting could represent an improvement over the current policy framework in South Africa, as it would help clarify the monetary policy objectives of the SARB, enhance the transparency of its operations, and strengthen the SARB's accountability. This could contribute to more accurate and coordinated inflation expectations which, in turn, would help in reducing output volatility, and improving the long-term outlook for growth and development. It is important to keep in mind, however, that in practice the success of inflation targeting depends on the specific manner in which it is conducted.

221. South Africa satisfies the main prerequisites for adopting an inflation-targeting regime, including an absence of commitments to macroeconomic objectives that might conflict with low inflation, an independent central bank, and relatively developed capital and money markets. Nevertheless, some additional preparatory work may need to be undertaken before inflation targeting can be effectively introduced, including further experience with, and analysis of, the operational aspects of the repurchase system and a refinement of the SARB's inflation-forecasting framework.

222. Moreover, a number of largely technical issues will need to be addressed, including, for example, which measure of inflation should be targeted, what its initial level should be,

---

[116] See South African Reserve Bank (1999b).

and what would be its subsequent time path. These issues are beyond the scope of this section, but it can be noted that some inflation-targeting countries have specified the inflation target in terms of a headline consumer price index (CPI), while other countries have established targets based on some form of "underlying" or core inflation measure. The advantage with targeting headline CPI is that it is usually widely accepted and well publicized, while a main disadvantage is that it can be quite volatile and move perversely (in the short run) in response to monetary policy changes. For example, when mortgage interest charges are included in the CPI measure (as is the case in South Africa), a tightening of monetary policy could have the effect of raising measured inflation as the higher cost of funds leads to higher mortgage costs. However, the choice of price index may not be very important in determining the appropriate level of short-term interest rates. The reason is that, under an inflation-targeting framework, monetary (or interest rate) policy is guided by the difference between the inflation target and projected inflation, and, although the current rate of inflation may vary with different measures of inflation, the projected rate of inflation in, say, two years, is likely to be quite similar. For example, the difference between headline and core inflation in South Africa was unprecedently high at 6.3 percentage points in October 1999 (headline inflation was 1.7 percent, while core inflation was 8 percent). Notwithstanding this very large gap, the difference in the two-year-ahead median forecasts for headline and core inflation among 21 analysts/forecasters was only 0.4 percentage point in December 1999.[117]

223. The initial level of, and subsequent path for, the inflation targets in South Africa would in part depend on the prevailing rate of inflation at the time of introduction of the new framework. In some countries, where inflation was significantly higher than the ultimate target, a prespecified timetable of gradual disinflation was adopted.[118] Given that any long-run inflation target for South Africa would likely be close to the inflation rate in its major trading partners, and that the actual inflation rate in the near future might exceed this rate, the adoption of a gradual disinflation process seems sensible. The period over which such a disinflation might occur and the width of any band adopted during such a process are clearly matters for further consideration.

---

[117] The median forecast (reported by Reuters) for headline inflation in 2001 was 5.5 percent, while it was 5.9 percent for core inflation.

[118] New Zealand, Canada, and the Czech Republic are examples of countries that adopted a targeted path for inflation that declined over time.

References

Barro, Robert J., and David B. Gordon, 1983, "A Positive Theory of Monetary Policy in a Natural Rate Model," *Journal of Political Economy*, Vol. 91 (August), pp. 589-610.

Bernanke, Ben S., and Frederic S. Mishkin, 1997, "Inflation Targeting: A New Framework for Monetary Policy?" *Journal of Economic Perspectives*, Vol. 11 (Spring), pp. 97-116.

Casteleijn, Anton J. H., 1999, "The Viability of Implementing an Inflation Targeting Monetary Policy Framework in South Africa," *Quarterly Bulletin*, South African Reserve Bank, June, pp. 37-47.

CREFSA, 1998, "Is Inflation Targeting a Viable Option in South Africa?", *Quarterly Review,* Centre for Research into Economics and Finance in Southern Africa, London School of Economics, Vol. 2, pp.17-26.

Debelle, Gay, 1997, "Inflation Targeting in Practice," Working Paper 97/35 (Washington: International Monetary Fund).

Fajgenbaum, José, and others, 1998, *South Africa – Selected Issues*, IMF Staff Country Report No. 98/96 (Washington: International Monetary Fund).

Fase, M. M. G., 1993, "The stability of the Demand for Money in the G7 and EC countries: a Survey," De Nederlandsche Bank, Research Memorandum, 9321,Amsterdam: De Nederlandsche Bank).

Habermeier, Karl F., and Marie Mesquita, 1999, "Long-Run exchange Rate Dynamics: A Panel Data Study," IMF Working Paper 99/50 (Washington: International Monetary Fund).

Johansen, Soren, 1991, "Estimation and Hypothesis Testing of Cointegrating Vectors in Gaussian Vector Autoregressive Models," *Econometrica*, Vol. 59, (November), pp. 1551-80.

Jonsson, Gunnar, 1997, "Monetary Politics and Unemployment Persistence", *Journal of Monetary Economics*, Vol. 39 (July), pp. 303-25.

_____, 1999a, "The Relative Merits and Implications of Inflation Targeting for South Africa," IMF Working Paper 99/116 (Washington: International Monetary Fund).

_____, 1999b, "Inflation, Money Demand, and Purchasing Power Parity in South Africa," IMF Working Paper 99/122 (Washington: International Monetary Fund).

Kydland, Finn. and Edward Prescott, 1977, "Rules Rather than Discretion: The Inconsistency of Optimal Plans," *Journal of Political Economy*, Vol. 85 (June). Pp. 473-91.

Leiderman, Leonardo, and Lars E. O. Svensson, 1995, *Inflation Targets* (London: Centre for Economic Policy Research).

Lockwood, Ben, 1997, "State-Contingent Inflation Contracts and Unemployment Persistence," *Journal of Money, Credit, and Banking*, Vol. 29 (August), pp. 286-99.

Masson, Paul R., Miguel A. Savastano, and Sunil Sharma, 1997, "The Scope for Inflation Targeting in Developing Countries," IMF Working Paper, 97/130 (Washington: International Monetary Fund).

Mishkin, Frederic S., 1999, "International Experiences with Different Monetary Policy Regimes," *Journal of Monetary Economics*, Vol. 43 (June), pp. 579-605.

_____, and Adam S. Posen, 1997, "Inflation Targeting: Lessons from Four Countries," NBER Working Paper No. 6126 (Cambridge, Massachusetts: National Bureau of Economic Research.

Morandé, Felixe, and Klaus Schmidt-Hebbel, 1999, "The Scope for Inflation Targeting in Emerging Market Economies," unpublished, Santiago, Chile: Central Bank of Chile.

Persson, Torsten., and Guido Tabellini, 1993, "Designing Institutions for Monetary Policy," *Carnegie-Rochester Conference Series on Public Policy, Vol.* 39 (December) pp. 53-84.

Pretorius, W. S., 1997, "Notes on a Composite Leading Indicator of Inflation," *Quarterly Bulletin*, South African Reserve Bank, December, pp. 39-42.

Rogoff, Kenneth, 1985, "The Optimal Degree of Commitment to an Intermediate Monetary Target," *Quarterly Journal of Economics*, Vol. 100 (November), pp. 1169-89.

Sarel, Michael, 1999, "New Zealand's Evolving Approach to Inflation Targeting," Chapter I in New Zealand: Selected Issues and Statistical Appendix, Staff Country Report No. 99/119 by Jahangir Aziz, Jaewoo Lee, and Michael Sarel (Washington: International Monetary Fund).

Sims, Christopher, 1992, "Interpreting the Macroeconomic Time Series Facts: The Effects of Monetary Policy," *European Economic Review*, Vol. 36 (June), pp. 975-1000.

South African Reserve Bank, 1999a, "An Introduction to the South African Reserve Bank," Fact Sheet No. 1, Pretoria.

_____, 1999b, "Statement on Monetary Policy," Issued by Dr. C. L. Stals, Governor of the South African Reserve Bank, Pretoria, March 10.

_____, 1999c, "Address by Mr. T. T. Mboweni, Governor of the South African Reserve Bank at the Seventy-Ninth Ordinary Meeting of Shareholders of the Bank," Pretoria, August 24.

Svensson, Lars E. O., 1997a, "Inflation Forecast Targeting: Implementing and Monitoring Inflation Targets," *European Economic Review*, Vol. 41 (June) pp.1111-46.

_____, 1997b, "Optimal Inflation Targets, 'Conservative' Central Banks, and Linear Inflation Contracts," *American Economic Review*, Vol. 87(March), pp. 98-114.

Walsh, Carl, 1995, "Optimal Contracts for Independent Central Bankers," *American Economic Review*, Vol. 85 (March), pp.150-67.

Short-Run Comovements Among Variables Important for Inflation in South Africa

224. The results of an empirical study presented in last year's Selected Issues paper (SM/98/164), (see Fajgenbaum and others (1998)) show that, in the long run, demand for broad money tends to be stable, with plausible coefficients on the estimated parameters; at the same time, the purchasing power parity (PPP) hypothesis cannot be rejected. However, to draw policy conclusions, the issues of which variables should be treated as exogenous or endogenous and how they interact in the short run become important. Moreover, in an inflation-targeting framework, it would be useful to understand how the economy adjusts toward the long-run equilibria—here described by the money demand and PPP relationships—following various types of shocks. These issues are discussed in this appendix.[119]

225. The main results are that, in the event of a disequilibrium, both domestic prices and the nominal exchange rate adjust to restore PPP, while the short-term interest rate and broad money adjust to restore equilibrium in the money markets. Moreover, shocks to the nominal exchange rate affect domestic prices with a short lag but have a limited impact on real output, while shocks to broad money have a temporary impact on real output before domestic prices adjust.

226. The exogeneity issue was addressed by adding exclusion restrictions on the α matrix in the vector error-correction model[120]

$$\Delta x_t = \mu + \sum_{i=1}^{k} \Gamma_i \Delta x_{t-i} + \pi x_{t-1} + \varepsilon_t \qquad (1)$$

where x is the vector of variables in the system comprising domestic prices (p), broad money ($m3$), real income (y), interest rates (i), foreign prices (q), and the nominal exchange rate (e)—and the matrix π can be written as $\pi = \alpha\beta'$, with β containing the r cointegrating vectors and α describing the speed of adjustments to the long-run equilibria (the error-correcting terms).[121] A zero restriction on any coefficient in the α matrix corresponds to the null hypothesis that the particular variable does not adjust to restore the long-run equilibrium and therefore can be treated as weakly exogenous.

---

[119] The data set was extended to the period 1970:Q1–1998:Q2. See Jonsson (1999b) for a more complete description of this study, including definitions and data sources.

[120] The method originated by Johansen (1991) was used.

[121] The parameters μ and $\Gamma_1, \ldots, \Gamma_k$ are allowed to vary without restrictions, k is the lag length of the model, and ε_t is a vector of normally distributed shocks with mean zero.

227. As expected, the results indicate that foreign prices are clearly exogenous (see Table 23): foreign prices do not adjust to any disequlibria in the South African markets. In the PPP relationship, both domestic prices and the nominal exchange rate should be treated as endogenous, as both variables tend to adjust following deviations from the PPP equilibrium. In contrast, in the money demand relationship, domestic prices (together with real income and long-term interest rates) could be treated as weakly exogenous, as the adjustment following a deviation from the estimated long-run equilibrium in the money market seems to come through the short-term interest rate and, to some extent, through a change in money holdings.[122]

228. As a complement to the above results, the short-run comovements among the variables were examined by generating orthogonalized impulse response functions based on equation (1), while allowing for the two long-run restrictions on the β matrix representing the money demand and PPP relationships (see the top panel of Table 23). This approach allows the investigation of the impact of different types of shocks on both the variables in the model and the estimated equilibrium relationships. In addition, the impulse response functions give an indication of the lag structure in the economy, which could be useful from an inflation-forecasting perspective. Thus, the main focus was on the inflationary impact of shocks to the money, exchange rate, price, and output equations, respectively. Impulse response functions were generated with an eight-year horizon (32 quarters), and each innovation was obtained by a standard Choleski decomposition, where the ordering of the variables in general matters. The somewhat arbitrarily chosen ordering was *q, y, m3, p, e, i-short,* and *i-long*.[123]

229. The results are illustrated in Figures 15 and 16. To start with, a deviation from the long-run PPP relation can occur because of a shock to the nominal exchange rate, domestic prices, or foreign prices. The impacts of shocks to these equations are shown in Figure 15; the left-hand panels show the adjustments over time of some selected individual variables, while the right-hand panels show the developments of the deviations from the estimated long-run PPP equilibrium.

---

[122] The Chi-square statistic of 2.89 for *m3* in Table 23 is significant at the 10 percent level.

[123] The practical significance of the ordering is that a shock to a variable is allowed to have contemporaneous effects only on the variable itself and the succeeding variables in the ordering. Thus, the assumed ordering implies that a shock to, for example, real output may have a contemporaneous effect on the nominal variables *m3, p, e,* and *i*, while a shock to any of these nominal variables can affect real output only with (at least) a one-quarter lag.

Table 23. Weak Exogeneity Tests

Restricted Cointegrating Vectors (β Matrix)

p	*e*	*q*	*m3*	*y*	*i-long*	*i-short*
1	0.88	-1.28	0	0	0	0
1	0	0	-1	1.22	-0.04	0.02
0.99	0.32	-0.90	-0.68	2.41	0.01	0.01

Adjustment Matrix (α Matrix) 1/

p	*e*	*q*	*m3*	*y*	*i-long*	*i-short*
-0.05	-0.25	0	-0.09	0.04	2.43	5.88
(0.02)	(0.10)		(0.03)	(0.02)	(1.29)	(1.50)
0.01	0.33	0	0.11	-0.02	1.34	-10.08
(0.03)	(0.18)		(0.05)	(0.03)	(2.29)	(2.66)
-0.03	-0.23	-0.05	0.15	-0.17	-4.31	6.96
(0.04)	(0.20)	(0.01)	(0.06)	(0.04)	(2.71)	(3.14)

Only restrictions on β:	Chi-sq (3):	6.57
Additional α restrictions:		
q (CV-md and *CV-ppp)* = 0	Chi-sq (2):	0
p (CV-ppp) = 0	Chi-sq (1):	14.18**
e (CV-ppp) = 0	Chi-sq (1):	4.94*
p (CV-md) = 0	Chi-sq (1):	0.24
m3 (CV-md) = 0	Chi-sq (1):	2.89
y (CV-md) = 0	Chi-sq (1):	0.18
i-long (CV-md) = 0	Chi-sq (1):	0.29
i-short (CV-md) = 0	Chi-sq (1):	5.26*

Note: * and ** indicate rejection of the test at the 5 percent and 1 percent significance level, respectively.
1/ Standard errors in parentheses.

230. A positive shock to domestic prices will lead temporarily to an appreciation of the real exchange rate. However, the rand will start to depreciate sharply after three-four quarters peaking after about eight quarters. In fact, the response of the exchange rate will be sufficiently strong to cause an overshooting effect, leading to a temporary real depreciation,

Figure 15. Impulse Responses of Shocks to the PPP Relation

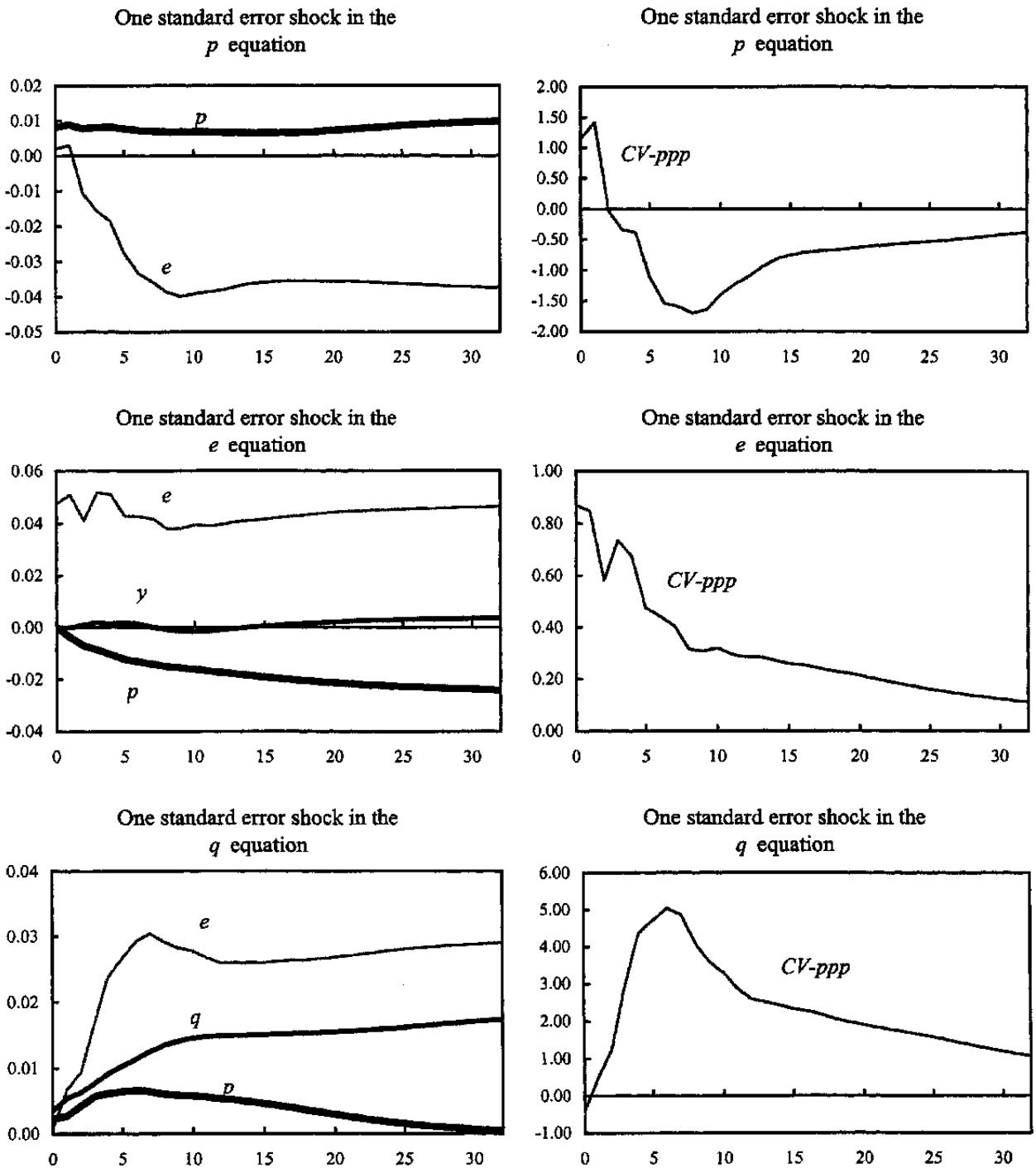
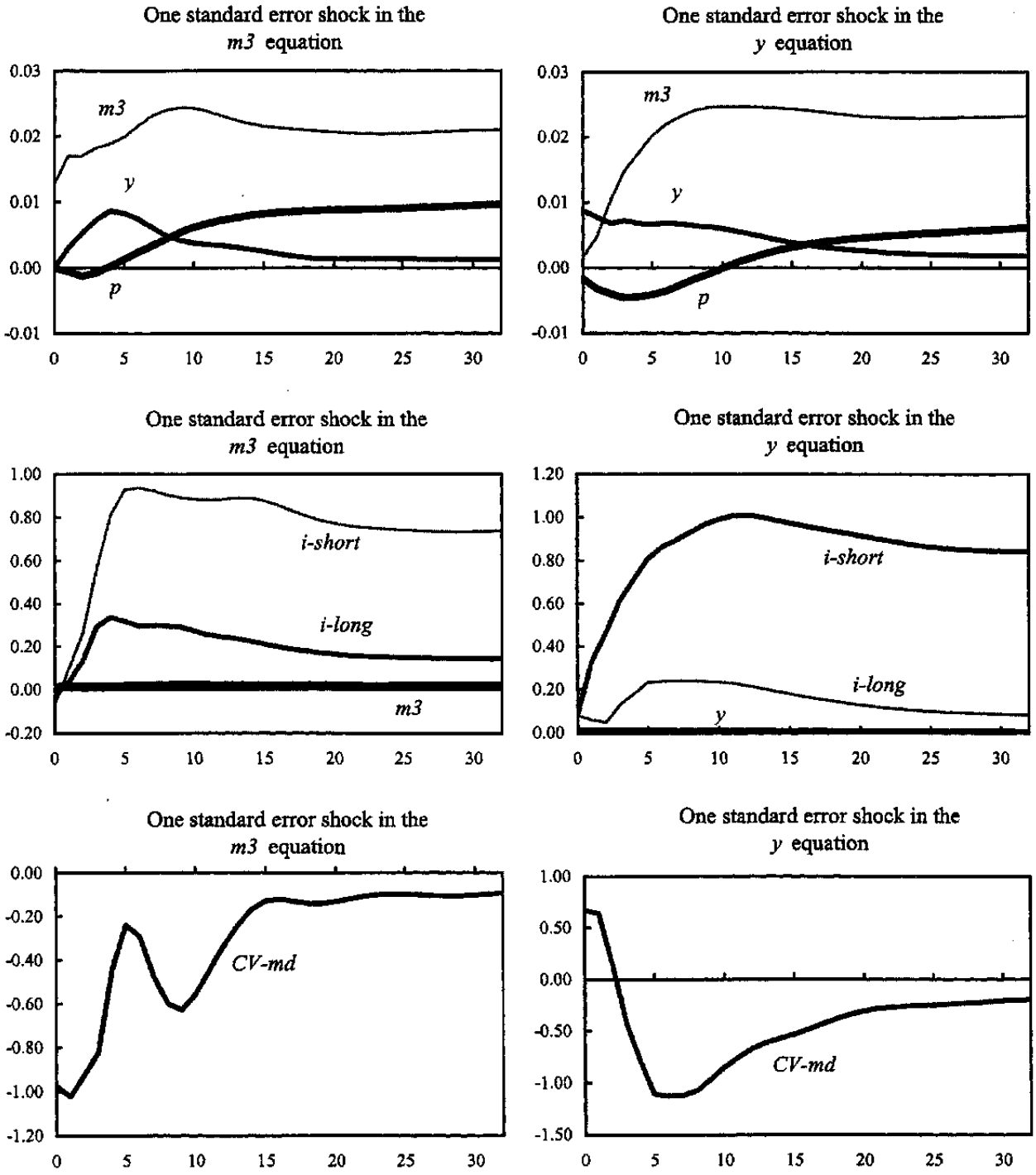


Figure 16. Impulse Responses of Shocks to the Money Demand Relation



before equilibrium is restored, as illustrated in the dynamic effects on the cointegrating vector (denoted *CV-ppp*).

231. Likewise, a negative shock to the nominal exchange rate, that is, a depreciation of the rand, will almost immediately result in higher inflation. The half-life of such a shock seems to be about six quarters, a result that is in line with earlier results from the α matrix. The effect on real output (y) from a shock to the e equation is plotted in the middle panel on the left-hand side. Although a shock to the rand has a quite persistent effect on the real exchange rate (the rand remains, say, depreciated in real terms for several years before full adjustment takes place), the impact on real output is virtually zero.

232. With respect to the short-run comovements of the variables in the money demand function, the left-hand panels in Figure 16 shows the dynamic effect of a one-standard-error shock to the $m3$ equation. Such a shock can originate from different sources and should not necessarily be interpreted as a monetary policy shock. Nevertheless, it is interesting to note that, in contrast to a negative shock to the rand, a positive shock to money leads to an initial but temporary output gain that peaks after about one year. However, the excess money balances also lead to a sharp increase in the short-term interest rate after a couple of quarters. Together, these outcomes imply that the cointegrating relationship is driven back to its equilibrium as larger real balances are offset by higher output and higher short-term interest rates. Domestic prices start to pick up after five-six quarters, implying that real money balances adjust back to their initial level at the same time as the output effect tapers off and equilibrium is restored. Long-term interest rates also pick up after a couple of quarters, indicating that inflation expectations (correctly) rises.

233. Finally, a positive shock to real output leads quickly to higher demand for real balances, and broad money rises. The expected impact on domestic prices is in principle ambiguous, as it depends on whether the output shock is driven by a shift in aggregate demand or aggregate supply. However, the empirical results indicate that a positive shock to output generates inflationary pressures after about four-five quarters; although there will initially be some downward pressure on domestic prices, the end effect is a higher price level. Again, the magnitude of these inflationary pressures seems to be mitigated by a rise in short-term interest rates, possibly reflecting a tightening of monetary policy.

Inflation Targeting and Credibility Issues in Monetary Policy: Theoretical Arguments

234. The inflation-targeting approach to monetary policy is related to the debate in the theoretical literature on rules versus discretion in monetary policy, first initiated by Kydland and Prescott (1977) and Barro and Gordon (1983). In general, this literature shows that monetary policy might be subject to a "time-inconsistency" problem when conducted in a discretionary environment. This generates an "inflation bias," that is, inflation will on average be higher than what the government desires, while employment and output will remain unaffected at their natural levels.

235. Various mechanisms for enhancing the credibility of monetary policy and reducing the inflation bias have been proposed. In particular, Rogoff (1985) shows that it is optimal to delegate monetary policy decisions to an independent central bank that is more "conservative" than the government (and society), in the sense that it attaches a higher weight to inflation than to output/employment. This reduces the inflation bias but is achieved at the expense of higher volatility in output and employment, that is, there is a "credibility versus flexibility trade-off." However, Persson and Tabellini (1993) and Walsh (1995) show that the government can improve on the Rogoff solution by signing a simple linear performance contract with the central bank, which would penalize the central bank for positive inflation rates. If appropriately designed, such a contract could remove the inflation bias entirely without affecting the incentives for output stabilization.[124] Svensson (1997b) then shows that the same solution can be achieved by delegating monetary policy to an independent central bank with an appropriately designed inflation target. Thus, an inflation- targeting regime could remove the inflation bias completely without compromising output stability. The purpose of this appendix is to review these arguments within the simple, "workhorse" model typically used in this literature.

236. A typical model on credibility issues in monetary policy can be viewed as a game between the private sector and the government in which the private sector sets nominal wages, while the government controls inflation. The sequencing of the game is usually assumed to go as follows: the private sector moves first, then a supply-side shock to the economy is realized, after which the policymaker determines the inflation rate, also implying the realization of real wages, employment, and output. In this setup, there are short-term employment and output gains from unexpectedly expansionary monetary policy. Thus, the supply side of the economy is described by an expectations-augmented Phillips curve (a "supply-surprise" curve), where unanticipated policy has real effects:

---

[124] Jonsson (1997) and Lockwood (1997) have extended this result to the case in which unemployment is persistent. In this case, it is shown that a state-contingent linear inflation contract removes the inflation bias without affecting output stabilization.

$$x_t = x^* + \pi_t - \pi_t^e + \varepsilon_t, \qquad (2)$$

where x_t is employment, x^* is the natural level of employment (both variables expressed as natural logarithms), π_t and π_t^e are actual and expected inflation, respectively, and ε_t is a supply-side shock with mean zero.

237. The government's (and society's) loss function is assumed to be defined over inflation and (un)employment, according to

$$L_t = (\pi_t - \hat{\pi})^2 + \lambda(x_t - \hat{x})^2, \qquad (3)$$

where $\hat{\pi}$ and $\hat{x}$ are the government's inflation and employment objectives, respectively, and λ is the weight attached to unemployment relative to inflation. If the employment target is equal to full employment, the unemployment rate in the economy is given by $\hat{x} - x_t$. Minimizing the loss function (3) subject to (2) and assuming that the private sector forms expectations rationally yields

$$\pi_t = \hat{\pi} + \lambda(\hat{x} - x^*) - \frac{\lambda}{(1+\lambda)}\varepsilon_t, \qquad (4)$$

which can be substituted back into (2) to generate

$$\hat{x} - x_t = \hat{x} - x^* - \frac{1}{(1+\lambda)}\varepsilon_t. \qquad (5)$$

Expressions (4) and (5) capture three important insights. First, as long as $\lambda > 0$ and the employment target, $\hat{x}$, is above the natural level of employment, x^*, the expected rate of inflation will be higher than the government's inflation objective.[125] This is the so-called inflation bias in the economy, and this bias is a positive function of λ and $(\hat{x} - x^*)$. Second, the expected rate of unemployment will be equal to the natural rate of unemployment; in particular, it will be unaffected by λ (the relative weight attached to unemployment). Third, the government will use monetary policy to stabilize the supply-side shocks, and the degree of this stabilization will be affected by λ; a higher λ is associated with less volatility in output and (un)employment.

238. Using the basic setup outlined above, Rogoff (1985) shows that the government can make itself better off by delegating monetary policy to an independent central bank with

---

[125] Put differently, whenever the natural rate of unemployment is higher than what the government desires (which in the current setup is assumed to be zero), the inflation bias will be positive.

preferences that are more conservative than those of the government; more precisely, it is optimal for the government to delegate monetary policy to a central bank that has a λ that fulfills $0 < \lambda^{CB} < \lambda^{GOV}$, where superscript *CB* and *GOV* stand for central bank and government, respectively.[126] By examining expressions (4) and (5), it is clear that such a delegation will reduce the inflation bias and the volatility in inflation, but will increase the volatility in unemployment. Thus, although credibility is enhanced, it comes at the expense of less stability in output; there is a credibility versus flexibility trade-off.

239. However, Svensson (1997b) shows that, if monetary policy decisions are delegated to an independent central bank with an appropriately designed inflation target, the inflation bias can be eliminated without increasing the volatility in output. More precisely, assume that the central bank is given a mandate to achieve the inflation target π^*, defined as $\pi^* = \hat{\pi} - \lambda(\hat{x} - x^*)$, while also stabilizing the economy. The central bank's loss function would then be described by

$$L_t = (\pi_t - \pi^*)^2 + \lambda(x_t - \hat{x})^2, \tag{6}$$

where the only difference from (3) is that the central bank's inflation objective now is given by the inflation target π^* rather than $\hat{\pi}$. Minimizing the loss function (3) subject to (2) now yields the following expressions for inflation and unemployment:

$$\pi_t = \pi^* + \lambda(\hat{x} - x^*) - \frac{\lambda}{(1+\lambda)}\varepsilon_t = \hat{\pi} - \frac{\lambda}{(1+\lambda)}\varepsilon_t, \tag{7}$$

and

$$\hat{x} - x_t = \hat{x} - x^* - \frac{1}{(1+\lambda)}\varepsilon_t. \tag{8}$$

Comparing expressions (7) and (8) with (4) and (5), it can be noted that the inflation-targeting regime entirely removes the inflation bias; the expected rate of inflation will equal the inflation objective of the government, $\hat{\pi}$. As in the other cases (described above), the central bank still has an incentive to exploit the short-term Phillips curve, but this is now balanced against the desire to keep inflation at the target level π^*. By defining the inflation target appropriately, the two effects could exactly balance each other, and the inflation outcome would equal the objective of the government (and society), $\hat{\pi}$. The central bank will still stabilize the supply-side shocks, and the magnitude of the stabilization will be the same as in the fully discretionary regime.

---

[126] The proof can be found by inserting expressions (4) and (5) into the government's loss function (3), defining the government's true weight on unemployment relative to inflation to λ^{GOV}, and differentiating the loss function with respect to λ.

VII. The Forward Book of the South African Reserve Bank[127]

240. The South African Reserve Bank (SARB) has operated in the forward foreign exchange markets since the 1960s, and its uncovered position has been, at times, quite large.[128] This foreign exchange exposure has caused concerns among international investors and in the domestic financial markets,[129] and the SARB has stated that its intention is to gradually reduce its participation in the forward markets and eventually dismantle the forward book.[130] This section briefly describes the SARB's operations in the forward market in recent years; examines the implications of the forward operations in financial terms and with regard to any risk premium reflected in the level of interest rates; and discusses the relative merits of external borrowing to pay off maturing forward contracts.

A. Introduction

241. The SARB's net forward foreign exchange liabilities ("the forward book") is depicted in Figure 17 together with its net international reserves. The difference between these series is denoted the "net open forward position" or "the net open foreign currency position" (NOFP) of the SARB. The NOFP is an **open** forward position in the sense that it refers to the difference between the SARB's forward U.S. dollar liabilities and its forward U.S. dollar assets, and it is a **net** position in the sense that the SARB's holdings of (net) international reserves is netted out from its open forward position, that is, it is the part of the open forward position that is not covered by spot (net) reserves. It can be noted that during the 1990s, the SARB chose to substantially increase the NOFP on three occasions when there was sustained downward pressure on the rand: in 1994, during the turbulent pre-election period; in 1996, reflecting concerns in the market about certain political developments,[131] and again in mid-1998, when contagion from the global emerging market crisis affected South Africa. The forward book and the NOFP were reduced markedly between these periods, and again in the period after October 1998.

---

[127] Prepared by Gunnar Jonsson.

[128] Since the mid-1980s, the SARB operates only in the rand-U.S. dollar forward market.

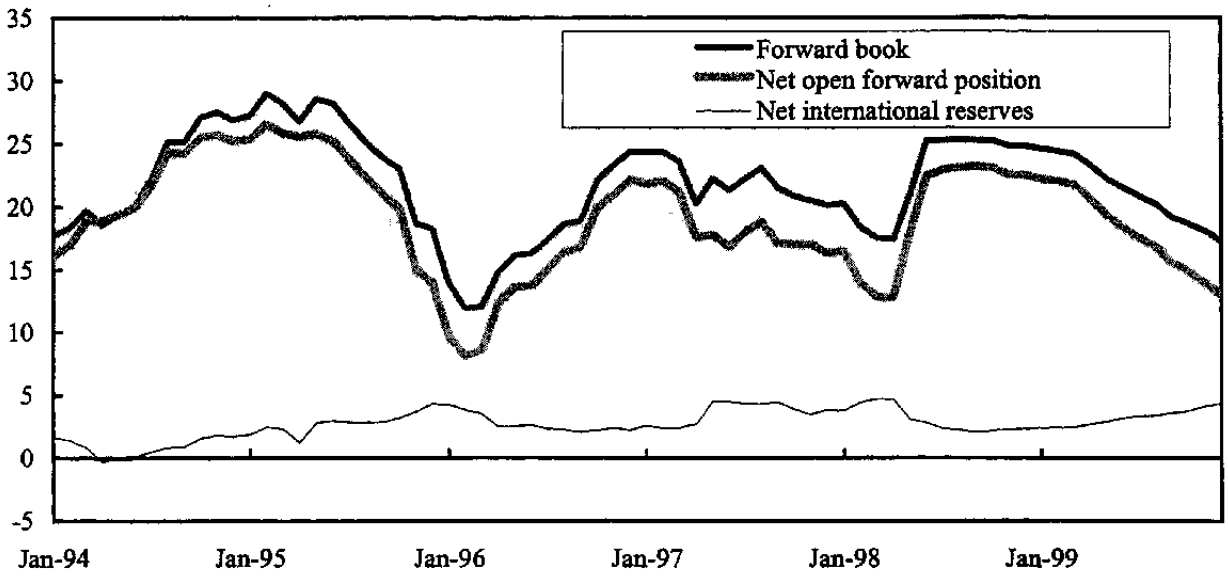
[129] See, for example, Cassard (1998).

[130] See South African Reserve Bank (1998 and 1999a).

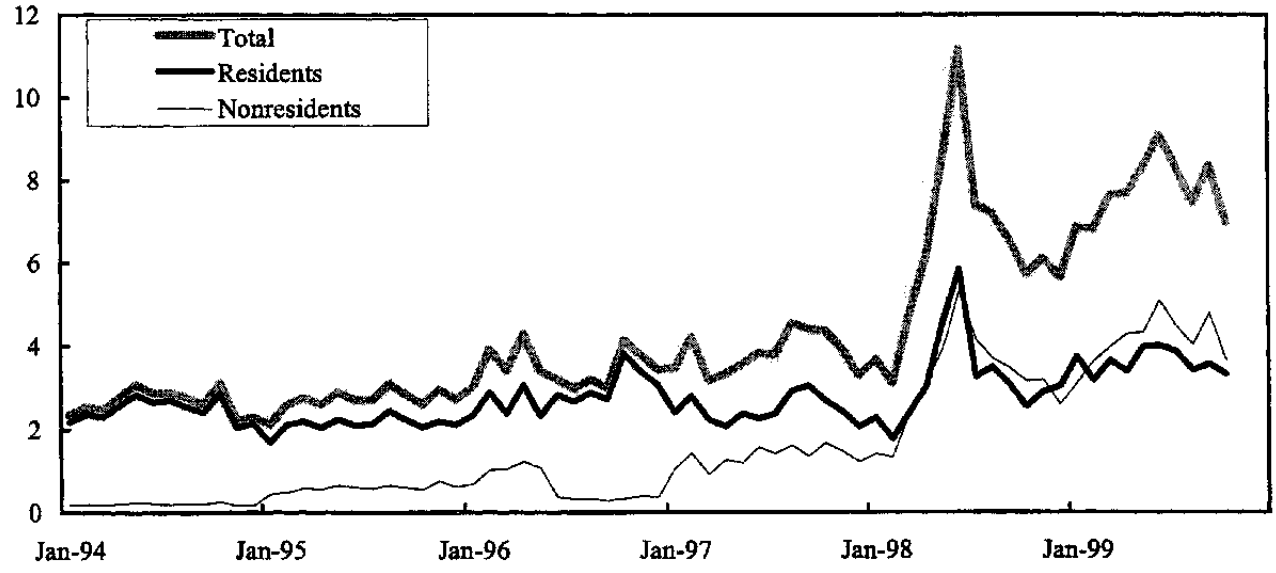
[131] The pressures on the rand in 1996 reflected political factors, such as rumors about the President's health, the appointment of an ANC member as the Minister of Finance, and concerns about an accelerated liberalization of exchange controls on residents. See Fajgenbaum and others (1997) for further discussions.

Figure 17. South Africa: Foreign Exchange Markets, 1994-99

SARB's Foreign Exchange Position
(In billions of U.S. dollars)



Average Daily Turnover in Foreign Exchange Markets
(In billions of U.S. dollars)



Source: South African Reserve Bank, *Quarterly Bulletin.*

242. The nature of the SARB's forward operations changed significantly during the 1990s. In the past, the presence of capital controls meant that the forward market was somewhat underdeveloped, and the SARB played the role of market maker; authorized foreign exchange dealers could obtain from the SARB forward cover for their open positions. The SARB also offered subsidized long-term forward cover to parastatals that raised foreign loans, in order to encourage capital inflows and thereby support a weak balance of payments position.[132] However, since 1997 the SARB no longer provides long-term forward cover, and all new (short-term) forward contracts are written on commercial terms, that is, the forward price is given by the interest spread between South Africa and the United States for the relevant maturity. There is, therefore, no longer any subsidy element involved in the SARB's participation in the forward market. Moreover, the limits on the banks' foreign currency holdings were abolished early in 1998, in part to promote the development of the commercial forward market.[133] As a result, and as a consequence of the general globalization and opening up of the South African economy, the foreign exchange markets—including the forward market—have grown rapidly in recent years, and the SARB today participates only in the forward market at its own initiative. As shown in Figure 17, turnover in the foreign exchange markets increased from US$2.7 billion per day in 1995 to US$6.3 billion in 1998. In addition, following the abolition of exchange controls on nonresidents in 1995, the share of foreign exchange transactions involving nonresidents increased from 22 percent in 1995 to 50 percent in 1998.

243. The SARB's operations in the forward market typically take the form of currency swaps. An increase in its forward book corresponds to a situation where the SARB swaps rand for U.S. dollars with an authorized foreign exchange dealer at the outset of the forward contract and agrees to reverse the transaction at the forward rate when the contract matures. Such operations allow the SARB to intervene in the foreign exchange markets in excess of its spot gross reserves and unused foreign credit line facilities, i.e., without affecting its spot net reserves, as the SARB can enter into forward swaps and immediately sell the acquired spot U.S. dollars back to the market. It also implies that the intervention is automatically sterilized, because without a direct effect on spot reserves there is no effect on domestic liquidity or short-term interest rates.

B. Implications of Forward Intervention

244. According to the SARB, the main objective of its intervention in the foreign exchange markets in recent years has been to absorb speculative pressures on the currency, and thereby prevent an even sharper depreciation of the rand and increase in interest rates than was

---

[132] See CREFSA (1996) or ABSA (1997) for a description of how the SARB's operations in the forward foreign exchange markets have changed since the 1980s.

[133] The banks are still subject to prudential limits on their open foreign exchange positions.

actually experienced in, for example, 1996 and 1998.[134] The SARB has, at the same time, repeatedly emphasized that the intention of the intervention has not been to defend any predetermined level of the rand, but rather to support orderly adjustments of the exchange rate. However, market participants have argued that the intervention strategy has lacked credibility and has been counterproductive, in the sense that any increase in the NOFP has heightened South Africa's vulnerability to speculative attacks and thereby forced the authorities to maintain higher interest rates than would otherwise be warranted.[135] In general, theoretical and empirical research on whether sterilized foreign exchange intervention can effectively influence the relative value of a domestic currency is, at best, ambiguous (see Almekinders (1995) or Dominguez and Frankel (1993)).

245. The exchange rate was relatively stable in 1995, 1997 and early 1998, and again in 1999, as the considerable capital inflows from nonresidents to purchase South African equities and bonds were acquired by the SARB to reduce the NOFP (see Figure 18). In contrast, in 1996 and mid-1998, nonresidents' purchases of South African assets slowed (and even reversed in certain months), the rand depreciated markedly, and the SARB increased the NOFP. It is always difficult to disentangle the cause and effects among financial variables during turbulent periods—especially using data with a monthly frequency—as macroeconomic aggregates tend to evolve simultaneously. While a more thorough analysis would require high-frequency data,[136] there is a consensus that the SARB has taken advantage of relatively favorable market conditions to reduce the NOFP, while it has responded to sustained downward pressures on the rand by increasing the NOFP.

246. It should be noted, however, that the sharp increase in the NOFP in mid-1998 came before nonresidents started to sell South African assets on a net basis (see bottom panel of Figure 18). The SARB increased the NOFP by US$10 billion between end-April and end-June 1998, while nonresidents acquired a small amount of South African assets on a net basis during these months (net sales of bonds amounted to US$1.3 billion, while net purchases of equities amounted to US$1.4 billion); the rand depreciated by 16 percent. However, after the full extent of the increase in the NOFP became known to the market in early July, sales of South African bonds intensified, and during the subsequent two months nonresidents sold South African assets amounting to US$800 million on a net basis, (net purchases of equities amounted to US$1.1 billion, while net sales of bonds amounted to US$1.9 billion), while the rand depreciated by 9 percent.

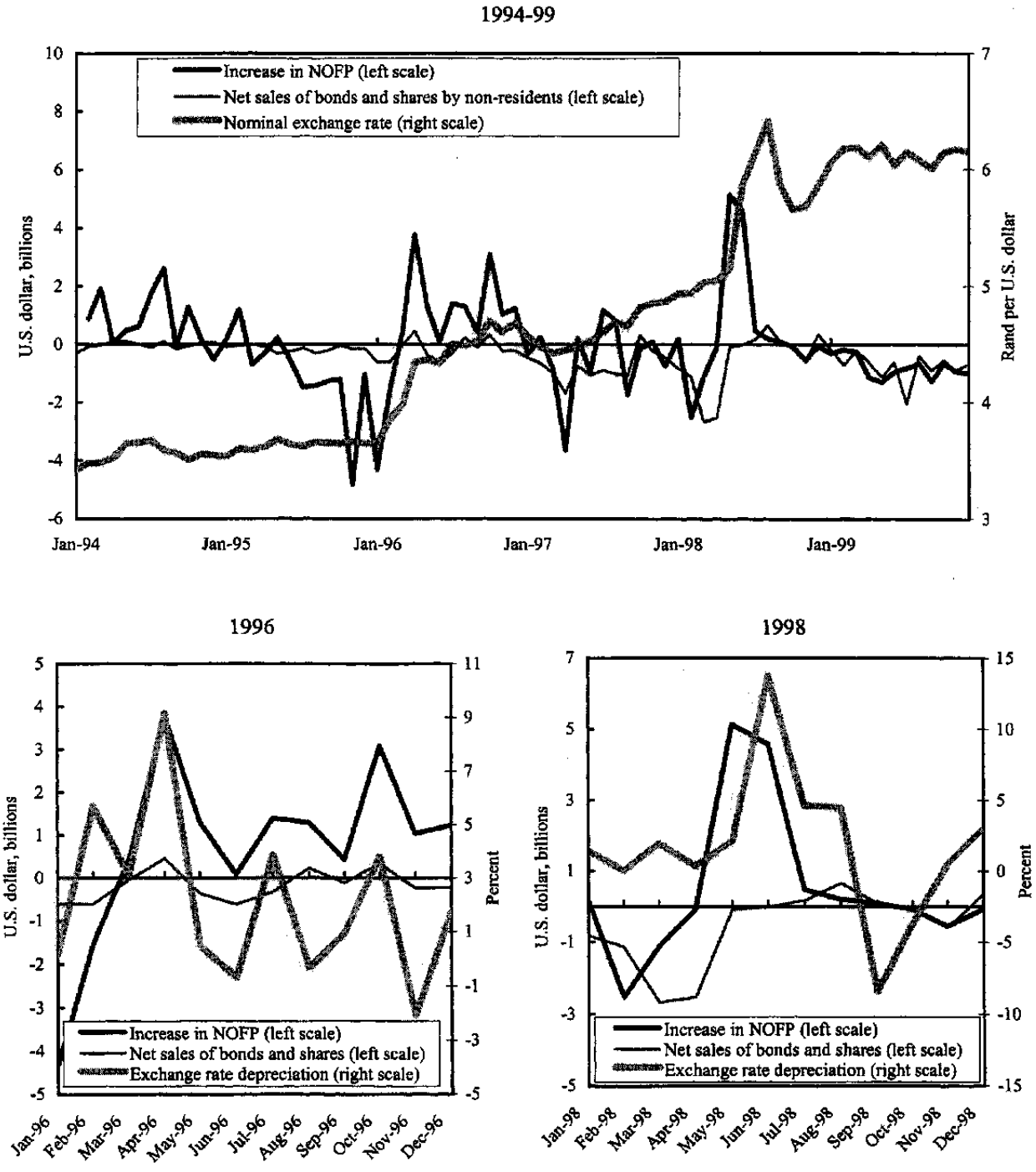
---

[134] See South African Reserve Bank (1998 and 1999b).

[135] See, for example, Cassard (1998), CHASE (1999), and SBC Warburg Dillon Read (1997).

[136] Although series such as the nominal exchange rate, interest rates, and nonresident's purchases of bonds and equities are available with a daily frequency, the NOFP is released only with a monthly frequency.

Figure 18. The NOFP, Net Sales of Bonds and Shares by Nonresidents, and Exchange Rate



Source: South African Reserve Bank, *Quarterly Bulletin.*

247. These developments indicate, arguably, that the intervention strategy by the SARB only dampened the downward pressures on the exchange rate for a limited period. It should also be noted that the SARB raised the short-term repo rate by 540 basis points between end-April and end-June 1998 and by another 160 basis points during the subsequent two months. Moreover, the experience in mid-1998 is consistent with the hypothesis that a higher level of the NOFP is associated with a higher risk premium on investments in South Africa (owing to either currency and/or credit risk, see below), although the higher long-term interest rates in South Africa in mid-1998 certainly also were affected by a sharp increase in the global assessment of risk in emerging markets. For example, J.P. Morgan's bond index EMBI+ (which is an average of foreign-currency-denominated bonds in 15 emerging market economies) rose by nearly 800 basis points in August 1998 following the crisis in Russia.

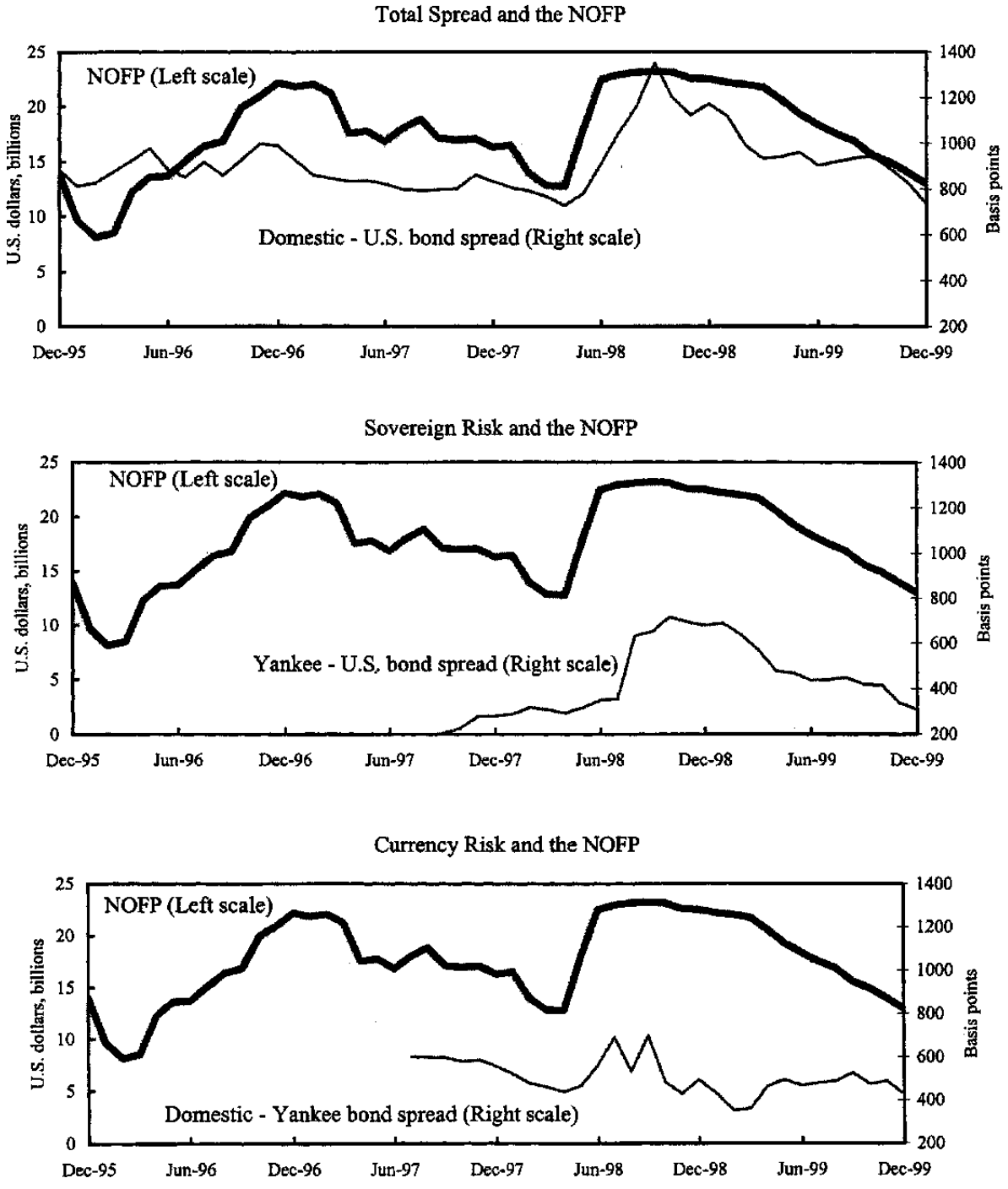
248. By examining the interest spreads on South African bonds denominated in rand and foreign currencies, respectively, it is possible to partly disentangle how currency risk and credit/sovereign risk have developed in South Africa. The top panel of Figure 19 shows the NOFP and the interest spread between long-term South African government bonds denominated in rand and long-term U.S. government bonds. This spread reflects both a currency risk and a sovereign/credit risk and peaked at 1,350 basis points in September 1998. The spread then narrowed by 400 basis points in late 1998 and early 1999, but then remained at about 900 basis points until the last quarter of 1999, when it resumed its downward trend.

249. The middle panel of Figure 19 shows the NOFP together with the interest spread between a South African long-term bond denominated in U.S. dollars (a "Yankee bond")[137] and a long-term U.S. bond. As the Yankee bond carries no exchange rate risk, this interest spread should, in principle, reflect solely the sovereign risk. It can be noted that this risk rose sharply in August 1998, possibly reflecting not only an increase in the global risk owing to the crisis in Russia, but also the South Africa specific risk following the US$10 billion increase in the NOFP in May and June 1998. During 1999, this spread narrowed by 370 basis points, along with a US$9.5 billion reduction in the NOFP.

250. The bottom panel of Figure 19 shows the spread between South African long-term bonds issued in rand and U.S. dollars. If the sovereign risk is similar on these bonds, this spread would mainly reflect currency risk, that is, it would represent a measure of the market's expectation of the future depreciation of the rand. However, to the extent that the sovereign risk on foreign-currency-issued bonds is higher than that on domestic-currency bonds (as argued below), the spread would be an underestimation of the expected depreciation, and it should, therefore, be regarded as a lower bound of the expected depreciation. Although the movements in this series are a little erratic, it can be noted that the currency risk was falling in late 1997 and early 1998, along with lower inflation and a

[137] The bond was issued in 1997 at a fixed coupon rate of 8.5 percent and matures in 2017.

Figure 19. South Africa: Interest Spreads and the Net Open Forward Position, 1995-99



Sources: South African Reserve Bank; IMF, *International Financial Statistics*; and Bloomberg.

reduction in the NOFP. The spread then increased sharply in June and July 1998 but came back to precrisis levels (about 450 basis points) relatively quickly. The spread continued to narrow in the beginning of 1999 but has drifted in a range of about 400-500 basis points since April 1999.

251. To sum up, although a more thorough examination of the impact of the SARB's foreign exchange intervention would need to control for factors such as interest rate policy, fiscal policy, and the international environment, a cursory examination of the various spreads indicates that an increase in the NOFP might contribute to raising the perceived sovereign risk on investments in South African bonds, and thereby be reflected in somewhat higher long-term interest rates. This view would also be consistent with the SARB's argument that a disadvantage with the forward book is that "the credibility of the Bank/Treasury may be called into question as the market focuses, from time to time, on the sustained ability of the Bank to run a large uncovered forward book."[138]

252. Another aspect of the SARB's forward operations is that the government may incur large financial losses on them. In the event the actual depreciation of the rand is larger than that implied by the forward price of a forward foreign exchange liability of the SARB, a financial loss results, which ultimately is borne by the government.[139] Such a loss is reflected in an increase in liquidity that the SARB needs to sterilize to maintain its monetary stance unchanged. As the SARB conducts these forward operations on behalf of the government, the latter settles the losses by issuing zero-coupon bonds to the SARB. The government replaces these bonds by interest-bearing government bonds, such as the R 150, when the SARB sells them to the public.

253. In the past, the SARB's losses were mainly attributed to the long-term forward contracts that were granted to the parastatals, primarily Eskom (the electricity company), at a subsidized rate. For example, between April 1981 and January 1998, a total loss of R 26.4 billion was recorded on the forward operations, of which R 19.1 billion was directly attributed to the long-term part of the forward book. Although this part of the forward book is today very small (less than US$500 million), the expected losses are still substantial on a mark-to-market basis because of the very large difference between the current exchange rate and the average forward exchange rate of those contracts. The short-term part of the forward book has generated alternating profits and losses in recent years, as the exchange rate has at times remained stable and at times depreciated sharply. The profits and losses on the SARB's foreign exchange operations (including gold, as well as spot and forward foreign exchange operations) are reported in the Gold and Foreign Exchange Contingency Account. The

---

[138] South African Reserve Bank (1998, p. 3).

[139] Obviously, there is a financial profit if the depreciation of the rand is less than the one implied by the forward price.

change in this account for the last four fiscal years is shown in Table 24 together with the depreciation of the rand. Although the losses were substantial in 1998/99 (April-March), it should be noted that the SARB has made profits on its foreign exchange operations thus far in 1999/2000.

Table 24. Change in Gold and Foreign Exchange Contingency Account 1/

	1995/96	1996/97	1997/98	1998/99
In billions of rand	-4.1	2.2	-2.1	14.4
In billions of U.S. dollars	-1.2	0.5	-0.5	2.3
In percent of GDP	-0.7	0.3	-0.3	1.9
Memorandum item:				
Exchange rate depreciation (in percent)	2.7	21.9	5.2	23.4

Source: South African Reserve Bank, *Quarterly Bulletin.*

1/ Fiscal year begins in April. A negative figure indicates profits.

C. Relative Merits of External Borrowing to Reduce the Forward Book

254. Given the potential costs and uncertainties associated with the forward book of the SARB, some analysts have proposed that the government (and/or the SARB) should borrow externally to reduce the NOFP.[140] The advantages of such operations would include the following:

- **A more balanced maturity profile of the foreign exchange liabilities.** As of June 1999, South Africa's total foreign currency debt amounted to US$25.1 billion (about 20 percent of GDP), of which about half was short term: US$11.4 billion had an original maturity of less than one year and another US$2 billion was long term but falling due within six months. In addition, the net foreign exchange liabilities under the forward book of the SARB are virtually all short term.

[140] See, for example, Teixeira (1999).

- **Increased transparency.** The size of the forward book of the SARB is published monthly, together with the foreign reserve position, but the details of the maturity structure of the forward book are not publicly available. Therefore, realized (quasi-) fiscal profits and losses resulting from the forward book are unknown to the market at any point in time. In comparison, external borrowing by the government is quite transparent.

255. Notwithstanding these advantages, borrowing externally to reduce the NOFP would have to be gradual and take into account changes in investor sentiment and market conditions, as the advantages mentioned above would have to be weighed against uncertainties regarding the effects on the borrowing costs (both domestic and external) from such an operation. On the one hand, increased external borrowing may lead to a higher risk premium on South African (foreign-currency-denominated) bonds and/or contribute to expectations of increased future depreciation of the rand, implying that the interest costs on all new external borrowing would increase. On the other hand, reductions in the NOFP may reduce the risk premium, as well as expectations about future depreciation, and thereby contribute to lower interest costs. The net effect would, a priori, be uncertain.

256. Nevertheless, even if it is assumed that the risk premium and expected depreciation are unaffected by the external borrowing that is used to reduce the NOFP, it is possible that an additional financial cost would emerge. However, this financial cost would be expected to be relatively small, because the interest cost on the external borrowing would have to be netted out against the lower interest costs that would result from a reduction in domestic government debt. The latter would occur since there is a drain of domestic liquidity when the SARB pays off a forward contract with externally borrowed funds (as explained in the introduction, the forward contracts take the form of currency swaps), and this effect would need to be sterilized by, for example, a corresponding reduction in government domestic debt.[141]

257. More specifically, assume that the government can choose between borrowing domestically, by issuing bonds in domestic currency, or abroad, by issuing bonds in foreign currency.[142] Assuming that risk-adjusted interest rate parity holds, the interest rate on borrowing in domestic currency would be a function of the international interest rate, the expected percentage change in the exchange rate, and any risk premium (in percent):

---

[141] The sterilization is automatic if the SARB purchases foreign exchange to reduce the forward book (as was the case during the last year), as purchases of foreign exchange imply an injection of liquidity that is offset by the reduction in the forward book.

[142] Bonds denominated in domestic and foreign currency can, of course, in principle be hold by both residents and nonresidents.

$$i^{dc} = i^{*} + E[e_{t+1} - e_t] + \theta^{dc}, \quad (1)$$

where i^{dc} is the interest rate on a domestic currency bond (e.g., the yield on the R 153 bond), i^{*} is the interest rate on an assumed risk-free foreign asset of the same maturity (e.g., the yield on a U.S. government bond), $E[e_{t+1} - e_t]$ is the expected percentage change in the nominal exchange rate (where e is defined as (log of) rand per U.S. dollar), and θ^{dc} is the risk premium for holding a domestic-currency-denominated bond. The latter reflects the premium the market requires over and above the one related to the currency risk and includes, for example, the sovereign risk stemming from the probability that the authorities may default on the domestic bond.

258. The interest rate on a bond issued in foreign currency, i^{fc}, would equal

$$i^{fc} = i^{*} + \theta^{fc}, \quad (2)$$

where θ^{fc} is the risk premium for holding a foreign-currency-denominated bond. Combining (1) and (2), we find that

$$i^{dc} - i^{fc} = E[e_{t+1} - e_t] - (\theta^{fc} - \theta^{dc}). \quad (3)$$

Thus, in the event that $\theta^{fc} = \theta^{dc}$, the expected depreciation (in percent) would be the same as the difference in interest rates on domestic and foreign currency denominated bonds. In this case, the net financial cost of external borrowing to reduce the forward book would be zero, as the cost of external borrowing would equal the saving from the reduction in government domestic debt (see Box 3 for a numerical example).

259. However, in the event that $\theta^{fc} > \theta^{dc}$, there would be a positive net financial cost associated with external borrowing to reduce the NOFP; the expected nominal depreciation would be larger than the difference in interest rates on bonds denominated in domestic and foreign currencies. Intuitively, this net cost appears because the government has to pay an additional premium for borrowing in foreign currency, that it cannot recoup when domestic debt is lowered (following the sterilization of the liquidity reduction), as this premium is not reflected in the interest rate on domestic bonds.

260. There are (at least) three reasons why $\theta^{fc} > \theta^{dc}$ might occur. First, in an extreme foreign exchange crisis with few buyers of domestic currency, it is conceivable that the market believes that the probability of the government effectively defaulting on liabilities in foreign currency is higher than that of defaulting on domestic currency liabilities; in principle, the government could always honor the domestic currency liabilities by printing more money. In the case of South Africa, this argument is supported by substantially lower

credit ratings of (the government's) foreign currency liabilities than that of domestic currency liabilities.[143]

Box 3. The Cost of External Borrowing to Reduce the NOFP: A Numerical Example

Assume the government borrows, say, US$2 billion at 9 percent interest (about 2.5 percentage points above the U.S. bond yield) and uses the funds to pay off maturing forward contracts. The reduction of the forward book also implies that the domestic money market is drained by US$2 billion times the current exchange rate, E_t, that is, R ($2 \cdot E_t$) billion. To keep the domestic money market unchanged, this amount would need to be injected back into the market ("sterilized") by, for example, reducing the stock of government bonds held by the public by R ($2 \cdot E_t$) billion. Assuming that both the external borrowing and the government bond yield mature in one year, and that the latter yield is 13 percent, the savings for the government would then be R ($1.13 \cdot 2 \cdot E_t$) billion, including principal plus interest.

When paying back the borrowed amount, the nominal exchange rate will have changed (presumably depreciated); the total amount to be paid back would thus be R ($1.09 \cdot 2 \cdot E_{t+1}$) billion. Hence, the net cost for the government would equal R ($1.09 \cdot 2 \cdot E_{t+1}$) - ($1.13 \cdot 2 \cdot E_t$) billion. It can immediately be noted that the net cost for the government of this operation would be a function of the relation between the difference in interest rates for borrowing in foreign currency (here assumed to be 9 percent) and domestic currency (here assumed to be 13 percent) and the actual currency depreciation (E_{t+1} / E_t). In the event that the realized depreciation equals the spread in interest rates (1.13 / 1.09), the net cost for the government of this operation would be zero. However, as discussed in the text, the depreciation of the currency could be expected to be larger than the spread in interest rates, implying that there would be a positive (albeit possibly small) net financial cost of paying off forward contracts with external borrowing.

261. Second, the market for foreign-currency-denominated bonds issued by the South African government is quite small and illiquid compared with, say, the market for R 150 or R 153 bonds.[144] This could imply that market participants tend to require an extra premium for holding foreign-currency-denominated bonds.

262. Third, it is possible that South African residents and nonresidents have different views (for example, owing to information asymmetries) of the sovereign risk in South Africa, and that the residents' portfolio exhibits a "home bias." It is well known in the empirical finance literature that such a home bias exists in many countries; institutional investors tend

[143] For example, Standard & Poor's foreign currency credit rating is BB+, while the local currency credit rating is BBB+.

[144] The R 150 and R 153 are benchmark bonds maturing in 2004-06 and 2009-11, respectively.

to hold a very high degree of domestic securities, especially bonds, in their portfolios (see, for example, Lewis (1999) or Griffin (1997)).[145] If this applies also to South Africa[146] and if the residents perceive that the sovereign risk on domestic currency bonds is relatively low, a situation would probably appear where $\theta^{fc} > \theta^{dc}$.

263. In summary, it is likely that the financial cost associated with external borrowing to reduce the forward book is positive but relatively small. Although it is difficult to measure exactly the magnitude of this cost, it is possible to provide an estimate. As argued in Section B, the interest spread between domestic and foreign currency bonds can be viewed as a measure of the lower bound of the expected depreciation; as of end-December 1999, this spread was 430 basis points (see Figure 19). But since the inflation differential versus the U.S. currently is about 6 percent,[147] and with the announcement that inflation will be further reduced in the medium term (under an explicit inflation-targeting regime), it seems probable that the expected depreciation currently is not higher than, say, 5 percent per year in the medium term, assuming that purchasing power parity holds. Together, these observations would imply that the difference in the risk premium for foreign- and domestic-currency denominated bonds—and the financial cost associated with external borrowing to reduce the forward book—is less than 1 percentage point.

264. Apart from the financial costs related to external borrowing to reduce the NOFP (as discussed above), two additional aspects of such borrowing deserve to be mentioned:

- **It would not change the foreign exchange exposure of the government/SARB**. The increased vulnerability to exchange rate fluctuations due to higher external debt would be offset by less vulnerability to these shocks due to the reduction in the forward book. Thus, the actual fiscal costs of a nominal depreciation of the rand would be largely unaffected by any external borrowing that is offset by reductions in the forward book.

- **It would not change the overall public debt stock**. As noted above, the increase in external borrowing to reduce the forward book would be accompanied by a corresponding reduction in domestic government debt held by the market. In this context, it can be noted that, of the total public debt outstanding at June 1999 (49 percent of GDP), only 3 percent of GDP (about US$3.6 billion) was denominated in foreign

---

[145] Zhou (1998) has shown that asymmetric information can help in explaining this form of home-bias behavior.

[146] Indeed, institutional investors in South Africa hold a very large share of domestic securities in their portfolio, as resident investors are constrained in their acquisition of foreign assets by capital controls.

[147] This is based on the core inflation measure for South Africa.

currencies—a figure that is quite small when compared to other emerging economies (see Box 4).

D. Summary and Conclusions

The SARB has operated in the forward foreign exchange markets for several decades, and its net open position has been, at times, quite large. Market participants have expressed concerns about the SARB's forward operations and argued that its net open position has heightened South Africa's vulnerability to speculative attacks and resulted in higher long-term interest rates than otherwise would have been warranted. An examination of the interest spreads in South Africa provides some support for this view. In particular, the perception of sovereign risk in the South African bond market appears to be related to the level of the NOFP.

265. As the financial markets, including the foreign exchange and forward markets, have grown rapidly in South Africa in recent years, the SARB has announced its intention of gradually reducing its operations in the forward market and eventually dismantling the forward book, and significant steps have been taken to this end. Indeed, during 1999, the NOFP was reduced by US$9.5 billion to US$13 billion as of end-December. External medium- to long-term borrowing by the government to pay off maturing forward contracts could be one element in a strategy for further reducing the NOFP. While such borrowing would imply a more balanced maturity profile of the total foreign exchange liabilities, it would not alter the foreign exchange exposure of the government/SARB. Moreover, such borrowing would have to be gradual and take into account changes in investor sentiment and market conditions, although the net financial costs of such operations would be expected to be relatively small.

Box 4. Public Debt in Emerging Market Economies

South Africa's public debt (national government) is higher than in many other emerging market economies. However, foreign-currency-denominated public debt is much lower in South Africa than elsewhere, both when measured as a share of GDP and as a share of total public debt.

Public Debt in Selected Emerging Market Economies in 1997

	Total Public Debt	Public Foreign Currency Debt	
	Percent of GDP	Percent of GDP	Percent of total public debt
South Africa	**49**	**2**	**4**
Argentina	35	31	89
Chile	14	3	24
Mexico 1/	46	20	44
Czech Republic	10	2	23
Hungary	64	4	6
Poland	48	28	58
Turkey	45	23	51
India	44	4	8
Korea	11	4	33
Malaysia	33	5	14
Philippines	56	25	44
Thailand	5	4	84

Sources: IMF, *International Financial Statistics*, *Government Finance Statistics*; and Fund staff estimates.

1/ Includes bank restructuring liabilities.

References

ABSA, 1997, "Recent Developments in South Africa's Forward Foreign Exchange Arrangements and Policies," Economic Spotlight, No. 20, May.

Almekinders, Geert, 1995, *Foreign Exchange Intervention: Theory and Evidence* (Aldershot, England: Edward Elgar Publishing Limited).

Cassard, Marcel, 1998, "South Africa under Pressure," *Emerging Europe Weekly*, Deutsche Bank Research, June 5.

CHASE, 1999, "South Africa: The Long Walk to Prosperity," International Fixed Income Research, *Country Update,* October 22.

CREFSA, 1996, "Managing the Rand's Depreciation: The Role of Intervention," *Quarterly Review,* April, pp. 2-13, Centre for Research into Economics and Finance in South Africa, London School of Economics.

Dominguez, Kathryn and Jeffrey Frankel, 1993, *Does Foreign Exchange Intervention Work?* (Washington: Institute for International Economics).

Fajgenbaum, Jose, and others, 1997, South Africa—Selected Issues, *IMF Staff Country Report No. 97/82* (Washington: International Monetary Fund).

Griffin, Mark W., 1997, "Why Do Pension and Insurance Portfolios Hold So Few International Assets?" *Journal of Portfolio Management,* Vol. 23, pp. 45-50.

Lewis, Karen, 1999, "Trying to Explain Home Bias in Equities and Consumption," *Journal of Economic Literature*, Vol. 37, pp. 571-608.

SBC Warburg Dillon Read, 1997, "South Africa's Economic Transition," *Emerging Europe Daily*, October 7.

South African Reserve Bank, 1998, "The South African Reserve Bank's Forward Foreign Exchange Book," February 27.

South African Reserve Bank, 1999a, "Address by Mr. T. T. Mboweni, Governor of the South African Reserve Bank at the Seventy-Ninth Ordinary Meeting of Shareholders of the Bank", August 24.

South African Reserve Bank, 1999b, "The Challenges to Monetary Policy in Increasingly Volatile International Markets," Address by Dr. Chris Stals, Governor of the South African Reserve Bank, May 25.

Teixeira, Carlos A., 1999, "South Africa: From Transition to Growth," Goldman Sachs, Global Economics Paper No. 29, September 20.

Zhou, Chunsheng, 1998, *"Dynamic Portfolio Choice and Asset Pricing with Differential Information,"* Journal of Economic Dynamics & Control, Vol. 22, pp. 1027-51.

South Africa: Tax Summary as of April 1, 1999

(All amounts in South African rand)

Tax	Nature of Tax	Exemptions and Deductions	Rates
1. Taxes on income, profits, and capital gains			
1.1. Individual income tax Income Tax Act No. 58 of 1962 as amended	Central Government tax is charged on taxable income received by or accrued to a person from any source within or deemed to be within South Africa. Taxable income is assessed as gross income less exemptions and deductions. Receipts or accruals of a capital nature are generally excluded from gross income. Gains derived from asset transactions deemed to be made with the purpose of making a profit are included in gross income. Wage and salary earners are subject to withholding tax at source Pay-as-you-earn (PAYE). Income tax returns must be submitted at the end of the tax year for salaried persons whose net remuneration is in excess of R 60,000. Standard Income Tax on Employees (SITE) falls under the PAYE system; SITE is applicable to net remuneration up to R60,000. SITE taxpayers are not required to submit income tax returns. In the case of other individuals, tax is levied on taxable income accrued during the tax year. Provisional payments are effected in two half yearly installments. Certain provisional taxpayers may make a third "topping up" payment seven months after the end of the tax year. A tax year runs from the first day of March to the last day of February.	Exemptions include (i) the first R2, 000 of any taxable interest; (ii) dividends, excluding dividends paid by fixed property companies or unit portfolios; (iii) benefits payable under the Unemployment Insurance Act, and (iv) leave gratuities on retirement/retrenchment up to R30,000. Deductions are allowed for: (i) annual contributions to pension and retirement funds (the greater of R1,750 or 7½ percent of pensionable income); (ii) retirement annuity fund contributions (the greater of R1,750 or R3,500 less allowable pension fund contributions or 15% of non-pensionable income), (iii) medical expenses(with deduction ceilings depending on age) and (iv) donations to certain educational institutions. A single rate structure applies to all individuals (including special trusts). A special trust means a trust created solely for the benefit of a person who suffers from any mental illness or a serious physical disability.	The following rebates are deductible from normal tax determined on taxable income: Primary rebate: R3,710 Additional rebate: R2,775 (persons 65 years and older). Tax is calculated on the taxable income of any person under 65 years of age in accordance with the table below: Taxable Annual Income (In Rand) / Marginal Tax Rates (In %) / Average Tax Rates (In %) 0 to 19,526 — 0 — 0 19,526 33,000 — 19 — 3.9 33,001 50,000 — 30 — 11.5 50,001 60,000 — 35 — 17.0 60,001 70,000 — 40 — 20.0 70,001 120,000 — 44 — 26.3 120,001 + — 45 A separate rate structure applies to trusts (other than special trusts). Taxable Annual Income (In Rand) / Marginal Tax Rates (In %) 0 to 100,000 — 35 100,001 + — 45

South Africa: Tax Summary as of April 1, 1999

(All amounts in South African rand)

Tax	Nature of Tax	Exemptions and Deductions	Rates
	Corporate income tax is a central government tax levied on the taxable income derived by all companies (whether local or foreign) from a source within South Africa. Taxable income is defined as gross income, other than capital receipts and exempt income, less allowable deductions and set off of losses. A tax year of assessment is the accounting year. Companies with taxable income in excess of R 20,000 are required to make two provisional tax payments in respect of each year of assessment. The first payment is made within six months after the commencement of the year of assessment, the second at the end of such year, and an optional third payment within a period of seven months from the close of such year for companies with a February year end. In all other cases the third payment will be due within six months after the close of the tax year. Comprehensive agreements for the avoidance of double taxation on the same income are in force with 39 countries. Limited agreements for the avoidance of double taxation on profits derived from sea or air transport are also in force with 5 countries. Gold mining companies are subject to special tax provisions.	Gold mining companies are subject to special tax provisions. Deductions include normal operating costs, interest, and depreciation allowances but exclude dividends and capital expenditure. Depreciation allowances of non-mining companies vary according to type of asset, life expectancy, and intensity of use of assets. Generally, the straight-line method is used. Plant and machinery used in a process of manufacture, including aircraft and ships used by a taxpayer in the carrying on of his trade, may be written off on a straight line basis over five years. An initial allowance of 10 % in respect of certain housing projects is also allowable. Farming machinery may be written off at 50 %, 30 %, and 20 % over 3years. An assessed loss can be carried forward indefinitely but cannot be carried back. Capital expenditure is allowable as a deduction from income of all types of mines in the year of assessment during which it is incurred, limited, however, to the annual mining working profit. Unredeemed balance ranks for redemption against future mining working profit. Cost of land, mineral rights, mining rights, servitude, etc., are not deductible.	a. Non-gold mining companies: 30% of taxable income derived within South Africa. b. Gold mining companies: Formula-based tax rate determined in accordance with one of the following formulae: (a) Where the company is not exempt from the secondary tax on companies (STC): $y = 37 - (185 \div x)$ or (b) where the company is exempt from the STC: $y = 46 - (230 \div x)$ In the formula y is the tax rate and x is the profit-to-revenue ratio. c. Oil extraction companies: 58% d. Long-term insurance companies: 30 % tax is levied on income derived from company policies as well as on income derived from policies held by individuals. Income derived from pension and retirement funds: The net rental and gross interest of pension, provident, and retirement annuity funds are taxed at a rate of 25 %. Dividend payments received by the funds from property unit trust schemes are also subject to the 25 % tax.

South Africa: Tax Summary as of April 1, 1999

(All amounts in South African rand)

Tax	Nature of Tax	Exemptions and Deductions	Rates
1.3. Secondary tax on companies (STC) Income Tax Act No. 58 of 1962 as amended	A central government tax payable on the net amount of dividends, that is, the excess of dividends declared by the company over dividends accrued to the company during a dividend cycle.	Exemptions include: 1. Dividend payments of fixed property companies as defined in section 1 of the Unit Trust Control Act portfolios. These dividends are taxed in the hands of the recipient. 2. Dividends in specie in relation to approved unbundling transactions are also exempt from STC. 3. Dividends paid out by subsidiary companies to their holding company.	12½ % on dividends declared on or after 14 March 1996.
2. Social security contributions			
2.1. Unemployment insurance contributions	A contribution collected by Unemployment insurance funds.	Not payable for employees earning more than R 63,648 per year. Also excluded from unemployment insurance are domestic servants, home workers, and temporary workers who are employed for less than eight hours or less than one full working day in any calendar year.	Employee and employer contributions of 1.0 % of the insured earnings.
2.2. Work injury insurance contributions	A compulsory insurance scheme.	Not payable by employees earning more than R 55,068 per year. Also excluded are domestic servants and casual workers.	Insurance premiums vary with risk.
3. Taxes on payroll and workforce			
3.1. Payroll tax Regional Service Councils Act No.109 of 1985 KwaZulu and Natal Joint Services Act No. 84 of 1990	A tax levied by District and Joint Services Councils.	A tax levied by the Councils on remuneration paid by employer. Some Councils grant discounts of 15 %, 20 %, or 25 % to farming enterprises.	Ranges from 0.2 % to 0.38 % depending on Council.
4. Taxes on property			

South Africa: Tax Summary as of April 1, 1999

(All amounts in South African rand)

Tax	Nature of Tax	Exemptions and Deductions	Rates
4.1. Property tax	A local tax payable on the capital value of land and improvements.	Method of valuation and rates differ across local governments. Rebates of up to 40 % are provided for different classes of property.	Rates differ across local governments and depend on valuation methods.
4.2. Estate duty Estate Duty Act No. 45 of 1955	A central government tax payable on the estate of an individual. Property includes life insurance proceeds and lump-sum benefits received from pension or provident fund benefits.	Deductions include funeral and estate administration expenses, as well as outstanding debts of deceased as at date of death. A single deduction of R1,000 000 is applicable. Property of a deceased which accrues to the surviving spouse, is exempt from estate duty.	25 % in respect of natural persons who died on or after March 14, 1996
4.3. Donations tax Income Tax Act No. 58 of 1962	A central government tax payable by the donor on the cumulative value of property donated by residents.	Donations by public companies and donations to charitable, educational, or religious institutions are exempt. Annual exemption limits of R5,000 and R25,000 apply for legal and natural persons, respectively.	25 %.
4.4. Transfer duty Transfer Duty Act No. 40 of 1949	A tax payable on the purchase consideration or fair value (whichever is the greater) of transfers of immovable property.	Exemption limits of R30,000 for unimproved property and R70,000 for property with dwelling.	For natural persons, 1 % on the first R70,000 plus 5 % on the value in excess of R70,000 but under R250,000 plus 8 % on amount in excess of R250,000. For other persons, 10 % of total value of property.
4.5. Marketable securities tax Marketable Securities Tax Act No. 32 of 1948	A tax payable on the purchase of marketable securities by a stockbroker on behalf of any person.		0.25 %
5. Domestic taxes on goods and services			

South Africa: Tax Summary as of April 1, 1999

(All amounts in South African rand)

Tax	Nature of Tax	Exemptions and Deductions	Rates
5.1. Value-added tax (VAT) Value-Added Tax Act No. 89 of 1991.	A central government tax levied on the supply of goods and services. VAT is collected at a single, positive rate, is consumption-type and allows full and immediate tax credit on capital and intermediate goods. VAT is based on a destination principle (exports are zero-rated and imports are taxed). An invoice-based credit method is used. (VAT is calculated on sales and tax is paid on the difference between VAT on sales and VAT on purchases, adequately supported by invoices.)	Main zero-ratings include (i) exports; (ii) several unprocessed food items including brown bread, maize meal, milk, eggs, fruit, and vegetables; (iii) petrol and diesel; (iv) several agricultural inputs including seeds, feed, and fertilizers; and (v) international transport services. Main exemptions include: (i) a limited number of financial services (mainly interest); (ii) residential rents; (iii) passenger transport; and (iv) educational services.	14 %.
5.2. Turnover tax Regional Service Councils Act No. 109 of 1985 KwaZulu and Natal Joint Services Act No. 84 of 1990	A tax on turnover levied by District and Joint Service Councils.	Exemptions: (i) religious, charitable and educational institutions; (ii) non-profit organizations engaged in nature conservation or animal protection; (iii) amateur sport clubs; and (iv) letting of accommodation to employees.	Ranges from 0.1 to 0.2 %.

(All amounts in South African rand)

Tax	Nature of Tax	Exemptions and Deductions	Rates
5.3. Excise duties Customs and Excise Act No. 91 of 1964 as amended	Central government taxes payable by the manufacturer or importer of certain commodities. Most are specific, though some ad valorem rates exist.	A rebate is granted on dutiable goods used by diplomatic representatives and on taxable goods used by producers in the manufacture of taxable goods for industrial or commercial purposes.	Beer (excluding sorghum beer): 2,122.0 cents per liter absolute alcohol. Sorghum beer: 7.45 cents per liter. Sorghum powder: 33 cents per kilogram. Unfortified wine: 64.36 cents per liter. Fortified wine: 145.59 cents per liter. Sparkling wine: 178.30 cents per liter. Spirits: 2,875.5 cents per liter absolute alcohol. Other fermented drinks: 108.04 to 227.88 cents per liter depending on the type. Cold drinks and mineral water 12cents per liter. Cigarettes: 122.5 cents per 10 cigarettes. Cigarette tobacco: 229 cents per 50 grams. Pipe tobacco:2,493.95 cents per kilogram. Cigars:32,717 cents per kilogram. Petrol: 3.909 cents per liter. Diesel: 3.817 cents per liter. Ad valorem rates reduced from 15 % to 10 %: essential oils; perfumes and toilet waters; beauty makeup preparations; preparations for the use on the hair; shaving or bath preparations; photographic plates and film, articles of apparel and fur skin; microphones and stands; turntables, record-players and cassette-players; magnetic tape recorders; video recording or reproducing apparatus; prepared unrecorded media for sound; records, tapes, and other recorded media; reception apparatus for radio-telephony; motorcycles (capacity equal to or exceeding 800cm^3); lenses, prisma, mirrors, and other optical elements; spectacles, goggles, and the like; binoculars, monoculars, etc.; photographic cameras; cinematographic cameras and projectors; image projectors; pocket watches, and other watches. Rates reduced from 7.5 % to 5 %t: motorcycles (capacity less than 800cm^3). Rates reduced from 6 % to 5 %: computers, printers, modems, and other office machines. Additional goods with rates raised from 0 % to 10 %: Wall/window type air conditioners, self contained and car types; cordless telephone sets; cell phones; video cameras for non-commercial application and dishwashers (domestic).

(All amounts in South African rand)

Tax	Nature of Tax	Exemptions and Deductions	Rates
5.4. Fuel levy Customs and Excise Act No. 91 of 1964 as amended	A central government levy on the sale of petrol, diesel, and kerosene mixtures.		Petrol: 84.4 cents per liter (unleaded); 90.6 cents per liter (leaded). Diesel: 76.1 cents per liter; distillate fuels and mixture of kerosene with lubricity agents: 90.6 cents per liter.
5.5. Motor vehicle taxes Customs and Excise Act No. 91 of 1964 as amended	A tax levied on the value of imported components used in the manufacture of duty payable motor cars, station wagons and similar dual purpose motor vehicles, excluding heavy duty motor vehicles and motorcycles.	(1) A Customs driven program in terms of which the Customs value of components imported for the manufacture of motor vehicles are liable to customs duty. Provision is made that the value of the imported components can be reduced by a duty free allowance as well as the value of imported rebate credit certificates. Customs duty is only payable on the remaining customs value.	49 % with an annual reduction of 3 % until it reaches 30 % Rate of duty until 31/12/99 37.5% As from 1/1/2000 it will be 34.5%
		(2) Ad valorem Customs and Excise duty which is applicable to imported as well as locally produced motor vehicles. Items (1) and (2) are applicable to motor cars, motor vehicles for the transport of ten or more persons of a vehicle mass not exceeding 1,600 kg., motor vehicles for the transport of goods of a vehicle mass not exceed 2,000 kg., or a GVM not exceeding 3,500 kg. or a mass not exceeding 1,600 kg. or a GVM not exceeding 3,500 kg. per chassis fitted with a cab and chassis fitted with engine of Heading No. 87.06 of a mass not exceeding 3,500 kg.	(0.000035 x value for ad valorem duty purposes) less 0.5 % with a maximum of 20%
		(3) Heavy duty vehicles: certain components are liable to customs duty and the balance allowed under full rebate of customs duty.	Compression ignition engine: 20 % Driving axles: 20 % Gear boxes: 20 % Cabs/bodies: 5 % Pneumatic tires: 20 %
6. Taxes on international trade transactions			

6.1. Customs duties Customs and Excise Act No. 91 of 1964 as amended	A one-column tariff schedule based on the Brussels nomenclature with general, most favored nation, and preferential rates of duty. Preferential treatment is given to goods from the United Kingdom and in some cases, goods from Canada and Ireland. There is a Customs Union with Botswana, Lesotho, and Swaziland. Most duties are assessed ad valorem at c.i.f. value but there are a number of specific duties.	Rebates are allowed for certain goods used in manufacture by approved industries or by particular institutions and bodies.	There are 45 ad valorem rates, and 8,063 tariff lines with either formula, specific, or other types of duties. Import duties vary widely.
7. Other taxes			
7.1. Stamp duties Stamp Duties Act No. 77 of 1968	Ad valorem or specific taxes payable on a wide range of legal documents such bills of exchange, bonds, fixed deposit receipts, leases, marketable securities, etc.	Most securities issued by certain public corporations and public authorities are exempt from stamp duty on issue and transfers. Where marketable securities tax is chargeable, brokers' notes do not attract stamp duty.	Rates of stamp duty vary for different instruments and also for a particular instrument. Examples are: 5 cents per R100 for bills of exchange; 10 cents per R200 per annum on fixed deposit receipts; and 0.25 cents per R100 on registration of share certificates.

Table 25. South Africa: Expenditure on Real GDP, 1994-99
(In percent)

	1998		1994	1995	1996	1997	1998	1999 2/	1998				1999		
	Millions of rand	Percent of GDP							I	II	III	IV	I	II	III
	(At current prices)								(Seasonally adjusted at annual rate)						
Private consumption	464,760	62.8	3.1	4.7	3.9	2.0	1.3	0.4	2.1	1.1	0.7	0.0	-0.8	1.2	2.1
Public consumption	146,800	19.8	3.1	-1.4	6.0	7.1	-0.5	-1.9	6.3	-3.3	-0.4	-2.7	-1.6	-1.5	-2.3
Gross fixed investment	122,071	16.5	8.7	10.3	7.8	3.5	4.8	-5.5	3.5	8.3	9.8	5.0	-24.2	-10.7	-3.3
Final demand	733,631	99.1	4.1	4.4	5.1	3.3	1.6	-1.1	3.1	1.5	2.1	0.4	-5.5	-1.4	0.3
Inventory investment 1/	-4,602	-0.6	1.5	0.7	-1.2	-2.0	-0.5	0.6	-3.6	2.0	0.9	1.1	-4.4	7.6	-1.5
Statistical discrepancy 1/	2,423	0.3	0.8	-0.1	-1.0	0.0	0.4	-0.3	-1.4	-2.3	2.8	-0.7	-2.0	0.8	-0.6
Domestic demand	731,452	98.8	6.5	5.0	2.7	1.4	0.6	-0.8	-2.1	1.1	5.9	0.8	-11.6	7.3	-1.8
Exports of goods and nonfactor services	190,088	25.7	1.0	10.5	11.0	5.3	2.3	-1.7	-2.6	-8.9	-7.8	-1.5	11.0	-17.6	18.5
Imports of goods and nonfactor services	180,959	24.4	16.1	17.1	9.2	4.6	2.1	-8.4	-13.1	-7.7	25.2	-0.8	-36.5	-0.3	-3.2
Foreign balance 1/	9,129	1.2	-3.4	-1.5	0.5	0.3	1.3	1.6	2.7	-0.5	-7.2	-0.2	13.8	-4.6	4.9
GDP at market prices	740,581	100.0	2.7	3.4	3.2	1.7	0.6	0.8	0.7	0.5	-1.7	0.6	1.1	2.1	3.1

Source: South African Reserve Bank, *Quarterly Bulletin.*

1/ Contribution to GDP growth.

2/ First three quarters of 1999 relative to the corresponding period in 1998

Table 26. South Africa: Gross Fixed Investment and Capital Stock, 1994-98

	1998	1994	1995	1996	1997	1998
	Share of total					
		(Annual percentage change; at 1995 prices)				
Total gross investment	100.0	8.2	10.7	7.5	5.2	4.8
By type of organization						
Private enterprises 1/	67.2	12.7	10.9	7.4	4.7	-2.9
Public corporations	18.5	-3.9	15.8	10.6	9.7	51.4
Public authorities	14.3	-0.8	6.0	5.3	4.4	2.6
By sector						
Mining	9.2	18.2	4.2	1.5	13.2	12.0
Manufacturing	22.0	9.2	20.6	6.5	3.6	-5.5
Financial services 1/ 2/	22.3	10.3	7.6	9.4	6.8	-1.5
Community, social, and personal services	12.5	2.4	7.4	-2.0	4.0	5.4
Other sectors	33.9	6.2	9.1	12.9	3.9	15.7
By type of asset						
Residential building	8.0	0.2	1.6	0.1	0.9	-2.8
Nonresidential building	10.7	11.2	15.8	-0.7	-7.9	6.2
Construction works	13.6	2.2	-6.8	10.9	18.5	-0.5
Transport equipment	15.0	3.7	15.7	-2.4	3.2	11.4
Machinery and other equipment	50.4	12.9	16.8	14.2	7.4	6.7
Transfer costs	2.3	15.9	-2.7	3.2	-8.6	-15.6
Real fixed capital stock 3/	100.0	0.8	1.3	1.6	1.8	1.9
Private enterprises 1/	53.6	2.3	2.8	3.2	3.2	2.4
Public corporations	21.7	-2.2	-1.6	-1.1	-0.7	1.7
Public authorities 4/	24.7	0.7	0.8	0.9	1.0	1.0

Source: South African Reserve Bank, *Quarterly Bulletin.*

1/ Including transfer costs.
2/ Finance, insurance, real estate, and business services.
3/ End of period.
4/ General government plus four departmental enterprises (Community Development Fund, Government Motor Transport Trading, Government Printing Works, National Housing Fund).

Table 27. South Africa: Financing of Domestic Investment, 1994-98

(In percent of GDP at market prices)

	1994	1995	1996	1997	1998
Gross private saving 1/	20.8	18.8	18.8	17.4	15.8
Less: Depreciation 2/	11.4	11.2	10.8	10.8	10.9
Net private saving	9.4	7.6	8.0	6.5	5.0
Net personal saving	1.8	1.1	1.1	1.0	0.5
Net corporate saving	7.6	6.5	6.9	5.5	4.4
Gross general government saving	-3.9	-2.3	-3.0	-2.8	-1.6
Less: Depreciation 2/	2.0	1.9	1.9	1.9	1.9
Net general government saving	-5.9	-4.2	-5.0	-4.7	-3.5
Net domestic saving	3.4	4.9	4.4	3.3	3.1
Net foreign saving (current account surplus -)	-0.1	1.5	1.3	1.5	1.6
Net domestic investment	3.4	4.9	4.4	3.3	3.1

Source: South African Reserve Bank, *Quarterly Bulletin.*

1/ Before inventory valuation adjustment.
2/ Provision for depreciation at replacement value.

Table 28. South Africa: Growth of Disposable Income of Households, 1994-98

	1998 Structure of disposable income	1994	1995	1996	1997	1998
	(In millions of rand)	(Percentage change)				
Net remuneration of employees 1/	369,570	11.1	13.5	12.6	9.7	9.7
Net income from property	156,788	13.1	15.7	13.1	19.4	5.1
Transfers received	23,475	18.2	6.9	16.4	6.9	-0.5
General government	22,697	18.4	6.3	16.6	6.6	-1.0
Business enterprises	588	14.7	31.1	12.3	12.0	16.9
Abroad	190	-3.5	32.5	-8.2	53.5	22.6
Current income	549,833	12.0	13.8	12.9	12.2	7.9
Less: Direct taxes	79,818	20.4	15.2	16.9	15.7	13.2
Personal disposable income	468,830	10.9	13.4	12.3	11.7	7.0
Less: Private consumer expenditure	464,760	12.9	14.5	12.3	11.9	7.8
Less: Transfers to general government and abroad	1,185	-5.9	217.1	4.3	13.7	10.1
Personal saving	4,070	-31.8	-26.7	12.3	-1.3	-40.9
Personal saving as a percent of personal disposable income 2/		2.8	1.8	1.8	1.6	0.9

Source: South African Reserve Bank, *Quarterly Bulletin.*

1/ After adjustment for net remuneration paid to the rest of the world.
2/ After provision for depreciation and inventory valuation adjustment.

Table 29. South Africa: Real Gross Domestic Product at Factor Cost, 1994-99

	1998		1994	1995	1996	1997	1998	1998				1999		
	Millions of rand	Percent of total						I	II	III	IV	I	II	III
	(At current prices)		(Annual percentage change; at 1995 prices)					(Seasonally adjusted at annual rates)						
Primary sector	69,892	10.3	3.3	-9.9	8.0	1.9	-1.6	-6.3	-7.8	-6.5	-5.5	1.5	7.6	15.9
Agriculture, forestry, and fishing	25,648	3.8	7.9	-19.9	24.0	2.3	-3.1	-11.2	-14.8	-11.9	-12.7	4.6	20.4	46.2
Mining and quarrying	44,244	6.5	0.5	-3.1	-0.8	1.7	-0.5	-2.6	-2.5	-2.7	-0.5	-0.4	-0.3	-2.0
Industry sector	171,721	25.4	3.1	5.6	2.0	2.7	-1.1	0.1	-1.9	-7.7	0.4	-0.3	0.3	0.9
Manufacturing	128,561	19.0	2.7	6.5	1.4	2.4	-1.8	-0.7	-2.9	-9.7	0.7	0.6	0.5	1.0
Electricity, gas, and water	22,479	3.3	5.8	2.0	5.7	4.4	1.2	3.2	1.6	-0.9	1.5	-4.2	1.3	2.8
Construction	20,681	3.1	2.9	3.6	2.0	3.0	1.2	1.9	1.1	-1.6	-2.9	-1.2	-2.4	-1.8
Service sector	434,265	64.3	2.9	4.5	4.3	2.5	1.9	2.4	3.3	1.9	1.8	1.8	2.2	2.2
Wholesale and retail trade and catering	89,266	13.2	2.5	5.9	3.7	0.4	-1.4	-0.3	-2.5	-2.8	-3.0	1.5	1.9	2.2
Transport, storage, and communication	64,995	9.6	4.6	10.6	6.4	7.3	8.1	5.6	10.5	11.4	11.2	3.5	4.8	4.2
Finance, insurance, real estate, and business services	124,295	18.4	3.7	3.5	6.7	4.3	3.6	5.1	7.9	2.7	2.0	2.0	2.7	2.9
General government and other services	155,709	23.0	1.9	2.0	2.1	0.4	-0.1	0.6	0.3	-0.1	0.2	0.9	0.8	0.7
GDP at factor cost	675,878	100.0	3.0	3.0	4.1	2.5	0.7	0.8	0.6	-1.7	0.6	1.2	2.3	3.3
Memorandum item:														
GDP less general government	559,443	82.8	3.4	3.4	4.5	2.9	0.9	0.9	0.8	-1.8	0.8	1.3	2.6	3.9

Source: South African Reserve Bank, *Quarterly Bulletin*.

Table 30. South Africa: Indicators of Mining and Quarrying Activity, 1991-98

	Weights 1/	1991	1992	1993	1994	1995	1996	1997	1998
				(Annual percentage change)					
Production volume	100	-0.9	0.4	2.9	-1.5	-0.8	-1.7	2.0	-1.5
Gold	45.8	-0.7	2.0	1.0	-6.4	-9.6	-5.0	-0.5	-4.2
Nongold	54.2	-1.1	-0.8	4.4	2.8	5.9	0.7	4.0	0.7
Gross fixed investment at 1990 prices		-6.8	-18.7	-24.8	18.2	4.2	1.5	13.2	12.0
Fixed capital stock at 1990 prices		2.1	0.1	-1.7	-0.8	-0.6	-0.5	0.4	1.3
				(In percent)					
Memorandum items:									
Share in total capital stock at 1990 prices		9.2	9.1	8.9	8.8	8.6	8.5	8.3	8.3
Share in total nonagricultural employment		12.9	12.1	11.5	11.4	11.3	10.8	10.6	8.4
Share in real GDP at factor cost		7.2	7.5	7.6	7.4	7.0	6.6	6.6	6.5

Source: South African Reserve Bank, *Quarterly Bulletin*.

1/ In 1990.

Table 31. South Africa: Indicators of Manufacturing Activity, 1994-99

	1994	1995	1996	1997	1998	1998				1999		
						I	II	III	IV	I	II	III
	(Annual percentage change, at 1995 prices)											
Production volume	2.7	6.4	0.8	3.2	-2.7	5.3	5.6	-2.3	-2.3	-6.2	-4.3	12.3
Durable goods	3.5	9.1	2.3	2.9	-5.5	11.3	4.0	-14.6	4.9	-14.7	-10.0	15.3
Nondurable goods	2.1	4.5	-0.1	3.3	-0.8	1.2	6.5	7.7	-7.5	0.0	-0.8	10.6
Sales	2.1	7.5	2.1	0.8	-3.5	-0.4	-5.4	4.1	-9.9	0.4	7.5	17.8
New orders	7.9	7.6	3.1	0.1	-4.2	35.6	-9.3	-2.4	12.5	-10.7	2.0	n.a
Unfulfilled orders	12.6	4.4	-6.5	-2.1	-14.9	-23.3	-16.0	24.1	0.5	-26.1	6.8	n.a
Gross fixed investment	9.2	20.6	6.5	3.6	-5.5	-15.7	6.9	-11.6	-8.7	-1.4	2.7	-0.3
Unit labor costs	8.1	4.0	4.8	1.3	14.4	31.8	24.9	14.3	10.3	0.0	13.2	n.a
Production prices	8.9	10.0	8.5	7.5	3.8	1.0	4.1	7.2	4.0	5.6	7.9	5.4
Labor productivity	1.9	5.7	4.7	7.6	1.3	9.1	-4.4	-3.5	1.4	1.1	0.4	n.a
	(In percent)											
Capacity utilization	80.0	83.3	81.5	81.2	80.1	80.8	80.6	79.3	79.8	78.6	78.5	n.a.
Durable goods	78.5	82.8	80.9	80.6	78.9	79.5	80.2	78.4	77.7	77.1	77.1	n.a.
Nondurable goods	81.5	83.5	81.8	81.9	81.3	82.1	81.5	80.3	81.4	79.7	79.3	n.a.

Source: South African Reserve Bank, *Quarterly Bulletin.*

Table 32. South Africa: Nonagricultural Employment, 1990-99
(1995 = 100)

		Public Authorities 1/			Private sector			
		General government	Business enterprises 2/	Total	Mining	Manu-facturing	Total 3/	Grand total
1990		99.50	130.80	103.20	130.50	105.70	110.50	108.10
1991		101.30	128.80	104.60	121.10	103.30	106.60	105.90
1992		103.10	123.50	105.50	111.20	100.70	102.90	103.80
1993		103.40	108.00	104.00	103.70	98.60	100.40	101.50
1994		104.90	100.80	104.40	102.20	99.40	99.50	101.10
1995		100.00	100.00	100.00	100.00	100.00	100.00	100.00
1996		104.00	98.50	103.40	95.30	96.30	97.40	99.30
1997		104.10	95.40	103.10	92.10	92.30	95.00	97.60
1998		103.00	91.40	101.60	77.30	88.60	90.30	94.00
				(End of quarter; seasonally adjusted)				
1994								
	I	104.00	101.80	103.70	102.60	98.90	99.20	100.70
	II	104.50	100.30	104.00	103.10	99.20	99.50	101.00
	III	105.40	99.70	104.80	101.70	99.80	99.70	101.30
	IV	105.70	101.40	105.20	101.50	99.70	99.50	101.30
1995								
	I	105.70	101.10	105.20	101.20	100.10	100.30	101.90
	II	96.40	100.80	96.90	100.80	100.70	100.50	99.30
	III	96.40	99.80	96.80	99.50	100.20	99.80	98.90
	IV	101.50	98.30	101.10	98.50	99.00	99.40	99.90
1996								
	I	102.30	98.30	101.80	95.60	97.40	98.10	99.30
	II	104.30	98.80	103.70	94.70	96.70	97.40	99.50
	III	105.10	98.70	104.30	95.80	95.50	97.10	99.40
	IV	104.30	98.30	103.60	95.00	95.70	96.90	99.10
1997								
	I	104.10	97.70	103.40	94.10	94.40	96.00	98.40
	II	104.40	96.20	103.40	93.90	92.70	95.40	98.00
	III	104.10	95.10	103.10	91.80	91.70	94.80	97.50
	IV	103.80	92.50	102.50	88.50	90.50	93.70	96.60
1998								
	I	102.40	91.60	101.10	80.10	89.30	91.10	94.40
	II	103.30	91.10	101.80	77.80	88.60	90.50	94.20
	III	103.30	91.30	101.90	76.60	88.60	90.00	93.90
	IV	103.00	91.50	101.60	74.90	88.00	89.60	93.60
1999								
	I	102.10	90.00	100.70	74.00	88.10	90.30	93.70
	II	101.00	86.70	99.30	73.70	87.30	89.60	92.80

Source: South African Reserve Bank, *Quarterly Bulletin.*

1/ Central government, local authorities, provincial administrations, statutory bodies, and national and independent states (TVBC).
2/ Transnet and the Department of Posts and Telecommunications.
3/ Includes also construction, commerce, and private services sectors (e.g. banking, insurance, hotels, transport and laundary)

Table 33. South Africa: Remuneration, Labor Productivity, and Unit Labor Costs in the Nonagricultural Sector, 1994-99

	1994	1995	1996	1997	1998	1998 1/				1999 1/	
						I	II	III	IV	I	II
	(Annual percentage change)										
Remuneration per worker											
At current prices											
Public authorities	20.8	14.2	10.3	10.9	11.5	7.9	13.4	7.1	18.0	4.9	2.7
Private sector	9.9	11.0	11.0	10.1	17.3	18.1	16.2	16.7	18.3	9.2	10.0
Total	14.3	11.9	11.3	10.8	15.1	13.8	15.4	12.9	18.6	7.3	6.6
At constant 1990 prices 2/											
Public authorities	10.4	4.0	1.6	2.8	3.5	-0.6	5.0	-0.3	10.4	-2.3	-4.5
Private sector	0.6	0.9	2.3	2.0	8.9	8.7	7.6	8.6	10.8	1.7	2.3
Total	4.7	1.7	2.7	2.4	6.8	4.8	7.0	5.0	11.0	-0.1	-0.9
Labor productivity	3.2	5.4	4.0	4.1	4.6	5.6	5.0	4.2	3.5	0.9	1.7
Unit labor costs	10.8	6.2	7.1	6.3	10.1	7.8	10.0	8.2	14.7	6.3	4.8

Source: South African Reserve Bank, *Quarterly Bulletin.*

1/ Seasonally adjusted.

Table 34. South Africa: Price Developments, 1994-99

	Weight 1/	1994	1995	1996	1997	1998	1998				1999		
							I	II	III	IV	I	II	III
							(Seasonally adjusted at annual rate)						
Consumer prices	100.0	9.0	8.6	7.4	8.6	6.9	5.5	6.1	22.2	3.8	1.5	3.4	-2.1
Goods	55.0	9.4	7.4	6.2	8.1	6.0	4.8	8.0	8.1	3.9	4.9	7.5	6.0
Of which: Food	18.8	13.6	8.7	6.2	9.9	6.3	6.9	12.4	2.3	5.9	3.5	4.4	3.4
Services	45.0	8.9	10.7	9.5	9.1	7.9	4.3	2.6	40.9	7.6	-4.3	-2.0	-11.0
Of which: Housing	26.0	4.6	13.4	11.7	8.3	8.3	9.5	-7.1	76.1	0.6	-6.6	-13.1	-25.1
Producer prices	100.0	8.2	9.6	6.9	7.1	3.5	0.7	3.8	9.5	1.7	6.5	8.1	5.9
Goods produced in South Africa	80.7	8.9	9.9	7.5	7.6	3.5	2.1	4.1	5.5	7.9	8.1	6.3	3.9
Imported goods	19.3	5.5	7.6	5.3	5.0	3.1	-5.6	2.6	29.3	-2.7	1.4	17.1	11.3
GDP deflator at market prices		9.6	10.3	8.3	7.8	7.6	3.5	9.7	14.0	3.0	6.4	2.2	14.9
Memorandum items:													
Twelve-month rate to end-of-period													
Consumer prices		10.1	7.0	9.4	6.0	9.1	5.4	5.2	9.0	9.1	8.1	7.4	1.6
Producer prices		10.3	8.8	8.6	3.8	3.9	2.4	3.0	4.3	3.9	5.3	6.4	5.5

Source: South African Reserve Bank, *Quarterly Bulletin.*

1/ The weights for the consumer price series correspond to 1995 expenditure patterns; and the weights for the producer price series are based upon 1989/90 production and foreign trade statistics.

Table 35. South Africa: National Government Finances, 1995/96- 1999/2000 1/

	1995/96	1996/97	1997/98	1998/99	1999/2000 Proj
	(In billions of rand)				
Total revenue and Grants	126.1	146.5	163.5	184.5	194.0
Total revenue	125.9	146.3	163.3	184.0	192.6
Tax revenue	123.1	142.7	160.0	180.2	189.0
Direct taxes (taxes on income, profits)	68.9	82.9	95.0	108.4	113.0
Domestic taxes on goods and services	48.7	53.4	60.5	65.9	71.9
of which: VAT	32.8	35.9	40.1	43.7	47.8
Trade taxes /2	2.3	2.8	0.4	0.4	-0.6
Other	3.3	3.6	4.1	5.5	4.6
Non-tax revenue (including grants) 3/	2.8	3.7	3.3	3.9	4.4
Total expenditure and Net lending	154.5	175.3	190.6	204.0	216.6
Current expenditure	147.0	168.7	181.3	194.0	205.1
Wages and Salaries	57.9	67.6	73.8	82.2	86.4
Other Purchases of goods and Services	20.2	23.6	24.5	23.8	25.2
Interest payments 3/	29.3	34.1	39.5	42.7	44.7
Other current expenditure	39.5	43.4	43.6	45.4	48.8
Capital expenditure	7.6	6.6	9.3	10.0	11.5
Overall balance	-28.5	-28.8	-27.1	-19.5	-22.6
Primary balance	0.9	5.3	12.4	23.2	22.1
	(In percent of GDP)				
Total revenue and Grants	22.3	23.1	23.4	24.4	23.8
Total revenue	22.3	23.1	23.4	24.4	23.6
Tax revenue	21.8	22.5	22.9	23.9	23.2
Direct taxes (taxes on income, profits)	12.2	13.1	13.6	14.4	13.9
Domestic taxes on goods and services	8.6	8.4	8.7	8.7	8.8
of which: VAT	5.8	5.7	5.7	5.8	5.9
Trade taxes /2	0.4	0.4	0.1	0.1	-0.1
Other	0.6	0.6	0.6	0.7	0.6
Non-tax revenue (including grants)	0.5	0.6	0.5	0.5	0.5
Total expenditure and Net lending	27.4	27.7	27.3	27.0	26.6
Current expenditure	26.1	26.6	25.9	25.7	25.2
Wages and Salaries	10.3	10.7	10.5	10.9	10.6
Other Purchases of goods and Services	3.6	3.7	3.5	3.1	3.1
Interest payments 3/	5.2	5.4	5.6	5.7	5.5
Other current expenditure	7.0	6.9	6.2	6.0	6.0
Capital expenditure	1.3	1.0	1.3	1.3	1.4
Overall balance	-5.0	-4.5	-3.9	-2.6	-2.8
Primary balance	0.2	0.8	1.8	3.1	2.7
Memorandum item:					
National government debt (percent of GDP)	49.5	49.0	48.1	50.0	48.7
General government balance (percent of GDP) 3/ 4/	-4.9	-5.1	-5.0	-2.4	-2.9
PSBR of the nonfinancial public sector (percent of GDP 5/	4.6	5.5	4.4	4.8	3.2
GDP (billions of rands)	564.1	633.8	699.3	754.7	815.3

Sources: Department of Finance; and Fund staff estimates.

1/ Fiscal year begins April 1.
2/ Net of SACU payments.
3/ Excludes extarordinary receipts, including privatization receipts and sales of strategic oil stocks, and the profit/loss from the forward market operations of the Reserve Bank
4/ Includes the national government, extrabudgetary institutions (e.g., universities), social security fund, provinces, and local authorities
5/ General government plus the nonfinancial public enterprises.
Excludes extarordinary receipts, including privatization receipts and sales of strategic oil stocks, but includes the profit/loss from the forward market operations of the Reserve Bank

Table 36. South Africa: National Government Revenue, 1994/95-1999/00 1/

(In billions of rand)

	1994/95	1995/96	1996/97	1997/98	1998/99 Budget	1998/99 Prel	1999/00 Budget
Revenue	112.2	127.3	148.4	164.5	177.4	181.9	199.3
Inland Revenue	92.4	103.9	121.1	137.6	147.3	151.3	166.9
Income tax	59.9	68.1	82.3	91.7	95.8	99.7	111.0
Gold mines	1.2	0.9	0.5	0.5	0.2	0.2	0.3
Other mines	0.5	0.7	1.3	1.4	1.2	1.5	1.6
Nonmining companies	13.3	15.3	20.9	20.5	22.6	21.6	26.5
Individuals	45.0	51.2	59.5	69.4	71.8	76.4	82.7
Sales tax/VAT	29.3	32.8	35.9	40.1	43.4	43.6	47.2
Other	3.2	3.0	3.0	5.8	8.1	8.0	8.6
Customs and Excise	17.9	19.2	21.4	22.4	26.3	24.2	24.9
Customs duty	4.2	5.3	6.5	6.0	6.7	6.2	6.6
Surcharge	1.2	0.5	0.0	0.0	0.0	0.0	0.0
Excise duty	5.8	6.5	6.7	7.9	9.0	8.3	9.4
Fuel levy	8.4	8.9	10.4	12.1	14.4	13.6	14.4
Other	1.6	1.9	2.2	1.6	1.8	1.6	1.7
SACU payments	-3.2	-3.9	-4.4	-5.2	-5.6	-5.6	-7.2
Nontax Revenue	1.9	2.7	3.6	2.8	3.0	3.4	3.5
Grants	0.0	0.1	0.5	0.0	0.0	0.0	0.0
Extraordinary Revenue 2/	0.0	1.3	1.6	2.5	0.8	3.1	4.0
of which: Sales of oil stocks	0.0	1.3	1.6	1.3	0.8	1.7	0.0
Memorandum items:							
Direct taxes	61.0	68.9	82.9	91.7	95.8	99.7	111.0
Indirect taxes	49.3	54.2	61.3	70.0	72.6	70.5	75.0

Source: Department of Finance.

1/ Fiscal year begins April 1. Excludes repayment of budget lending.

2/ Includes privatization receipts.

Table 37. South Africa: National Government Revenue, 1994/95-1999/00 1/

(In percent of GDP)

	1994/95	1995/96	1996/97	1997/98	1998/99 Budget	1998/99 Prel	1999/00 Budget
Revenue	25.2	25.6	26.7	26.8	26.5	27.8	28.1
Inland Revenue	20.8	20.9	21.8	22.4	22.0	23.1	23.6
Income tax	13.5	13.7	14.8	15.0	14.3	15.2	15.7
Gold mines	0.3	0.2	0.1	0.1	0.0	0.0	0.0
Other mines	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Nonmining companies	3.0	3.1	3.8	3.3	3.4	3.3	3.7
Individuals	10.1	10.3	10.7	11.3	10.7	11.7	11.7
Sales tax/VAT	6.6	6.6	6.5	6.5	6.5	6.7	6.7
Other	0.7	0.6	0.5	1.0	1.2	1.2	1.2
Customs and Excise	4.0	3.9	3.9	3.7	3.9	3.7	3.5
Customs duty	1.0	1.1	1.2	1.0	1.0	0.9	0.9
Surcharge	0.3	0.1	0.0	0.0	0.0	0.0	0.0
Excise duty	1.3	1.3	1.2	1.3	1.3	1.3	1.3
Fuel levy	1.9	1.8	1.9	2.0	2.2	2.1	2.0
Other	0.4	0.4	0.4	0.3	0.3	0.2	0.2
SACU payments	-0.7	-0.8	-0.8	-0.9	-0.8	-0.9	-1.0
Nontax Revenue	0.4	0.5	0.7	0.5	0.5	0.5	0.5
Grants	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Extraordinary Revenue 2/	0.0	0.3	0.3	0.4	0.1	0.5	0.6
of which: Sales of oil stocks	0.0	0.3	0.3	0.2	0.1	0.3	0.0
Memorandum items:							
Direct taxes	13.7	13.9	14.9	15.0	14.3	15.2	15.7
Indirect taxes	11.1	10.9	11.0	11.4	10.9	10.8	10.6

Source: Department of Finance.

1/ Fiscal year begins April 1. Excludes repayment of budget lending.

2/ Includes privatization receipts.

Table 38. South Africa: Economic Classification of National plus Provincial Government Expenditure, 1994/95 - 1999/00 1/

	1994/95	1995/96	1996/97 Budget	1997/98 Budget	1998/99 Budget	1999/00 Budget
			(In billions of rand)			
Goods and services	77.2	83.1	91.2	98.3	105.6	111.7
Remuneration of employees	56.5	59.0	67.6	73.8	81.8	86.5
Other	20.7	24.1	23.6	24.5	23.8	25.2
Interest 2/	24.9	30.3	34.6	38.6	43.8	48.5
Current transfers	34.8	39.0	37.1	37.2	43.7	44.1
Businesses	8.0	8.5	7.7	6.9	6.9	6.9
Households	14.9	16.6	16.3	17.6	19.8	20.2
Foreign	0.2	0.3	0.2	0.3	0.2	0.2
Other general government institutions and funds	11.7	13.6	12.8	12.5	16.8	16.8
Capital expenditure and transfers	11.3	16.7	14.2	14.8	13.9	14.2
Investment	7.9	11.7	10.1	9.4	7.5	8.0
Capital transfers	3.0	4.7	3.9	5.3	6.4	6.2
Businesses, households and foreign	0.5	0.7	0.5	1.4	1.2	1.1
Other general government institutions	2.5	4.0	3.4	4.0	5.2	5.1
Purchases of shares and loans	0.4	0.2	0.2	0.1	0.0	0.0
Unallocated	--	--	0.5	1.3	0.0	1.1
Less: Unspent funds 3/	8.0	13.0	--	--	--	--
Surrenders	1.6	4.1	--	--	--	--
Funds rolled over to new year	6.4	8.9	--	--	--	--
Total expenditure (cash)	140.2	156.0	177.6	190.2	207.0	219.6
			(In percent of GDP)			
Goods and services	17.4	16.7	16.3	15.8	16.1	15.8
Remuneration of employees	12.7	11.9	12.1	11.9	12.5	12.2
Other	4.7	4.8	4.2	3.9	3.6	3.6
Interest 2/	5.6	6.1	6.2	6.2	6.7	6.8
Current transfers	7.8	7.8	6.6	6.0	6.7	6.2
Businesses	1.8	1.7	1.4	1.1	1.1	1.0
Households	3.3	3.3	2.9	2.8	3.0	2.9
Foreign	0.1	0.1	--	--	--	--
Other general government institutions and funds	2.6	2.7	2.3	2.0	2.6	2.4
Capital expenditure and transfers	2.6	3.3	2.5	2.4	2.1	2.0
Investment	1.8	2.4	1.8	1.5	1.1	1.1
Capital transfers	0.7	0.9	0.7	0.9	1.0	0.9
Businesses, households and foreign	0.1	0.1	0.1	0.2	0.2	0.2
Other general government institutions	0.6	0.8	0.6	0.6	0.8	0.7
Purchases of shares and loans	0.1	--	--	--	--	--
Unallocated	--	--	0.1	0.2	0.0	0.2
Less: Unspent funds 3/	1.8	2.6	--	--	--	--
Surrenders	0.4	0.8	--	--	--	--
Funds rolled over to new year	1.4	1.8	--	--	--	--
Total expenditure (cash)	31.5	31.4	31.6	30.6	31.7	31.0

Source: Department of Finance.

1/ Fiscal year begins April 1; includes transfers to local government, extrabudgetary funds, and social security funds (though not extraordinary transfers). Actual figures for 1996/97 and 1997/98 not available.

2/ Does not include exchange rate losses on amortized loans, as in Table 40.

3/ These comprise allocations that were unspent during the fiscal year. It is not possible to separate these funds from the allocations shown in the other lines. The amounts rolled over are shown within the allocations in the next fiscal year.

Table 39. South Africa: Functional Classification of National plus Provincial Government Expenditure, 1994/95-1999/00, in rand 1/

	1994/95	1995/96	1996/97 Budget	1997/98 Budget	1998/99 Budget	1999/00 Budget
	(In billions of rand)					
Protection services	27.1	27.7	28.1	29.6	34.3	35.5
Defence	12.9	12.8	11.8	10.7	11.6	12.0
Other 2/	14.2	14.9	16.3	18.9	22.6	23.5
Social services	65.4	79.6	81.4	88.6	98.8	103.7
Education	31.6	36.7	39.2	40.3	46.3	48.5
Non-tertiary	27.1	31.0	32.3	33.1	--	--
Tertiary	4.6	5.6	6.8	7.2	--	--
Health	15.6	17.7	18.5	20.2	23.2	24.0
Social security and welfare	13.7	15.7	16.4	18.4	19.3	19.8
Housing and related services	1.6	3.5	1.6	4.2	8.5	9.9
Other 3/	2.9	6.1	5.7	5.5	1.5	1.5
Economic services	17.8	20.2	19.5	18.9	19.3	18.9
Agriculture, forestry and fishing	3.6	4.3	4.4	4.5	3.5	3.6
Transport and communication	6.7	7.7	7.7	7.3	8.3	8.2
Other economic services 4/	7.4	8.3	7.5	7.1	7.6	7.2
of which: export trade promotion	2.2	2.3	1.9	1.4	--	--
Other noninterest 5/	13.2	12.4	13.5	13.2	--	--
Interest payments 6/	24.9	30.3	34.6	38.5	43.8	48.5
Unallocated funds	--	--	0.5	1.3	0.0	1.1
Less: Unspent funds 7/	8.0	14.1	--	--	--	--
Surrenders and suspensions 8/	1.6	5.2	--	--	--	--
Funds rolled over to new year	6.4	8.9	--	4.8	--	--
Total expenditure (cash)	140.2	156.0	177.6	190.2	196.2	207.7

Source: Department of Finance; and Fund staff estimates.

1/ Fiscal year begins April 1; general government comprises central and provincial governments, but excludes local governments, extrabudgetary funds, and social security funds. Actual figures for 1996/97 and 1997/98 not available.

2/ Police, prisons and law courts.

3/ Recreation and culture, community development, other community services and sewerage and sanitation.

4/ Including water, fuel and energy, mining, manufacturing and regional development.

5/ Including foreign affairs, general reserach, general administration, cost of raising loans, unallocable expenditure, and certain transfers to government enterprises.

6/ Does not include exchange rate losses on amortized loans, as in Table 40.

7/ Includes allocations that were unspent during the fiscal year. It is not possible to separate these funds from the allocations shown in the other lines. The amounts rolled over are shown within the allocations in the next fiscal year.

8/ In 1995/96, includes recovery from pension fund of R 1060 million, which cannot be allocated in the categories above.

Table 40. South Africa: Functional Classification of National plus Provincial Government Expenditure, 1994/95-1999/00, in percent of GDP 1/

	1994/95	1995/96	1996/97 Budget	1997/98 Budget	1998/99 Budget	1999/00 Budget
			(In percent of GDP)			
Protection services	6.1	5.0	5.0	4.8	5.2	5.0
Defence	2.9	2.3	2.1	1.7	1.8	1.7
Other 2/	3.2	2.7	2.9	3.0	3.5	3.3
Social services	14.7	14.3	14.5	14.3	15.1	14.6
Education	7.1	6.6	7.0	6.5	7.1	6.9
Non-tertiary	6.1	5.6	5.8	5.3	0.0	0.0
Tertiary	1.0	1.0	1.2	1.2	0.0	0.0
Health	3.5	3.2	3.3	3.3	3.6	3.4
Social security and welfare	3.1	2.8	2.9	3.0	2.9	2.8
Housing and related services	0.4	0.6	0.3	0.7	1.3	1.4
Other 3/	0.6	1.1	1.0	0.9	0.2	0.2
Economic services	4.0	3.6	3.5	3.0	3.0	2.7
Agriculture, forestry and fishing	0.8	0.8	0.8	0.7	0.5	0.5
Transport and communication	1.5	1.4	1.4	1.2	1.3	1.2
Other economic services 4/	1.7	1.5	1.3	1.1	1.2	1.0
of which: export trade promotion	0.5	0.4	0.3	0.2	--	--
Other noninterest 5/	3.0	2.2	2.4	2.1	--	--
Interest payments 6/	5.6	5.5	6.2	6.2	6.7	6.8
Unallocated funds	--	--	0.1	0.2	0.0	0.2
Less: Unspent funds 7/	1.8	2.5	--	--	--	--
Surrenders and suspensions 8/	0.4	0.9	--	--	--	--
Funds rolled over to new year	1.4	1.6	--	0.8	--	--
Total expenditure (cash)	31.5	28.1	31.6	30.6	30.0	29.3

Source: Department of Finance; and Fund staff estimates.

1/ Fiscal year begins April 1. Actual data for 1996/97 and 1997/98 not available.

2/ Police, prisons and law courts.

3/ Recreation and culture, community development, other community services and sewerage and sanitation.

4/ Including water, fuel and energy, mining, manufacturing and regional development.

5/ Including foreign affairs, general reserach, general administration, cost of raising loans, unallocable expenditure, and certain transfers to government enterprises.

6/ Does not include exchange rate losses on amortized loans, as in Table 40.

7/ Includes allocations that were unspent during the fiscal year. It is not possible to separate these funds from the allocations shown in the other lines. The amounts rolled over are shown within the allocations in the next fiscal year.

8/ In 1995/96, includes recovery from pension fund of R 1060 million, which cannot be allocated in the categories above.

Table 41. South Africa: Financing of the National Government Budget, 1994/95-1998/99 1/

(In millions of rand)

	1994/95	1995/96	1996/97	1997/98	1998/99
Fiscal balance before borrowing 2/	-25,522	-30,234	-31,115	-26,523	-24,325
Government stock, bonds, and bills	24,990	32,536	22,423	19,370	19,227
Government stock, bonds and bills issued	34,433	41,372	28,613	23,405	25,582
Discount on government stock	-9,443	-8,836	-6,190	-4,035	-6,355
Loan levy	-710	0	0	0	0
Other financing	-19	-4,215	-4,120	-3,976	1,000
Foreign loans	2,604	1,745	1,277	3,815	-32
Use of cash balances	-1,374	1,883	5,812	389	1,408
Unusual receipts	31	1,358	1,603	2,949	2,722
Privatization	0	0	0	1,697	991
Other 3/	31	1,358	1,603	1,252	1,730
Unusual transfers	0	-3,073	0	0	0
Gold and Foreign Exchange Contingency	0	-3,073	0	0	0
Government Pension Funds	0	0	0	0	0
Total financing	25,522	30,234	31,115	26,523	24,325

Source: South African Reserve Bank, Quarterly Bulletin, and Fund staff estimates.

1/ Fiscal year begins April 1.

2/ Reserve Bank data for the central government deficit differ from Department of Finance data owing to differences of definition and timing.

3/ Includes receipts from the sale of strategic stocks held by the National Supplies Procurement and Central Energy Funds.

Table 42. South Africa: National Government Debt, 1994/95-1998/99

(In millions of rand)

	1994/95	1995/96	1996/97	1997/98	1998/99
External debt 1/	8,784	10,944	11,394	14,560	16,006
Domestic debt	218,494	259,861	292,572	319,938	345,832
Marketable	216,476	258,892	289,852	318,438	344,708
Bonds	209,458	248,192	275,552	301,153	325,708
Bills	7,018	10,700	14,300	17,285	19,000
Loan levies	0	0	0	0	0
Nonmarketable	2,018	969	2,720	1,500	1,124
Bonds	175	61	0	0	0
Bills and floating rate stock	1,840	905	2,717	1,497	1,122
Loan levies 2/	3	3	3	3	3
Gold and foreign exchange contingency reserve account 3/	4,147	0	2,169	73	14,431
Debt of former homelands 4/	13,072	8,883	4,472	1,810	1,387
Total government debt	244,497	279,688	310,607	336,381	377,656
(In percent of GDP)	43.3	56.1	49.0	48.1	50.0
Memorandum items (as a percentage of total debt):					
External government debt	3.6	3.9	3.7	4.3	4.2
Domestic government debt	89.4	92.9	94.2	95.1	91.6
Marketable	88.5	92.6	93.3	94.7	91.3
of which: Bonds	85.7	88.7	88.7	89.5	86.2
Nonmarketable	0.8	0.3	0.9	0.4	0.3
Other (listed above)	7.0	3.2	2.1	0.6	4.2

Sources: South African Reserve Bank, Quarterly Bulletin; 1997/98 Budget Review; and staff estimates.

1/ Adjusted for exchange rate changes.

2/ Including tax redemption certificates and personal saving.

3/ Includes losses on forward exchange cover provided by the Reserve Bank.

4/ This debt is being gradually regularized, mainly into marketable bills and government stock.

Table 43. South Africa: Growth Rates of Monetary Aggregates, 1988-99 1/

	M1A	M1	M2	M3
	(Percentage change from year ago)			
1988	25.0	23.1	35.2	27.3
1989	10.4	9.6	26.7	22.3
1990	14.3	15.1	12.8	12.0
1991	17.7	14.0	15.7	12.3
1992 March	25.2	13.5	11.5	9.0
June	18.6	10.5	11.5	7.2
September	23.6	23.2	12.8	8.7
December	16.2	17.5	10.8	8.0
1993 March	19.4	10.4	5.1	5.7
June	18.1	11.0	1.8	3.3
September	6.9	0.0	1.3	4.3
December	16.6	6.7	3.9	7.0
1994 March	25.7	19.4	13.6	12.3
June	25.1	27.2	17.0	14.6
September	28.8	26.1	18.5	14.3
December	24.8	23.7	20.6	15.7
1995 March	6.6	10.4	12.6	12.2
June	17.0	8.6	16.0	17.2
September	12.9	12.7	11.5	16.1
December	16.8	19.3	13.9	15.2
1996 March	16.1	27.0	17.8	15.3
June	14.7	28.7	17.9	15.7
September	18.7	30.7	18.4	14.5
December	21.9	30.9	15.7	13.6
1997 March	25.7	30.1	17.8	16.5
June	24.5	19.1	13.0	12.7
September	25.2	23.7	17.5	16.3
December	23.0	17.3	18.7	17.2
1998 March	25.0	14.9	15.1	15.2
June	23.3	35.3	21.4	19.4
September	17.6	33.6	18.9	16.7
December	13.5	23.6	13.6	14.6
1999 March	12.6	22.0	8.9	9.9
June	14.7	8.4	6.5	6.5
September	20.6	4.3	9.1	7.8

Source: South African Reserve Bank, *Quarterly Bulletin.*

1/ M1A includes coins and bank notes in circulation and check and transmission deposits with banking institutions, building societies, and the Post Office Savings Bank. M1 is defined as M1A plus other demand deposits with banking institutions. M2 is defined as M1 plus other short-term deposits and medium-term deposits with banking institutions and building societies, plus savings deposits with, and savings bank certificates of, the Post Office Savings Bank. M3 is defined as M2 plus all long-term, deposits with banking institutions and building societies (including, for the latter, other "share" investments), plus investments in national savings certificates issued by the Post Office Savings Bank.

Table 44. South Africa: Monetary Survey, 1995-99

	1995 Dec.	1996 Dec.	1997 Dec.	1998 Dec.	1999 Sept.
	(In billions of rand)				
Net foreign assets	-14.0	-26.1	-19.9	-28.9	-14.7
Gross reserves	20.0	18.8	37.8	50.7	63.5
Reserve Bank	15.7	10.3	28.5	31.6	39.2
Other monetary institutions	4.3	8.5	9.3	19.1	24.3
Liabilities	33.9	44.9	57.6	79.6	78.2
Reserve Bank	0.0	0.0	9.8	18.1	17.8
Other monetary institutions	33.9	44.8	47.8	61.5	60.5
Net domestic assets	295.1	345.5	394.1	457.6	465.8
Credit to government, net	5.8	10.2	20.0	31.3	34.7
Claims on government	31.8	39.7	48.2	59.1	65.8
Government deposit	26.0	29.5	28.2	27.8	31.2
Credit to private sector	316.7	367.2	420.1	490.1	523.1
Other items, net	-27.4	-31.9	-46.0	-63.8	-92.0
Broad money (M3)	281.2	319.4	374.2	428.7	451.1
Of which: M1	112.7	147.6	173.1	213.9	229.0
	(Annual percentage change)				
Net foreign assets	14.5	-86.7	23.9	-45.4	41.9
Net domestic assets	13.3	17.1	14.1	16.1	4.9
Credit to government, net	-62.3	74.6	96.2	56.4	0.8
Credit to private sector	17.8	15.9	14.4	16.7	11.5
Other items, net	-14.6	-16.3	-44.2	-38.7	-54.2
Broad money (M3)	15.2	13.6	17.2	14.6	7.8
	(Contribution to growth in M3)				
Net foreign assets	1.0	-4.3	1.9	-2.4	2.5
Net domestic assets	14.2	17.9	15.2	17.0	5.2
Credit to government, net	-4.0	1.5	3.1	3.0	0.1
Credit to private sector	19.6	18.0	16.6	18.7	12.9
Other items, net	-1.4	-1.6	-4.4	-4.8	-7.7
Memorandum item:					
Income velocity of M3	2.03	2.01	1.90	1.77	1.78
	(In percent, unless otherwise specified)				
Official risk indicators: 1/					
Share of nonperforming loans in total lending	3.3	3.2	3.3	3.9	...
Risk-based capital adequacy ratio	10.0	9.7	9.9	10.7	...
Financial sector risk factors:					
Share of foreign currency loans in total lending 2/	3.6	4.1	3.8	4.1	6.4
Share of foreign currency deposits in total deposits	0.7	1.5	2.3	3.5	3.7
Share of foreign liabilities in total liabilities 2/ 3/	7.3	9.0	7.3	7.1	6.6
Share of short-term deposits in total deposits 4/	35.0	41.2	41.6	45.6	46.4
Share of mortgage advances in private credit	43.0	43.4	42.3	39.9	38.4
Market assessment:					
Share prices of financial institutions 5/	127	140	197	175	185

Sources: South African Reserve Bank; and Fund staff estimates.

1/ Banks are audited using acceptable international standards; capital adequacy requirements are also imposed on securities trading.

2/ Including foreign financing in bank's own name on-lent to clients.

3/ Including foreign currency deposits and other foreign loans and advances.

4/ Short-term deposits include cheque and demand deposits.

5/ Index, 1995 = 100.

Table 45. South Africa: Interest Rate Developments, 1993-99

(In percent)

	Short-term rates					Long-term rates	
	Bank rate/ Repo rate 1/ 2/	Rate on interbank deposits at call 2/	Treasury bill rate 3/	Rate on three-month deposits with commercial banks 2/	Clearing bank prime overdraft rate 2/	Government bond yield 2/ 4/	Predominant rate on new mortgages; participation bonds 2/
1993 March	...	10.9	11.3	11.9	16.3	14.5	15.9
June	13.0	10.8	11.9	12.0	16.3	14.7	15.1
September	13.0	11.2	11.6	11.7	16.3	13.3	15.1
December	12.0	9.6	10.2	10.3	15.3	12.3	15.1
1994 March	12.0	9.6	10.1	10.3	15.3	13.0	14.0
June	12.0	10.4	10.8	10.5	15.3	14.5	14.0
September	13.0	9.8	10.8	11.5	16.3	16.9	14.0
December	13.0	11.6	12.5	12.6	16.3	16.8	15.1
1995 March	14.0	11.9	13.0	13.5	17.5	16.7	15.1
June	15.0	12.9	13.8	14.3	17.5	16.8	16.7
September	15.0	13.6	14.0	13.8	18.5	15.5	17.5
December	15.0	14.8	13.9	13.5	18.5	14.6	17.5
1996 March	15.0	14.1	14.1	13.8	18.5	15.0	17.5
June	16.0	16.0	15.8	15.5	20.5	15.8	19.5
September	16.0	15.4	15.3	15.2	19.5	15.4	18.3
December	17.0	17.7	15.9	16.0	20.3	16.2	18.6
1997 March	17.0	16.0	15.8	15.8	20.3	15.2	19.6
June	17.0	15.3	15.5	15.5	20.3	14.7	19.6
September	17.0	15.5	14.7	15.3	20.3	14.2	19.6
December	16.0	15.0	14.7	14.5	19.3	14.1	18.6
1998 January	16.0	14.8	14.4	14.5	19.3	13.6	18.6
February	16.0	14.3	14.0	14.0	19.3	13.5	18.6
March	15.0	13.2	13.2	13.0	18.3	13.3	18.6
April	14.9	13.0	12.9	12.9	18.3	12.9	18.6
May	18.0	13.9	13.0	13.6	18.3	13.5	18.6
June	20.2	18.2	16.0	17.0	22.3	14.6	17.8
July	21.4	20.0	19.0	17.7	24.0	15.9	16.4
August	21.9	20.5	19.7	21.6	25.5	17.0	17.5
September	21.9	21.0	21.6	20.3	25.5	18.3	20.5
October	20.7	20.1	19.5	18.7	24.5	16.5	20.5
November	19.7	18.5	17.8	17.5	23.5	16.1	22.0
December	19.3	17.8	17.2	17.3	23.0	16.4	22.0
1999 January	18.8	17.2	16.4	15.8	22.0	15.9	22.0
February	17.4	16.2	15.5	14.7	21.0	14.9	21.0
March	16.5	15.0	14.6	13.5	20.0	14.5	20.0
April	15.7	14.1	13.8	13.3	19.0	14.6	20.0
May	15.5	13.8	13.5	13.0	19.0	15.1	20.0
June	14.9	13.6	13.3	12.9	18.0	14.9	18.0
July	13.7	12.4	12.1	12.0	17.5	15.0	17.5
August	13.4	11.8	11.7	10.8	16.5	15.3	16.0
September	12.4	12.4	11.2	10.8	16.5	15.4	16.0

Sources: International Monetary Fund, *International Financial Statistics;* and South African Reserve Bank, *Quarterly Bulletin.*

1/ Until February 1998, Reserve Bank's discount rate for short-term government paper. Thereafter, average repurchase rate.

2/ End of period.

3/ Averages for each Friday of the month.

4/ Average yield on government bonds with a maturity of ten years and more.

Table 46. South Africa: Changes in Bank Credit, 1992-99 1/

	Credit to the private sector									
	Bills discounted, investments	Instalment sale credit 2/	Leasing finance 2/	Mortgage advances	Other loans and advances	Total	Credit to government, net	Total bank credit	Credit to the private sector	Total bank credit
	(Change from previous period; in millions of rand)								(Percentage change from year ago)	
1992	3,463	293	1,266	12,160	-368	16,815	3,606	20,420	8.7	10.4
1993	-4,976	3,510	993	14,619	6,173	20,317	244	20,563	9.7	9.5
1994	4,083	6,361	1,120	17,334	10,226	39,126	8,034	47,158	17.0	19.9
1995	2,075	8,019	2,762	21,919	12,470	47,244	-9,653	37,592	17.6	13.2
1996	-1,564	7,938	3,262	22,974	18,225	50,835	4,350	55,185	16.1	17.1
1997	2,794	4,157	-671	18,390	28,413	53,082	9,802	62,885	14.5	16.7
1998	3,571	2,037	-42	17,732	46,722	70,019	11,276	81,296	16.7	18.5
1994 March	-1,208	1,125	302	3,270	3,644	7,134	14,133	21,266	11.8	18.7
June	552	1,325	-43	3,909	-1,926	3,815	221	4,038	13.3	22.4
September	3,648	1,603	275	4,679	4,334	14,541	-686	13,853	15.3	22.2
December	1,088	2,308	586	5,476	4,174	13,632	-5,636	7,996	17.0	19.9
1995 March	-847	918	432	5,544	3,569	9,616	-2,046	7,570	17.6	12.9
June	-159	2,260	884	4,636	1,491	9,111	2,416	11,528	19.5	15.6
September	1,424	2,133	958	4,895	5,026	14,437	-6,743	7,693	18.3	12.6
December	2,196	2,708	488	6,844	2,384	14,619	-3,280	11,340	17.8	13.4
1996 March	-35	1,648	651	5,506	6,034	13,805	-2,647	11,157	18.7	14.3
June	-1,346	2,256	915	5,287	3,786	10,898	8,930	19,828	18.7	16.5
September	-352	1,772	1,687	6,785	4,686	14,579	-2,046	12,532	17.8	17.6
December	-162	2,262	9	5,396	3,719	11,222	113	11,337	15.9	17.0
1997 March	545	789	263	5,379	9,018	15,995	4,571	20,565	15.9	19.3
June	110	1,105	-96	4,441	8,570	14,130	-3,251	10,879	16.4	15.6
September	98	435	-57	4,390	4,838	9,704	4,008	13,712	14.3	15.4
December	1,837	1,828	-782	4,180	5,986	13,049	4,476	17,525	14.4	16.6
1998 March	1,442	1,103	-458	5,879	11,184	19,150	-2,706	16,444	14.6	14.7
June	2,802	971	245	4,521	13,261	21,800	12,006	33,806	16.0	19.9
September	-4,029	-110	18	4,251	7,992	8,121	5,086	13,208	15.3	19.2
December	3,356	73	153	3,081	14,285	20,948	-3,110	17,838	16.7	18.5
1999 March	4,163	414	-202	1,347	5,088	10,810	-8,244	2,566	14.0	14.8
June	847	-281	235	312	12,045	13,159	5,890	19,048	11.5	10.7
September	-3,248	54	-52	3,757	8,555	9,066	5,746	14,812	11.5	10.8

Source: South African Reserve Bank, *Quarterly Bulletin*.

1/ Credit extended by the banking sector, which comprises the Reserve Bank, the former National Finance Corporation, the Corporation for Public Deposits and the "pooled" funds of the former Public Debt Commissioners, the discount houses, the short term business of the Land Bank, the commercial and merchant banks, and other general banking institutions.

2/ Excluding unearned finance charges.

Table 47. South Africa: Summary of Balance of Payments and External Position, 1995-99

	1995	1996	1997	1998	1999 1/
	(In billions of U.S. dollars)				
Balance on current account	-2.2	-1.9	-2.3	-2.1	-0.3
Balance on goods and services	1.3	2.0	1.7	1.7	3.6
Exports of goods and services	34.7	35.3	36.5	34.4	32.5
Exports of goods	30.1	30.3	31.2	29.1	27.6
Nongold	23.9	24.2	25.6	24.4	23.7
Gold	6.2	6.1	5.6	4.7	3.9
Exports of services	4.6	5.0	5.3	5.3	4.9
Imports of goods and services	-33.4	-33.3	-34.9	-32.7	-28.8
Imports of goods	-27.4	-27.6	-28.9	-27.3	-23.6
Imports of services	-6.0	-5.7	-6.0	-5.5	-5.2
Balance on income	-2.9	-3.1	-3.2	-3.0	-3.0
Income receipts	1.1	1.1	1.3	1.3	1.1
Income payments	-4.0	-4.2	-4.5	-4.3	-4.1
Balance on transfers	-0.6	-0.7	-0.7	-0.7	-0.9
Capital flows (including unrecorded transactions)	4.6	0.7	4.6	1.4	2.9
Balance on capital and financial account	5.4	3.1	5.7	3.1	4.7
Balance on capital account	0.0	0.0	-0.2	-0.1	0.0
Balance on financial account	5.5	3.1	5.9	3.2	4.8
Direct investment	-1.3	-0.2	1.5	-1.2	-0.7
Liabilities	1.2	0.8	3.8	0.6	1.2
Assets	-2.5	-1.0	-2.4	-1.7	-1.9
Portfolio investment	2.5	2.2	6.6	3.7	10.2
Liabilities	2.9	4.2	11.2	9.1	14.6
Assets	-0.4	-2.0	-4.6	-5.4	-4.4
Other investment	4.2	1.1	-2.2	0.7	-4.7
Liabilities	4.7	1.7	-0.3	1.2	-2.9
Assets	-0.5	-0.6	-1.9	-0.5	-1.8
Unrecorded transactions	-0.8	-2.4	-1.1	-1.7	-1.8
Overall balance of payments	2.4	-1.2	2.4	-0.7	2.6
External position (end of period):					
Gross reserves (central government and Reserve Bank)	4.3	2.2	5.8	5.4	6.5 2/
Gross reserves (including the rest of the monetary sector)	5.0	3.5	7.3	7.2	9.0 2/
Net open position of Reserve Bank	-14.0	-22.2	-16.3	-22.5	-14.0 3/
Net foreign assets	-28.9	-27.7	-21.8	-14.6	-14.9 4/
Total foreign debt	35.3	34.5	39.2	38.8	...
	(In percent of GDP)				
Balance on current account	-1.5	-1.3	-1.5	-1.6	-0.2
Balance on goods and services	0.9	1.4	1.1	1.2	2.8
Exports of goods and services	23.0	24.5	24.6	25.7	25.0
Imports of goods and services	-22.1	-23.2	-23.5	-24.4	-22.2
Balance on income	-1.9	-2.2	-2.2	-2.3	-2.3
Income receipts	0.8	0.8	0.9	1.0	0.8
Income payments	-2.7	-2.9	-3.0	-3.2	-3.1
Balance on transfers	-0.4	-0.5	-0.5	-0.6	-0.7
Capital flows (including unrecorded transactions)	3.0	0.5	3.1	1.0	2.2
	(In percent of estimated U.S. dollar-denominated GDP)				
External position (end of period):					
Gross reserves (central government and Reserve Bank)	2.8	1.5	3.9	4.0	5.0
Gross reserves (including the rest of the monetary sector)	3.3	2.4	4.9	5.4	6.9
Net open position of Reserve Bank	-9.2	-15.4	-11.0	-16.8	-10.7
Net foreign assets	-19.1	-19.2	-14.7	-10.9	-11.4
Total foreign debt	23.4	24.0	26.4	29.0	...

Sources: South African Reserve Bank; and Fund staff estimates.

1/ Figures for 1999 represent data for first three quarters (seasonally adjusted for the current account), at annual rate.
2/ September 1999.
3/ November 1999.
4/ Fund staff estimate for 1999; estimated change equals to the current account balance.

Table 48. South Africa: Quarterly Balance of Payments, 1997-99

(In millions of Rand, not seasonally adjusted)

	1997				1997	1998				1998	1999		
	I	II	III	IV		I	II	III	IV		I	II	III
Balance on current account	-3,264	-2,093	-3,694	-1,375	-10,426	539	-1,035	-6,859	-4,275	-11,630	2,621	-1,638	-2,149
Balance on goods and services	1,096	1,813	1,390	3,400	7,699	5,750	3,691	-1,483	1,169	9,127	8,672	3,990	3,925
Exports of goods and services	37,135	40,389	45,033	45,860	168,417	45,550	45,695	50,951	47,891	190,087	49,821	47,412	51,355
Exports of goods	31,293	34,459	38,697	39,381	143,830	38,624	38,830	43,595	39,912	160,961	41,895	40,427	43,848
Nongold	24,581	28,281	32,198	32,952	118,012	32,256	33,070	36,860	32,868	135,054	35,710	34,481	38,133
Gold	6,712	6,178	6,499	6,429	25,818	6,368	5,760	6,735	7,044	25,907	6,185	5,946	5,715
Exports of services	5,842	5,930	6,336	6,479	24,587	6,926	6,865	7,356	7,979	29,126	7,926	6,985	7,507
Imports of goods and services	-36,039	-38,576	-43,643	-42,460	-160,718	-39,800	-42,004	-52,434	-46,722	-180,960	-41,149	-43,422	-47,430
Imports of goods	-29,765	-31,567	-36,330	-35,399	-133,061	-33,352	-34,221	-44,059	-39,119	-150,751	-33,699	-35,440	-39,028
Imports of services	-6,274	-7,009	-7,313	-7,061	-27,657	-6,448	-7,783	-8,375	-7,603	-30,209	-7,450	-7,982	-8,402
Balance on income	-3,443	-3,015	-4,364	-3,975	-14,797	-4,117	-3,730	-4,391	-4,443	-16,681	-5,011	-4,097	-4,512
Income receipts	1,049	1,531	1,194	2,237	6,011	1,423	2,219	1,885	1,728	7,255	1,539	1,763	1,619
Income payments	-4,492	-4,546	-5,558	-6,212	-20,808	-5,540	-5,949	-6,276	-6,171	-23,936	-6,550	-5,860	-6,131
Balance on transfers	-917	-891	-720	-800	-3,328	-1,094	-996	-985	-1,001	-4,076	-1,040	-1,531	-1,562
Capital flows (including unrecorded transactions)	5,665	13,314	2,044	265	21,288	7,499	708	-4,523	3,929	7,613	2,297	4,169	6,722
Balance on capital and financial account	7,845	15,710	2,082	520	26,157	12,170	9,772	-7,500	2,814	17,256	-403	10,782	11,224
Balance on capital account	-71	-62	-700	-59	-892	-57	-94	-84	-75	-310	-57	-61	-69
Balance on financial account	7,916	15,772	2,782	579	27,049	12,227	9,866	-7,416	2,889	17,566	-346	10,843	11,293
Direct investment	813	5,104	-1,325	2,164	6,756	-553	1,079	-6,155	-842	-6,471	-2,259	-568	-564
Liabilities	1,072	7,788	2,068	6,659	17,587	405	1,212	1,919	-432	3,104	2,046	1,584	1,658
Assets	-259	-2,684	-3,393	-4,495	-10,831	-958	-133	-8,074	-410	-9,575	-4,305	-2,152	-2,222
Portfolio investment	7,317	11,564	13,367	-1,668	30,580	19,359	11,211	-6,529	-3,666	20,375	5,117	16,738	24,922
Liabilities	10,409	21,176	17,342	2,636	51,563	26,497	22,517	-1,068	2,506	50,452	10,932	26,153	29,893
Assets	-3,092	-9,612	-3,975	-4,304	-20,983	-7,138	-11,306	-5,461	-6,172	-30,077	-5,815	-9,415	-4,971
Other investment	-214	-896	-9,260	83	-10,287	-6,579	-2,424	5,268	7,397	3,662	-3,204	-5,327	-13,065
Liabilities	3,374	1,740	-5,193	-1,251	-1,330	-1,446	-2,339	1,424	8,895	6,534	-1,138	-3,029	-9,177
Assets	-3,588	-2,636	-4,067	1,334	-8,957	-5,133	-85	3,844	-1,498	-2,872	-2,066	-2,298	-3,888
Unrecorded transactions	-2,180	-2,396	-38	-255	-4,869	-4,671	-9,064	2,977	1,115	-9,643	2,700	-6,613	-4,502
Overall balance of payments	2,401	11,221	-1,650	-1,110	10,862	8,038	-327	-11,382	-346	-4,017	4,918	2,531	4,573
Change in gross gold and other foreign reserves	3,336	10,319	2,484	3,069	19,208	7,803	10,803	-10,188	-1,741	6,677	5,688	-604	6,659
Owing to BOP transactions	2,401	11,221	-1,650	-1,110	10,862	8,038	-327	-11,382	-346	-4,017	4,918	2,531	4,573
Change in liabilities related to reserves	2,020	-1,167	3,560	3,676	8,089	-1,421	5,591	999	-640	4,529	-793	-1,325	1,481
SDR allocations and valuation adjustments	-1,085	265	574	503	257	1,186	5,539	195	-755	6,165	1,563	-1,810	605

Sources: South African Reserve Bank.

Table 49. South Africa: Quarterly Current Account Data, 1997-99

(In millions of Rand, seasonally adjusted)

	1997				1998				1999		
	I	II	III	IV	I	II	III	IV	I	II	III
Balance on current account	-2,984	-2,148	-2,540	-2,754	-805	-1,254	-4,958	-4,613	1,077	-895	-623
Balance on goods and services	942	1,869	2,400	2,488	4,019	3,699	406	1,004	7,118	4,764	5,251
Exports of goods and services	38,827	40,192	44,048	45,350	46,125	45,867	49,970	48,126	50,828	48,387	50,154
Exports of goods	33,172	33,927	37,708	39,023	39,397	38,594	42,626	40,344	43,135	40,995	42,656
Nongold	26,460	27,749	31,209	32,594	33,029	32,834	35,891	33,300	36,950	35,050	36,941
Gold	6,712	6,178	6,499	6,429	6,368	5,760	6,735	7,044	6,185	5,946	5,715
Exports of services	5,655	6,265	6,341	6,327	6,728	7,272	7,344	7,782	7,693	7,392	7,498
Trasportation	1,209	1,213	1,322	1,281	1,353	1,446	1,559	1,614	1,658	1,682	1,799
Travel	3,065	3,113	3,321	3,271	3,430	3,853	3,730	4,066	3,972	3,626	3,600
Other services	1,381	1,940	1,698	1,774	1,945	1,974	2,055	2,102	2,063	2,085	2,099
Imports of goods and services	-37,885	-38,323	-41,649	-42,862	-42,106	-42,168	-49,564	-47,122	-43,710	-43,624	-44,903
Imports of goods	-31,184	-31,367	-34,582	-35,929	-35,251	-34,418	-41,468	-39,614	-35,729	-35,703	-36,794
Imports of services	-6,701	-6,956	-7,067	-6,933	-6,855	-7,750	-8,096	-7,508	-7,981	-7,921	-8,109
Trasportation	-2,612	-2,844	-2,947	-3,032	-3,031	-3,150	-3,301	-2,880	-3,219	-3,181	-3,508
Travel	-2,337	-2,199	-2,303	-2,201	-1,928	-2,775	-2,845	-2,709	-2,810	-2,786	-2,593
Other services	-1,752	-1,913	-1,817	-1,701	-1,896	-1,825	-1,950	-1,919	-1,952	-1,954	-2,008
Balance on income	-3,215	-3,100	-4,150	-4,332	-3,957	-3,929	-4,303	-4,493	-4,990	-4,132	-4,316
Income receipts	1,337	1,422	1,453	1,800	1,640	1,979	2,027	1,609	1,681	1,652	1,855
Investment income	1,253	1,333	1,364	1,717	1,526	1,859	1,903	1,464	1,561	1,534	1,732
Direct investment	848	853	860	939	873	1,177	1,110	850	834	892	1,001
Non-direct investment	405	480	504	778	654	683	793	614	727	643	732
Compensation of Employees	84	89	89	83	114	120	124	145	120	118	123
Income payments	-4,552	-4,522	-5,603	-6,132	-5,597	-5,908	-6,329	-6,102	-6,670	-5,784	-6,171
Investment income	-3,983	-3,944	-5,043	-5,574	-5,028	-5,319	-5,761	-5,529	-6,118	-5,235	-5,638
Direct investment	-885	-763	-937	-1,160	-958	-1,082	-1,037	-1,006	-1,000	-969	-901
Non-direct investment	-3,097	-3,181	-4,106	-4,414	-4,071	-4,237	-4,724	-4,523	-5,118	-4,267	-4,737
Compensation of Employees	-569	-578	-560	-558	-569	-589	-568	-573	-552	-549	-533
Balance on transfers	-712	-917	-789	-910	-867	-1,024	-1,062	-1,124	-1,051	-1,526	-1,557
Receipts	149	75	250	167	67	86	99	83	167	70	77
Central Government	109	30	215	132	27	36	49	33	116	28	15
Other sectors	40	45	35	35	40	50	50	50	52	42	62
Payments	-861	-992	-1,039	-1,077	-934	-1,110	-1,160	-1,207	-1,218	-1,596	-1,635
Central Government	-825	-958	-1,000	-1,040	-904	-1,080	-1,125	-1,172	-1,173	-1,547	-1,563
Other sectors	-35	-34	-39	-37	-30	-30	-35	-35	-45	-49	-71

Sources: South African Reserve Bank.

Table 50. South Africa: Quarterly Current Account Data, 1997-99

(In percent of GDP, seasonally adjusted)

	1997				1998				1999		
	I	II	III	IV	I	II	III	IV	I	II	III
Balance on current account	-1.8	-1.3	-1.5	-1.6	-0.4	-0.7	-2.7	-2.4	0.6	-0.4	-0.3
Balance on goods and services	0.6	1.1	1.4	1.4	2.2	2.0	0.2	0.5	3.7	2.4	2.6
Exports of goods and services	23.7	23.5	25.5	25.7	25.7	24.7	26.9	25.4	26.2	24.3	25.0
Exports of goods	20.2	19.9	21.8	22.1	22.0	20.8	22.9	21.3	22.3	20.6	21.2
Nongold	16.1	16.2	18.1	18.5	18.4	17.7	19.3	17.6	19.1	17.6	18.4
Gold	4.1	3.6	3.8	3.6	3.5	3.1	3.6	3.7	3.2	3.0	2.8
Exports of services	3.4	3.7	3.7	3.6	3.7	3.9	4.0	4.1	4.0	3.7	3.7
Trasportation	0.7	0.7	0.8	0.7	0.8	0.8	0.8	0.9	0.9	0.8	0.9
Travel	1.9	1.8	1.9	1.9	1.9	2.1	2.0	2.1	2.0	1.8	1.8
Other services	0.8	1.1	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.0	1.0
Imports of goods and services	-23.1	-22.4	-24.1	-24.3	-23.5	-22.7	-26.7	-24.9	-22.5	-21.9	-22.4
Imports of goods	-19.0	-18.4	-20.0	-20.4	-19.6	-18.5	-22.3	-20.9	-18.4	-17.9	-18.3
Imports of services	-4.1	-4.1	-4.1	-3.9	-3.8	-4.2	-4.4	-4.0	-4.1	-4.0	-4.0
Trasportation	-1.6	-1.7	-1.7	-1.7	-1.7	-1.7	-1.8	-1.5	-1.7	-1.6	-1.7
Travel	-1.4	-1.3	-1.3	-1.2	-1.1	-1.5	-1.5	-1.4	-1.4	-1.4	-1.3
Other services	-1.1	-1.1	-1.1	-1.0	-1.1	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Balance on income	-2.0	-1.8	-2.4	-2.5	-2.2	-2.1	-2.3	-2.4	-2.6	-2.1	-2.1
Income receipts	0.8	0.8	0.8	1.0	0.9	1.1	1.1	0.8	0.9	0.8	0.9
Investment income	0.8	0.8	0.8	1.0	0.9	1.0	1.0	0.8	0.8	0.8	0.9
Direct investment	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.4	0.4	0.4	0.5
Non-direct investment	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.4	0.3	0.4
Compensation of Employees	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Income payments	-2.8	-2.6	-3.2	-3.5	-3.1	-3.2	-3.4	-3.2	-3.4	-2.9	-3.1
Investment income	-2.4	-2.3	-2.9	-3.2	-2.8	-2.9	-3.1	-2.9	-3.2	-2.6	-2.8
Direct investment	-0.5	-0.4	-0.5	-0.7	-0.5	-0.6	-0.6	-0.5	-0.5	-0.5	-0.4
Non-direct investment	-1.9	-1.9	-2.4	-2.5	-2.3	-2.3	-2.5	-2.4	-2.6	-2.1	-2.4
Compensation of Employees	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
Balance on transfers	-0.4	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6	-0.5	-0.8	-0.8
Receipts	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0
Payments	-0.5	-0.6	-0.6	-0.6	-0.5	-0.6	-0.6	-0.6	-0.6	-0.8	-0.8
Memorandum item:											
Balance on current account											
(in millions of US dollars, seasonally adjusted)	-661.5	-480.6	-546.9	-572.9	-162.6	-242.4	-798.4	-798.2	177.0	-146.0	-102.1

Sources: South African Reserve Bank.

Table 51. South Africa: Volume and Unit Value of Exports and Imports, 1997-99

	1997				1997	1998				1998	1999			1999
	I	II	III	IV	average	I	II	III	IV	average	I	II	III	average Q1-Q3
						(Index 1995=100, seasonally adjusted)								
Exports (goods and services)														
Excluding gold														
Volume	109.4	114.0	123.8	126.9		127.5	125.3	121.4	120.1		126.4	120.2	125.0	
Price	113.7	115.5	117.4	118.7		120.7	123.9	137.9	132.4		136.8	136.7	137.6	
Including gold														
Volume	108.1	110.8	120.1	122.1		121.3	118.5	116.1	115.7		118.7	113.1	118.0	
Price	114.1	115.3	116.5	118.0		120.8	123.0	136.7	132.2		136.0	135.9	135.0	
Imports (goods and services)														
Volume	109.4	110.7	118.5	119.6		115.4	113.2	119.7	119.5		106.7	106.6	105.7	
Price	114.4	114.3	116.1	118.4		120.5	123.1	136.8	130.3		135.4	135.2	140.3	
Terms of Trade														
Excluding gold	99.4	101.0	101.2	100.3		100.2	100.6	100.8	101.6		101.0	101.1	98.1	
Including gold	99.8	100.9	100.4	99.7		100.3	99.9	100.0	101.5		100.5	100.5	96.2	
						(Percentage change from previous quarter)								
Exports (goods and services)														
Excluding gold														
Volume	-6.6	4.2	8.6	2.5		0.5	-1.7	-3.1	-1.1		5.2	-4.9	4.0	
Price	0.9	1.6	1.6	1.1		1.7	2.7	11.3	-4.0		3.3	-0.1	0.7	
Including gold														
Volume	-3.6	2.5	8.4	1.7		-0.7	-2.3	-2.0	-0.3		2.6	-4.7	4.3	
Price	-1.0	1.1	1.0	1.3		2.4	1.8	11.1	-3.3		2.9	-0.1	-0.7	
Imports (goods and services)														
Volume	0.5	1.2	7.0	0.9		-3.5	-1.9	5.7	-0.2		-10.7	-0.1	-0.8	
Price	-1.1	-0.1	1.6	2.0		1.8	2.2	11.1	-4.8		3.9	-0.1	3.8	
Terms of Trade														
Excluding gold	1.9	1.6	0.2	-0.9		-0.1	0.4	0.2	0.8		-0.6	0.1	-3.0	
Including gold	0.1	1.1	-0.5	-0.7		0.6	-0.4	0.1	1.5		-1.0	0.0	-4.3	
						(Percentage change from previous year)								
Exports (goods and services)														
Excluding gold														
Volume	2.1	8.1	3.5	8.4	5.5	16.5	9.9	-1.9	-5.4	4.8	-0.9	-4.1	3.0	-0.7
Price	11.1	7.3	7.5	5.3	7.8	6.2	7.3	17.5	11.5	10.6	13.3	10.3	-0.2	7.8
Including gold														
Volume	1.9	7.8	3.5	8.9	5.5	12.2	6.9	-3.3	-5.2	2.6	-2.1	-4.6	1.6	-1.7
Price	10.2	4.6	3.9	2.3	5.3	5.9	6.7	17.3	12.0	10.5	12.6	10.5	-1.2	7.3
Imports (goods and services)														
Volume	4.8	2.7	4.2	9.8	5.4	5.5	2.3	1.0	-0.1	2.2	-7.5	-5.8	-11.7	-8.4
Price	12.4	7.1	4.7	2.3	6.6	5.3	7.7	17.8	10.1	10.2	12.4	9.8	2.6	8.3
Terms of Trade														
Excluding gold	-1.1	0.1	2.8	2.9	1.2	0.8	-0.4	-0.4	1.3	0.3	0.8	0.5	-2.7	-0.5
Including gold	-1.9	-2.3	-0.6	0.0	-1.2	0.5	-1.0	-0.4	1.8	0.2	0.2	0.6	-3.8	-1.0

Sources: South African Reserve Bank.

Table 52. South Africa: Foreign Assets, 1994-98

	1994	1995	1996	1997	1998
	(In billions of U.S. dollars)				
Total foreign assets	27.6	33.9	35.1	47.9	56.8
Direct investment	19.1	23.3	24.3	27.5	29.0
Public corporations	0.0	0.0	0.0	0.0	0.0
Equity capital	0.0	0.0	0.0	0.0	0.0
Other capital	0.0	0.0	0.0	0.0	0.0
Banking Sector	0.2	0.2	0.4	0.5	1.1
Equity capital	0.2	0.2	0.4	0.5	1.1
Private non-banking sector	18.9	23.1	24.0	27.0	27.9
Equity capital	16.8	20.9	22.5	25.9	27.3
Other long-term capital	1.6	1.5	0.9	0.5	0.2
Other short-term capital	0.4	0.7	0.5	0.6	0.4
Real Estate	0.0	0.0	0.0	0.0	0.0
Portfolio investment	0.1	0.7	2.6	7.8	16.0
Monetary authorities	0.0	0.0	0.0	0.0	0.0
Debt securities	0.0	0.0	0.0	0.0	0.0
Public authorities	0.0	0.0	0.0	0.0	0.0
Debt securities	0.0	0.0	0.0	0.0	0.0
Public corporations	0.0	0.0	0.0	0.0	0.0
Equity securities	0.0	0.0	0.0	0.0	0.0
Debt securities	0.0	0.0	0.0	0.0	0.0
Banking sector	0.0	0.2	0.1	0.0	0.0
Equity securities	0.0	0.1	0.1	0.0	0.0
Debt securities	0.0	0.0	0.0	0.0	0.0
Private non-banking sector	0.1	0.5	2.5	7.8	16.0
Equity securities	0.0	0.4	2.1	6.6	13.6
Debt securities	0.0	0.1	0.4	1.2	2.4
Other investments	8.3	9.9	8.1	12.6	11.8
Monetary authorities	5.5	7.0	4.6	7.7	7.0
International Monetary Fund	2.0	2.3	2.1	1.8	1.6
Long-term loans	0.4	0.3	0.2	0.0	0.0
Short-term loans	0.0	0.0	0.0	0.0	0.0
Foreign exchange reserves	1.7	2.8	0.9	4.8	4.4
Gold reserves	1.4	1.5	1.3	1.0	1.0
Public authorities	0.0	0.0	0.0	0.0	0.0
Long-term loans	0.0	0.0	0.0	0.0	0.0
Short-term loans	0.0	0.0	0.0	0.0	0.0
Public corporations	0.2	0.2	0.2	0.2	0.2
Long-term loans	0.0	0.0	0.0	0.0	0.0
Short-term loans	0.2	0.2	0.2	0.2	0.2
Banking sector	1.0	0.7	1.4	1.7	2.1
Long-term loans	0.0	0.0	0.0	0.0	0.0
Short-term loans	0.4	0.1	0.1	0.2	0.4
Deposits	0.6	0.5	1.3	1.4	1.7
Gold reserves	0.0	0.0	0.0	0.0	0.0
Private non-banking sector	1.6	2.1	1.9	3.0	2.5
Long-term loans	0.2	0.2	0.2	0.1	0.2
Short-term loans and trade finance	1.4	1.8	1.8	2.9	2.3
	(In percent of U.S. dollar-denominated GDP)				
Total foreign assets	20.3	22.4	24.4	32.3	42.4
Direct investment	14.1	15.4	16.9	18.5	21.7
Portfolio investment	0.1	0.4	1.8	5.3	12.0
Other investments	6.1	6.6	5.6	8.5	8.8

Sources: South African Reserve Bank.

Table 53. South Africa: Foreign Liabilities, 1994-98

	1994	1995	1996	1997	1998
	(In billions of U.S. dollars)				
Total foreign liabilities	52.2	62.6	60.4	68.5	70.6
Direct investment	12.6	15.0	13.2	16.7	15.7
Public corporations	0.0	0.0	0.0	0.9	0.8
Equity capital	0.0	0.0	0.0	0.9	0.8
Other capital	0.0	0.0	0.0	0.0	0.0
Banking Sector	0.1	0.2	0.2	0.3	0.4
Equity capital	0.1	0.2	0.2	0.3	0.4
Private non-banking sector	12.1	14.3	12.6	15.1	14.1
Equity capital	9.4	11.1	10.0	12.0	11.2
Other long-term capital	1.5	1.7	1.4	1.5	1.8
Other short-term capital	1.3	1.5	1.3	1.6	1.1
Real Estate	0.4	0.5	0.4	0.4	0.4
Portfolio investment	19.0	23.5	23.8	28.2	31.7
Monetary authorities	0.0	0.0	0.0	0.0	0.0
Debt securities	0.0	0.0	0.0	0.0	0.0
Public authorities	3.6	4.3	5.3	9.3	8.9
Debt securities	3.6	4.3	5.3	9.3	8.9
Public corporations	4.4	5.7	4.3	4.4	4.2
Equity securities	0.0	0.0	0.0	0.0	0.0
Debt securities	4.4	5.7	4.3	4.4	4.2
Banking sector	1.6	0.9	1.0	2.1	2.3
Equity securities	0.4	0.6	0.6	1.3	1.7
Debt securities	1.2	0.4	0.4	0.7	0.7
Private non-banking sector	9.4	12.5	13.3	12.5	16.3
Equity securities	8.8	11.9	12.8	11.8	15.2
Debt securities	0.5	0.6	0.5	0.6	1.0
Other investments	20.6	24.1	23.4	23.6	23.2
Monetary authorities	5.0	3.5	3.1	4.4	4.8
International Monetary Fund	3.4	3.3	3.0	2.2	1.6
Long-term loans	0.0	0.0	0.0	0.0	0.0
Short-term loans	1.4	0.0	0.0	2.0	3.1
Deposits	0.2	0.2	0.1	0.1	0.1
Public authorities	0.6	0.7	1.1	1.0	1.0
Long-term loans	0.6	0.7	1.1	1.0	1.0
Short-term loans	0.0	0.0	0.0	0.0	0.0
Public corporations	4.8	5.6	5.1	4.4	3.7
Long-term loans	4.4	5.2	4.9	4.3	3.7
Short-term loans	0.3	0.4	0.2	0.1	0.0
Banking sector	5.9	9.0	9.3	8.9	9.2
Long-term loans	1.4	1.1	0.7	0.4	0.2
Short-term loans	3.6	5.3	6.3	4.6	3.4
Deposits	0.9	2.6	2.4	3.8	5.6
Private non-banking sector	4.2	5.3	4.8	5.0	4.6
Long-term loans	1.7	2.1	1.8	1.8	2.2
Short-term loans and trade finance	2.5	3.2	3.0	3.2	2.5
	(In percent of U.S. dollar-denominated GDP)				
Total foreign assets	38.4	41.4	42.0	46.2	52.7
Direct investment	9.3	9.9	9.2	11.3	11.7
Portfolio investment	14.0	15.5	16.6	19.0	23.7
Other investments	15.2	16.0	16.3	15.9	17.3

Sources: South African Reserve Bank.

Table 54. South Africa: Foreign Debt and Reserves, 1994-99

	1994	1995	1996	1997	1998	1999
	(In billions of U.S. dollars)					
Total foreign debt	29.7	35.3	34.5	39.2	38.8	
Total foreign-currency denominated debt 1/	21.7	25.4	26.1	25.2	24.7	25.1 2/
Bearer bonds and notes	2.7	3.7	4.0	4.0	4.4	5.2 2/
Long-term loans	3.8	2.9	2.2	1.3	0.8	0.6 2/
Public sector	4.1	5.5	6.0	5.4	4.5	4.0 2/
Monetary sector	5.0	5.7	6.8	7.7	8.9	8.8 2/
Non-monetary private sector	6.1	7.6	7.0	6.8	6.1	6.5 2/
Rand-denominated debt	8.0	10.0	8.5	14.0	14.1	
Bonds	5.3	7.3	6.3	10.4	9.2	
Other	2.7	2.6	2.2	3.6	4.9	
Gross reserves (including the monetary sector)	4.1	5.0	3.5	7.3	7.2	9.0 3/
Central government and Reserve Bank	3.1	4.3	2.2	5.8	5.4	6.5 3/
Central government	0.0	0.0	0.0	0.0	0.0	0.0 3/
Reserve Bank	3.1	4.3	2.2	5.8	5.4	6.5 3/
Gold	1.4	1.5	1.3	1.0	1.0	1.1 3/
SDRs	0.0	0.0	0.0	0.0	0.2	0.3 3/
Foreign exchange	1.7	2.8	0.9	4.8	4.2	5.2 3/
Rest of the monetary sector	1.0	0.7	1.3	1.4	1.8	2.4 3/
Memorandum item:						
Net open position of the Reserve Bank	-25.2	-14.0	-22.2	-16.3	-22.5	-14.0 4/
	(In percent of estimated U.S. dollar-denominated GDP)					
Total foreign debt	21.8	23.4	24.0	26.4	29.0	
Total foreign-currency denominated debt	16.0	16.8	18.1	17.0	18.4	19.8
Rand-denominated debt	5.9	6.6	5.9	9.4	10.6	
Gross reserves (including the monetary sector)	3.0	3.3	2.4	4.9	5.4	6.9
Central government and Reserve Bank	2.3	2.8	1.5	3.9	4.0	5.0
Rest of the monetary sector	0.7	0.4	0.9	1.0	1.3	1.9
Memorandum item:						
Net open position of the Reserve Bank	-18.6	-9.2	-15.4	-11.0	-16.8	-10.7

Sources: South African Reserve Bank; and Fund staff estimates.

1/ As of end-1998, short-term foreign-currency denominated debt (less than 1 year by remaining maturity) was 57 percent of total.
2/ June 1999.
3/ September 1999.
4/ November 1999.

Table 55. South Africa: Exchange Rates and Gold Price Developments, 1994-99

	1997				1997	1998				1998	1999			1999
	I	II	III	IV		I	II	III	IV		I	II	III	Q1-Q3
Rand / U.S. dollar														
Period average	4.5109	4.4701	4.6442	4.8066	4.6080	4.9503	5.1737	6.2101	5.7791	5.5283	6.0854	6.1287	6.0979	6.1040
End of period (daily)	4.4225	5.5305	4.6615	4.8675	4.8675	5.0345	5.8665	5.8725	5.8600	5.8600	6.1895	6.0355	6.0065	6.0065
Nominal effective exchange rate (INS index)														
Period average	70.59	72.18	71.21	68.45	70.61	68.12	65.49	54.45	55.46	60.88	54.10	55.68	55.75	55.18
End of period (monthly)	72.90	71.46	70.55	68.39	68.39	67.86	63.42	54.00	54.37	54.37	54.23	56.68	55.57	55.57
Real effective exchange rate (INS index)														
Period average	95.85	99.37	98.69	95.31	97.30	95.84	93.25	80.36	83.34	88.20	81.86	84.40	84.39	83.55
End of period (monthly)	99.55	98.57	97.95	95.44	95.44	95.98	90.60	80.84	81.85	81.85	82.11	86.20	84.11	84.11
London gold price (per ounce, period average)														
In U.S. dollars	351.20	343.04	323.54	306.67	331.11	294.24	300.05	288.46	293.81	294.14	286.90	273.61	259.15	273.22
In Rand	1584.57	1533.44	1502.64	1473.27	1523.48	1456.62	1550.81	1789.61	1694.64	1622.92	1746.62	1674.21	1577.47	1666.10
						(Percentage change from same period in previous year)								
Rand / U.S. dollar														
Period average	19.6	3.6	3.8	3.6	7.2	9.7	15.7	33.7	20.2	20.0	22.9	18.5	-1.8	12.1
End of period (daily)	11.1	27.6	2.9	4.0	4.0	13.8	6.1	26.0	20.4	20.4	22.9	2.9	2.3	2.3
Nominal effective exchange rate (INS index)														
Period average	-10.6	3.1	6.3	5.1	0.5	-3.5	-9.3	-23.5	-19.0	-13.8	-20.6	-15.0	2.4	-12.0
End of period (monthly)	-3.9	2.8	5.7	5.4	5.4	-6.9	-11.2	-23.5	-20.5	-20.5	-20.1	-10.6	2.9	2.9
Real effective exchange rate (INS index)														
Period average	-4.0	10.6	13.1	9.9	7.0	0.0	-6.2	-18.6	-12.6	-9.4	-14.6	-9.5	5.0	-7.0
End of period (monthly)	3.3	9.6	11.8	9.6	9.6	-3.6	-8.1	-17.5	-14.2	-14.2	-14.5	-4.9	4.0	4.0
London gold price (per ounce, period average)														
In U.S. dollars	-12.2	-12.1	-15.9	-18.4	-14.6	-16.2	-12.5	-10.8	-4.2	-11.2	-2.5	-8.8	-10.2	-7.1
In Rand	5.0	-8.9	-12.7	-15.5	-8.4	-8.1	1.1	19.1	15.0	6.5	19.9	8.0	-11.9	4.2

Sources: South African Reserve Bank; and Fund staff estimates.