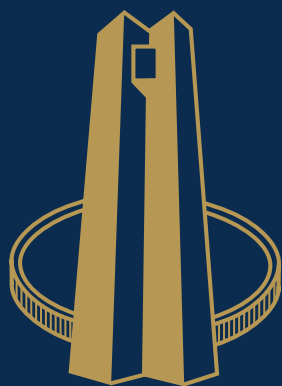


# Quarterly Bulletin Kwartaalblad

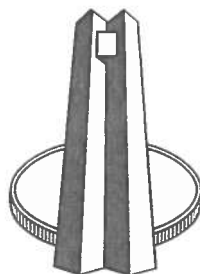


South African Reserve Bank  
Suid-Afrikaanse Reserwebank

# **Quarterly Bulletin Kwartaalblad**

**September 1998**

No. 209



**South African Reserve Bank  
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# Quarterly Economic Review

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## CONTENTS

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### *Introduction*

### *Domestic economic developments*

*Domestic output*

*Domestic expenditure*

*Factor income and saving*

*Employment*

*Labour costs and productivity*

*Inflation*

### *Foreign trade and payments*

*Current account*

*Capital account*

*Foreign debt*

*Foreign reserves*

*Exchange rates*

### *Monetary developments, interest rates and financial markets*

*Money supply*

*Credit extension*

*Interest rates and yields*

*Money market*

*Bond market*

*Share market*

*Market for derivatives*

*Real-estate market*

### *Public finance*

*Public-sector borrowing requirement*

*Exchequer account*

### *List of tables*

### *List of graphs*

## ***List of tables***

<b><i>Table 1</i></b>	Real gross domestic product
<b><i>Table 2</i></b>	Real gross domestic expenditure
<b><i>Table 3</i></b>	Real gross domestic fixed investment
<b><i>Table 4</i></b>	Labour costs and productivity in the non-agricultural sectors
<b><i>Table 5</i></b>	Production price indices
<b><i>Table 6</i></b>	Inflation
<b><i>Table 7</i></b>	Balance of payments on current account
<b><i>Table 8</i></b>	Net capital movements not related to reserves
<b><i>Table 9</i></b>	Foreign debt of South Africa
<b><i>Table 10</i></b>	Exchange rates of the rand
<b><i>Table 11</i></b>	Changes over one month in deposit holdings of the private sector
<b><i>Table 12</i></b>	Growth in monetary aggregates over twelve months
<b><i>Table 13</i></b>	Interest rates and yields
<b><i>Table 14</i></b>	Bond and share market activity
<b><i>Table 15</i></b>	Non-resident transactions in the bond and share markets
<b><i>Table 16</i></b>	Yields and price ratios
<b><i>Table 17</i></b>	Percentage increase in Exchequer receipts in fiscal 1998/99
<b><i>Table 18</i></b>	Financing the Exchequer deficit

## **List of graphs**

- Graph 1** Growth in real gross domestic product
- Graph 2** Components of real gross domestic expenditure
- Graph 3** Gross domestic fixed investment as percentage of gross domestic product
- Graph 4** Industrial and commercial inventories as percentage of non-agricultural gross domestic product
- Graph 5** Labour remuneration as percentage of gross domestic product
- Graph 6** Gross domestic investment and saving as percentage of gross domestic product
- Graph 7** Non-agricultural employment
- Graph 8** Nominal remuneration per worker
- Graph 9** Non-agricultural labour productivity, remuneration and unit labour costs
- Graph 10** Production prices
- Graph 11** Consumer prices
- Graph 12** Underlying inflation
- Graph 13** Current account
- Graph 14** Commodity prices in US dollars
- Graph 15** Real merchandise imports and exports
- Graph 16** Interest and dividend payments as percentage of total payments for services to non-residents
- Graph 17** Net capital movements (not related to reserves)
- Graph 18** Gold and other foreign reserves
- Graph 19** Exchange rates of the rand
- Graph 20** Exchange rates of the rand against emerging-market currencies
- Graph 21** M3 money supply
- Graph 22** Monetary aggregates
- Graph 23** Credit extension by monetary institutions
- Graph 24** Credit extended to private sector by type of credit
- Graph 25** Yield on long-term government bonds
- Graph 26** Comparison of bond yields in 1996 and 1998
- Graph 27** Yield curves
- Graph 28** Interest rates
- Graph 29** Total liquidity provided by Reserve Bank
- Graph 30** Turnover in the secondary bond market
- Graph 31** Value of shares traded on the stock exchange
- Graph 32** Prices of all classes of shares
- Graph 33** Value of real-estate transactions
- Graph 34** Public-sector borrowing requirement as a ratio of gross domestic product
- Graph 35** Budgeted and actual Exchequer issues to government departments
- Graph 36** Budgeted and actual Exchequer receipts
- Graph 37** Budgeted and actual customs and excise duties
- Graph 38** Budgeted and actual Exchequer deficit
- Graph 39** Total government debt as a ratio of gross domestic product

# Quarterly Economic Review

## Introduction

Economic events in the second quarter of 1998 were overshadowed by the turmoil in the foreign-exchange market and by the impact this has had on the real sectors of the economy. In a manner resembling developments in February 1996, the rand unexpectedly came under downward pressure from the middle of May 1998. Paradoxically, both these episodes were preceded by a period during which there were clear indications that the underlying financial situation was inherently sound and even strengthening. These indications were evident from

- the shrinking of the deficit on the Budget of the national government;
- falling inflation;
- declining yields on long-term public-sector bonds;
- significant increases in non-residents' holdings of domestic equities and bonds;
- a steady accumulation of international reserves by the Reserve Bank; and
- widely held expectations of forthcoming declines in the official lending rates of the Reserve Bank.

In February 1996 and in the second quarter of 1998 there were also other forces at work which were perceived to be potentially destabilising and which made the economy vulnerable to exogenous and endogenous shocks. These forces included:

- considerably faster growth in money and credit extension than growth in real and nominal aggregate income;
- a decline in the aggregate domestic savings ratio; and
- concerns that the financing of the current-account deficit had become excessively reliant on inflows of portfolio capital, which were seen as naturally fickle.

From February 1996 and in the second quarter of 1998 financial market participants started to attach less significance to the positive than to the negative aspects of the South African economy and began to realise profits by selling in a highly buoyant bond market. During both episodes, occurrences external to or independent of the domestic economy triggered this change in the attitude of non-resident investors: in February 1996 it was the alleged ill-health of the President and the potential threat to political stability and in the second quarter of 1998 it was the financial problems experienced in a number of emerging-market economies in Southeast Asia and in the Russian Federation.

The unexpected contraction of the net inflow of portfolio investment in the second quarter of 1998,

much akin to events in early 1996, led to an increase in the demand for foreign exchange, thereby putting downward pressure on the exchange rate of the rand. As the Reserve Bank made foreign exchange available to meet the excess demand for foreign currency, the daily liquidity requirement of the private banks in the domestic money market increased, generally causing a sharp rise in money market interest rates and in the lending rates of the private banks. This tightening of monetary conditions eventually succeeded in halting the fall in the external value of the rand, but at the cost of a substantially higher level of interest rates. As was the case in 1996 when high interest rates curbed growth in domestic spending, it is reasonable to expect that aggregate output and expenditure are likely to grow more slowly in 1998 than would have been the case had there been no currency crisis.

The turn of events in the second quarter of 1998 also showed once again that although macroeconomic and financial policies may be inherently sound, a country is not immune to either a deterioration in investors' confidence or to large changes in the movements of international capital. These experiences have also demonstrated that changes in the monetary policy stance should not be seen as the only defence mechanism against the whims of foreign investors. In 1996 the announcement of the macroeconomic strategy for Growth, Employment and Redistribution (GEAR) made a major contribution towards stabilising the rand. In 1998, the implementation of the outstanding reform measures might help to make the economy more resilient to external shocks and attract sustained inflows of foreign direct investment capital.

Even prior to the outbreak of the currency crisis, economic growth had tended to be weak. This trend continued in the second quarter of 1998 when the seasonally adjusted real gross domestic product recorded an annualised growth rate of about ½ per cent for the fourth quarter in succession. There was growth only in the tertiary and agricultural sectors of the economy; the combined real value added by the mining and secondary sectors declined from the first to the second quarter of 1998. Year-on-year growth in real gross domestic product was also just ½ per cent in the first half of 1998, signalling that growth for the calendar year as a whole will be less than had been expected at the beginning of the year.

Growth in real gross domestic expenditure, which has been erratic since the second half of 1995, changed direction once again in the second quarter of 1998 when an increase followed the decline in the first quarter. This was mainly due to an increase in fixed investment spending, particularly by Telkom which is

using the capital injection from privatisation proceeds to expand the telecommunications network. Real consumption, by both private households and general government, increased at lower rates in the second quarter of 1998 than in the first, and the paring down of inventory levels continued.

Although the growth in real capital expenditure accelerated in the second quarter of 1998, the ratio of fixed investment to gross domestic product is still below the levels indicated by GEAR. At its current level, the fixed investment ratio in the South African economy is too low to sustain high rates of economic growth and employment creation. Higher rates of return on invested capital are probably required to improve the rate of capital formation and to move the economy onto a higher growth path.

The low savings ratio in South Africa is a perennial concern. Despite a small improvement in the second quarter of 1998, domestic saving, at its current level, is still inadequate to finance the investment required for sustained high economic growth. Given the unpredictability of international capital movements it is risky to rely on foreign portfolio capital inflows to compensate for the paucity of domestic saving. In view of the need for higher new fixed-capital formation, current expenditure by private households and general government must be contained in the interest of a better national savings effort.

Employment in the non-agricultural sectors of the economy continued to decline in 1997 and the first quarter of 1998, with the public and the private sectors both shedding jobs. Nonetheless, growth in nominal remuneration per worker in the non-agricultural sectors of the economy accelerated in the first quarter of 1998, after it had shown signs of moderating in the course of 1997. This quickening in the growth of labour costs, along with the recent depreciation of the rand and the increase in mortgage rates, is likely to end the decline in price inflation which has been recorded over the past year or so. Inflation will probably rise further in the second half of the year, despite the weak state of the economy. The extent to which this is likely to happen will be decided mostly by the success or failure of steps taken to contain increases in the cost of production in the domestic economy.

The problems of employment creation and rising unemployment will be discussed at the Presidential Jobs Summit on 30 October 1998. The objective of the Summit is to get government, the business sector and the trade unions together to seek solutions for the problem of unemployment and to discuss methods to increase the labour absorption capacity of the South African economy. To facilitate the discussions at the Summit, government has released an Employment Strategy Framework which proposes, among other things, relaxing the rigidities in the labour market that hinder employment creation, and taking additional measures to improve the employability of the population.

The steady growth of real gross final demand, the further reduction in inventories and the depreciation of the rand helped to arrest the widening of the deficit on the current account of the balance of payments that became apparent in the second half of 1997. Weak demand for imports and solid increases in the nominal value of merchandise exports then reduced the deficit on the external current account to a level which was equivalent to less than one per cent of gross domestic product in the second quarter of 1998.

The country experienced a strong inflow of capital, mostly portfolio capital, in the first quarter of 1998, causing international reserves to rise firmly. Although a general re-rating of exchange rate risk associated with emerging markets left its mark on South Africa in May and June 1998, the net capital inflow was still sufficient to keep the overall balance of payments in surplus in the second quarter. There was also an increase in the use of foreign credit lines by the Reserve Bank which resulted in a further strengthening of the country's gross international reserves to a level which, at the end of June 1998, was equivalent to approximately four months' worth of imports of goods and services.

The rand came under downward pressure in May and June 1998 amid general nervousness about prospects for emerging-market economies. The exchange rate declined sharply, aggravated by the activities of international currency speculators. This depreciation of the rand was not without potential benefits as South African producers in the third quarter of 1998 were potentially far more competitive in certain export markets than at the beginning of the year. Rates of return on capital invested in export industries should therefore improve, provided that domestic cost pressures can be contained, thus consolidating the competitive advantages. This could generate more investment in export industries, faster growth in real gross domestic product and possibly also improve the labour absorption capacity of the economy.

Although the growth from quarter to quarter in M3 slowed down in the first two quarters of 1998, the M3 guideline range continued to be substantially overshot. By contrast, growth in domestic credit extension, which had also slowed down in the first quarter, accelerated vigorously in the second quarter. Credit extension to the private sector, the main force behind this acceleration in credit growth in the second quarter, was concentrated mainly in the corporate sector. The component of private-sector credit that continued to grow apace was "other loans and advances", including overdrafts.

Stronger increases in the narrower monetary aggregates than in the broad M3 money supply indicated a rise in the private sector's preference for more liquid depository-type investments. This rise in liquidity preference was, in turn, inspired by high short-term interest rates and the many speculative opportunities presented by the high variability of

financial-asset prices. Conceivably, the strong growth in credit demand by private-sector organisations could have been motivated by exactly the same considerations that called forth the strong demand for call and other short-term bank deposits.

Unlike the situation during the currency crisis of 1996 when money market interest rates took more than three months to react meaningfully to the rise in bond yields, the new repurchase-based auction system presented a greater degree of flexibility for short-term rates to respond quickly to a change in the underlying liquidity conditions. The gradual easing of monetary conditions from the end of 1997 was reversed soon afterwards, when bond yields started to rise from the second half of April 1998 and non-resident investors turned into net sellers of bonds.

The repurchase rate responded quickly to the tightening of monetary conditions and was just over 700 basis points higher towards the end of August 1998 than at its nadir in May. The sharp rise in money market interest rates was reflected in the average cost of funding of the private banks whose prime overdraft rates rose by 725 basis points from June to the end of August 1998.

Bond yields drifted lower in the first four months of 1998 amid growing expectations of a further easing of monetary conditions as inflation continued to fall and the domestic economy remained weak. During this period, non-resident investors were aggressive buyers in the domestic bond market. With the onset of the emerging-market crisis and with non-resident investors mostly selling bonds on a net basis, yields started moving upwards. By August 1998, yields on long-term government bonds were hovering at levels that were considerably higher than in December 1996, completely reversing a sixteen-month long decline in bond yields.

Equity prices which rebounded strongly in the first four months of 1998, after these prices had been declining in the second half of 1997, fell sharply from May onwards, coinciding with the general increase in interest rates. In August 1998, the average price level of all classes of shares was about 1 per cent lower than in December 1997, but the dollar value had declined by 23 per cent as a result of the depreciation of the rand. Nevertheless, there was no evidence of large-scale sales of equities by non-resident investors – in fact, they continued to be net purchasers of listed shares throughout the first eight months of 1998.

Government continued to place high priority on fiscal rectitude and the overall public-sector borrowing requirement was reduced significantly in the quarter from April to June 1998, compared with the corresponding period of the previous year. Good progress was also made in containing the deficit on the Budget of the national government relative to gross domestic product at a level similar to that attained a year earlier. Of particular significance was the sound

improvement in the finances of the provincial governments in the early months of the current fiscal year and an improvement in the efficiency of collecting revenue from income tax and value-added tax. Government remains firmly committed to the budget deficit targets set out in GEAR and to limiting tax revenues to a maximum of 25 per cent of gross domestic product.



## Domestic economic developments

### Domestic output

Economic growth remained weak in the second quarter of 1998. The real gross domestic product increased for the fourth consecutive quarter at a seasonally adjusted and annualised rate of  $\frac{1}{2}$  per cent. When the level of real gross domestic product in the first half of 1998 is compared with that in the first half of 1997, year-on-year economic growth also amounted to about  $\frac{1}{2}$  per cent. Output in the remainder of 1998 will have to strengthen appreciably if growth for the calendar year as a whole is to match that for 1997. In 1997 the growth in gross domestic product slowed down to  $1\frac{1}{2}$  per cent from 3 per cent in the previous year.

As in the first quarter of 1998, the subdued output conditions were felt most intensely in the mining and manufacturing sectors. By contrast, output in the agricultural sector still expanded in the second quarter of 1998, but at a slower pace than in the first quarter. Output in the tertiary or services sectors continued to grow at a steady but modest rate in the second quarter of 1998.

The growth in real value added by the *agricultural sector* slowed down from an annualised rate of 5 per cent in the first quarter of 1998 to  $1\frac{1}{2}$  per cent in the second quarter. This slowdown in output growth mainly reflected a decline in the gross income of field crop farmers, which was only partly countered by the rising income levels of livestock farmers.

Total output in the *mining sector*, which had risen at successive quarter-to-quarter annualised rates of 7 per cent, 5 per cent and  $1\frac{1}{2}$  per cent from the second quarter of 1997, decreased by  $4\frac{1}{2}$  per cent in the first quarter of 1998 and  $\frac{1}{2}$  per cent in the second quarter. The decline in the second quarter of 1998 was essentially

limited to the platinum-mining sector, mainly because of weaker demand from Asian economies. Output in the other segments of the mining industry increased during the second quarter: production levels at diamond and coal mines were raised after sharp declines in real value added had been recorded in the first quarter. Gold production also increased in the second quarter of 1998, despite the continuation of cost-saving programmes which usually tend to curb output in the short run.

Output in the *manufacturing sector*, which fell in the third and fourth quarters of 1997, declined further at annualised rates of 1 per cent in the first quarter of 1998 and 3 per cent in the second quarter. The sluggishness of manufacturing output was directly related to the slackness of activity in the primary sectors of the economy, a slump in the sales of new motor vehicles and weak growth in aggregate real gross domestic expenditure. The weak demand originating in the mining sector, together with the relatively mild winter experienced throughout the country, reduced output growth in the sector supplying *electricity, gas and water* to a minimum in the second quarter of 1998. Growth in the real value added by the *construction sector* also slowed down in the second quarter of 1998 as building contracts were cancelled and the rise in mortgage rates began to dampen building activity.

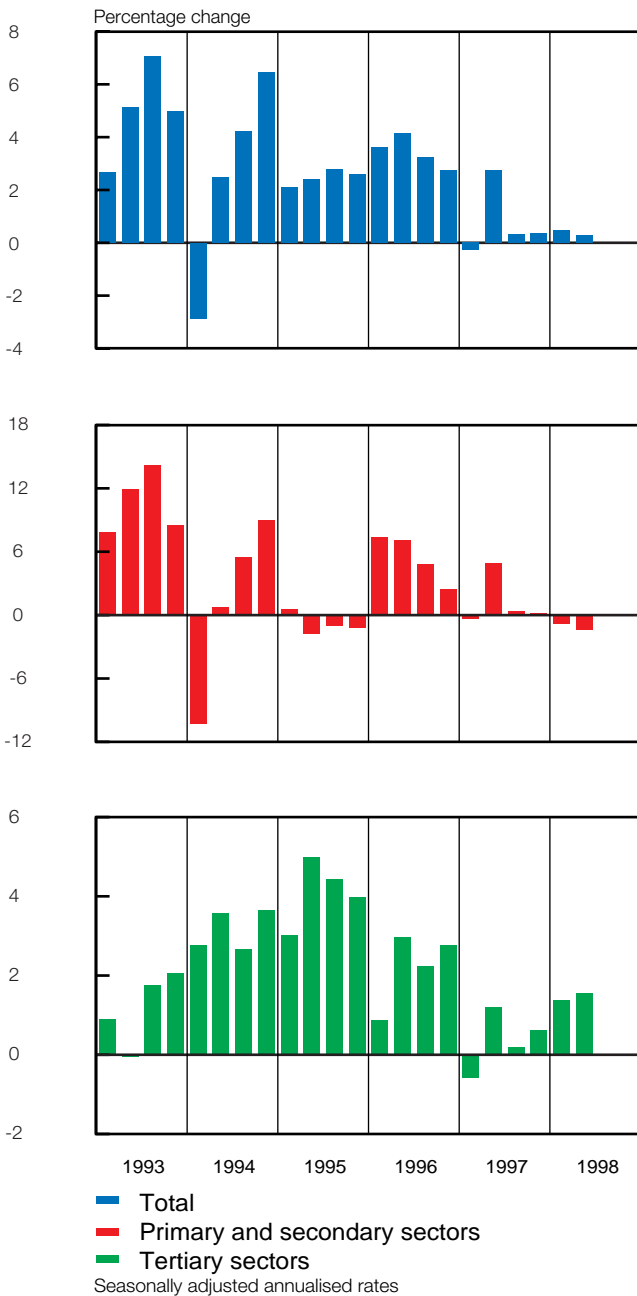
Real output growth in the *tertiary sectors* maintained a steady rate of  $1\frac{1}{2}$  per cent (seasonally adjusted and annualised) in the first two quarters of 1998. In this broad category of economic activity, the real value added by *financial and other services* increased sturdily at annualised rates of 3 per cent in the first quarter of 1998 and  $3\frac{1}{2}$  per cent in the second quarter as trading activity in the financial markets continued apace. The principal force propelling growth in output of the *transportation and telecommunication sector* was the expansion of the

**Table 1. Real gross domestic product**

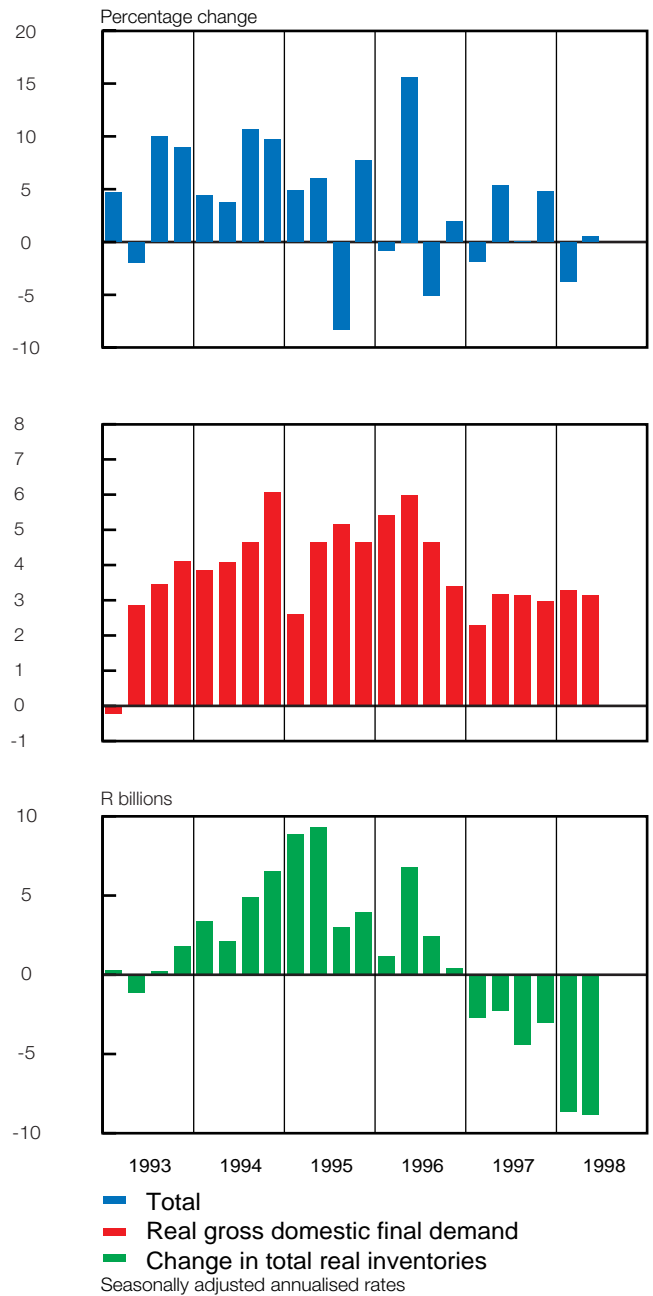
Percentage change at seasonally adjusted and annualised rates

Sectors	1997					1998	
	1st qr	2nd qr	3rd qr	4th qr	Year	1st qr	2nd qr
Primary sectors.....	-13½	2	3	1	½	-1	0
Agriculture.....	-31	-5	-½	0	-1	5	1½
Mining.....	1½	7	5	1½	1	-4½	-½
Secondary sectors.....	6	6	-½	0	3	-½	-2
Manufacturing.....	7	6½	-1	-½	3½	-1	-3
Tertiary sectors.....	-½	1	0	½	1	1½	1½
Commerce.....	-2	2	-1½	-½	½	1½	1½
Transport, storage and communication.....	½	4½	3	2½	2½	1½	1½
Financial and other services.....	2	2	1	1½	2½	3	3½
<b>Total .....</b>	<b>-½</b>	<b>2½</b>	<b>½</b>	<b>½</b>	<b>1½</b>	<b>½</b>	<b>½</b>

## Growth in real gross domestic product



## Components of real gross domestic expenditure



telecommunications network, especially into areas that had previously been inadequately serviced. A small rise in real private consumption expenditure in the second quarter of 1998 ensured that growth in output by the sector *commerce* was sustained, in spite of the sharp decline in the real value added by the motor trade.

### Domestic expenditure

Continuing its erratic growth pattern of the past three years, aggregate real gross domestic expenditure rose at a seasonally adjusted and annualised rate of  $\frac{1}{2}$  per

cent in the second quarter of 1998, following a decline at a rate of 4 per cent in the first quarter. Real domestic final demand, i.e. the total of private and government consumption expenditure and aggregate fixed investment, increased again in the second quarter of 1998 while inventories were depleted further, but at a rate which did not differ much from that in the first quarter.

The growth in *real private consumption expenditure* which had accelerated to 2 per cent (at a seasonally adjusted and annualised rate) in the first quarter of

**Table 2. Real gross domestic expenditure**

Percentage change at seasonally adjusted and annualised rates

Components	1997					1998	
	1st qr	2nd qr	3rd qr	4th qr	Year	1st qr	2nd qr
Private consumption expenditure....	1	1½	1	½	2	2	1½
Government consumption expenditure.....	6	7½	9	11½	7	3	2½
Gross domestic fixed investment ....	2	3	3	1½	3½	6½	8
Domestic final demand .....	2½	3	3	3	3½	3½	3
Change in inventories (R billions)* ....	-2,7	-2,3	-4,4	-3,0	-3,1	-8,7	-8,8
<b>Gross domestic expenditure.....</b>	<b>-2</b>	<b>5½</b>	<b>0</b>	<b>4½</b>	<b>1½</b>	<b>-4</b>	<b>½</b>

\* Constant 1990 prices, annualised

1998, slowed down slightly to 1½ per cent in the second quarter. This slowdown in the growth of real spending by private households was particularly evident in the slower growth in expenditure on durable and semi-durable goods and, to a far lesser extent, a slowdown in the growth in spending on non-durable goods. However, the growth in real household spending on consumer services accelerated appreciably in the second quarter of 1998. An increase in real incomes, generated by a rise in nominal worker remuneration which was faster than the increase in consumer prices, and some easing of the debt-servicing burden of households at the beginning of the second quarter, helped to sustain the growth in private consumption expenditure.

*Real consumption expenditure by general government*, which had been growing at rates of 9 per cent in the third quarter of 1997 and 11½ per cent in the fourth quarter, grew at more moderate rates of 3 per cent in the first quarter of 1998 and 2½ per cent in the second quarter. Despite the slowdown, the year-on-year increase in consumption expenditure by general government still amounted to 5½ per cent in the

second quarter of 1998. Increased spending on intermediate goods and services, rather than further growth in real employee remuneration, was the main reason for the resilient growth in general government consumption expenditure in the second quarter of 1998.

Growth in *real gross domestic fixed investment* accelerated to an annualised rate of 8 per cent in the second quarter of 1998, having grown at a rate of about 6½ per cent in the first quarter. This brought fixed investment expenditure in the first half of 1998 to a level that was 4½ per cent higher than during the corresponding period in 1997 – a slight acceleration from the year-to-year growth of 3½ per cent in the previous year.

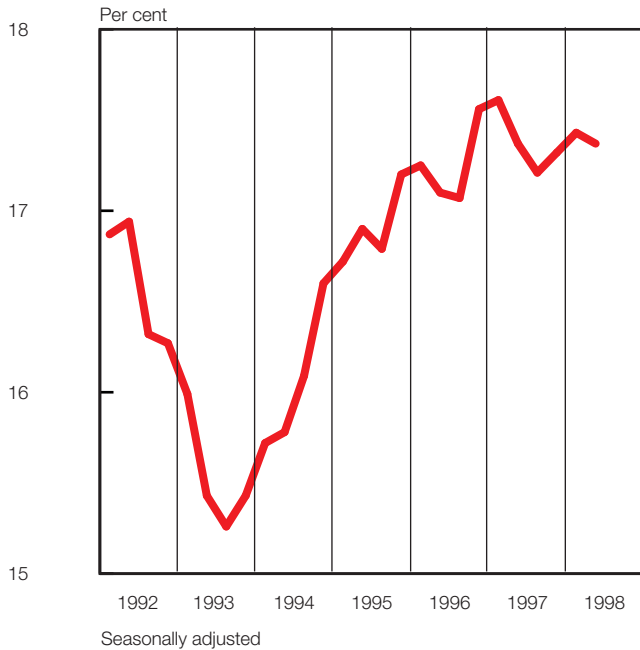
The acceleration in the growth in real fixed investment spending was confined solely to the public corporations sector. This growth was mainly because Telkom is using the injection of capital from privatisation receipts to expand its telecommunications network. As indicated in Table 3, growth in real gross fixed investment slowed down in the private business sector and in the public authorities sector during the second quarter of 1998.

**Table 3. Real gross domestic fixed investment**

Percentage change at seasonally adjusted and annualised rates

Institutional sectors	1997					1998	
	1st qr	2nd qr	3rd qr	4th qr	Year	1st qr	2nd qr
Private business enterprises.....	1	2½	2½	3	3	3	½
Public corporations .....	8½	8	6½	-1	5½	32	58½
Public authorities .....	3	1½	2	-2	4	3	1
<b>Total .....</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>1½</b>	<b>3½</b>	<b>6½</b>	<b>8</b>

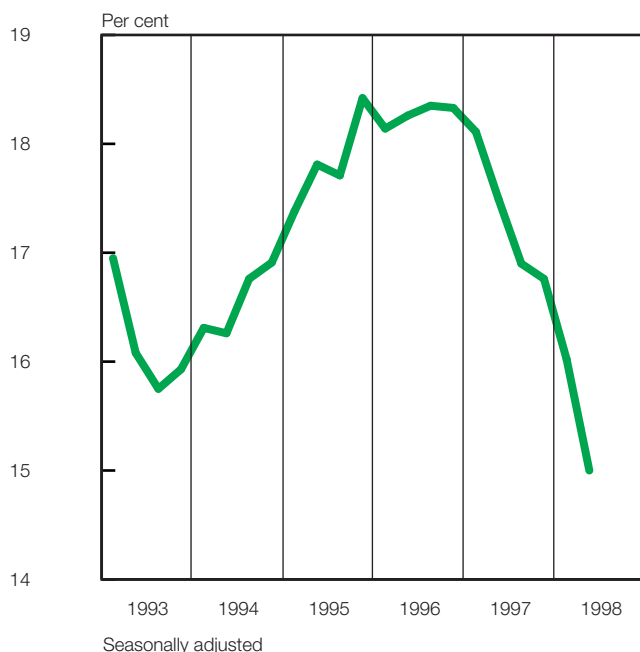
**Gross domestic fixed investment as percentage of gross domestic product**



Despite the annual increases in real gross domestic fixed investment over the past four years, the ratio of fixed investment to gross domestic product has not returned to previous heights. In the second quarter of 1998, gross domestic fixed investment as a percentage of gross domestic product stood at 17½ per cent. Although higher than at the low point in the third quarter of 1993, it was marginally lower than in the first quarter of 1997 and well below the average of 26½ per cent in the first half of the 1980s. At its current level, the fixed investment ratio is inadequate for raising the growth in gross domestic product to a level in excess of growth in the potentially economically active population.

The real value of aggregate inventories continued to fall in the second quarter of 1998, but the rate of inventory decline did not differ significantly from that of the first quarter. The increased cost of carrying inventories in the second quarter and the waning prospects of an improvement in domestic demand contributed to the reduction of inventories, especially in the manufacturing and trade sectors. As a result, the level of industrial and commercial inventories relative to non-agricultural gross domestic product declined from 16 per cent at the end of March 1998 to 15 per cent at the end of June.

**Industrial and commercial inventories as percentage of non-agricultural gross domestic product**



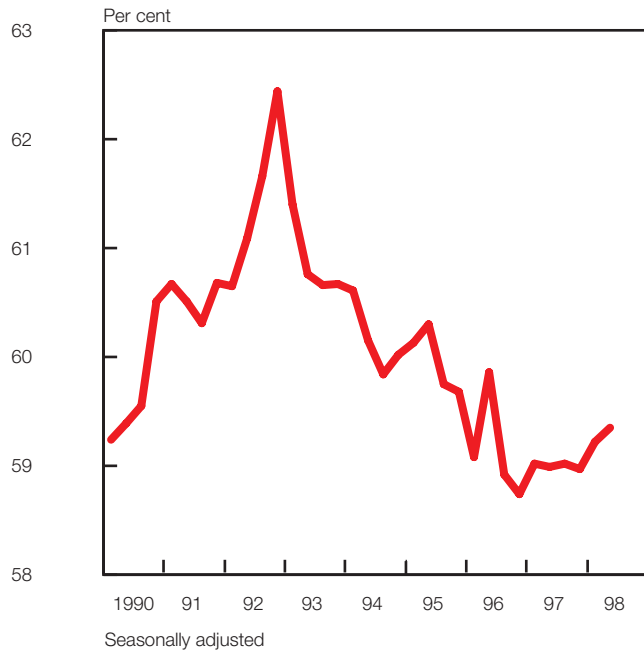
**Factor income and saving**

The year-on-year rate of increase in total nominal factor income at market prices slowed down progressively from 10½ per cent in the first quarter of 1997 to an average of 8½ per cent in the first and second quarters of 1998. The two components of factor income, namely remuneration of employees and the operating surpluses of business enterprises, contributed roughly equally to this slowing of growth in aggregate nominal income.

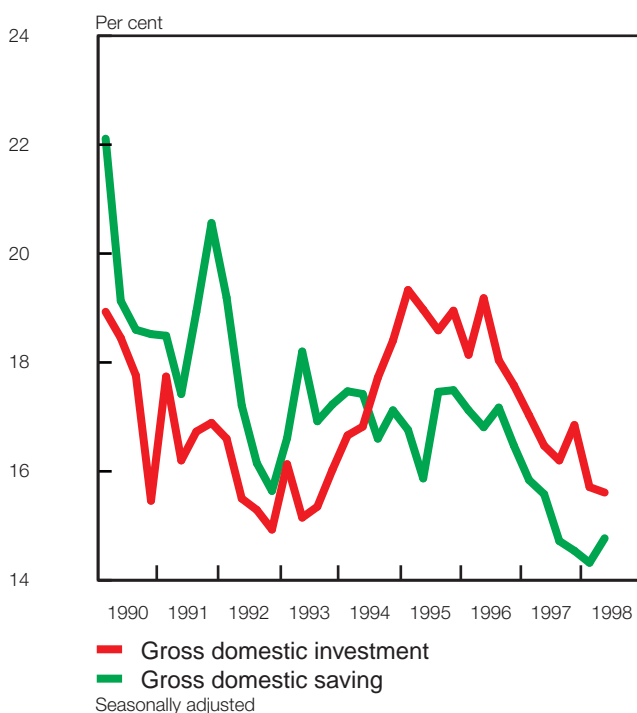
The year-on-year growth in total remuneration of employees receded from 10 per cent in the first quarter of 1997 to 9 per cent in the fourth quarter and then even more gradually to 8½ per cent in the second quarter of 1998. This slowdown should be attributed to the declining level of labour employment in the formal sectors of the economy. However, the potential effect of lower employment on labour's share in the value of output was counteracted by increases in nominal remuneration per worker. Consequently, the remuneration of employees as a percentage of total factor income moved higher from 59 per cent at the beginning of 1997 to about 59½ per cent in the second quarter of 1998.

In similar fashion, the growth over twelve months in total gross operating surpluses slowed down from 10½ per cent in the first quarter of 1997 to approximately 8 per cent in the first quarter of 1998 and 7 per cent in the second quarter. Some accelerations in the growth from quarter to quarter in aggregate operating surpluses occurred in the second quarter of 1998 when surpluses in the mining sector were boosted by the decline in the external value of the rand and those in the financial sector by the surge in activity in the bond and equity markets.

### Labour remuneration as percentage of gross domestic product



### Gross domestic investment and saving as percentage of gross domestic product



The ratio of *gross domestic saving* to gross domestic product improved slightly from about 14½ per cent in the first quarter of 1998 to 15 per cent in the second quarter. This improvement was mainly generated by stronger corporate saving and a decline in the net dissaving by general government. By contrast, the ratio of personal saving to personal disposable income remained at about ½ per cent – a level that was established in the third quarter of 1997, after rapid growth in household debt had pushed personal saving as a ratio of personal disposable income down from more than 5 per cent in 1993.

The low domestic savings ratio, along with the difficulties experienced in attracting foreign direct investment, are among the more serious structural impediments to sustained high economic growth in South Africa. For this reason it is important that government should continue to reduce, and ultimately eliminate, its own dissaving and continue to nurture an environment in which personal saving will be justly rewarded.

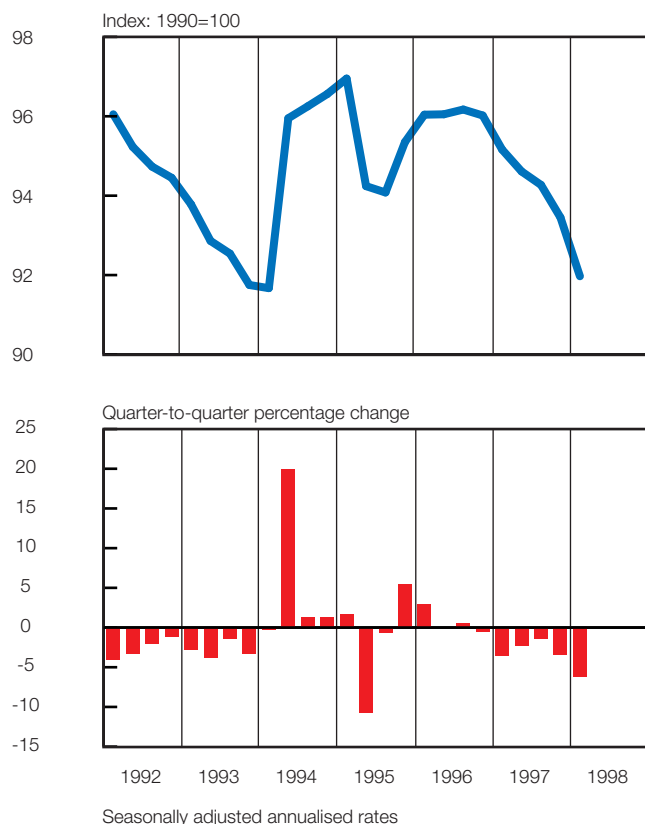
### Employment

Declining employment in the formal sectors of the economy remains a serious concern for policy makers in South Africa. The situation continued to deteriorate in 1997 with both the public and private sectors shedding jobs during the course of the year. Further declines occurred in the first quarter of 1998 when *total employment in the formal non-agricultural sectors* declined by 1,6 per cent from its level at the end of 1997.

The total number of regularly surveyed formally employed workers shrank to 5,1 million at the end of the first quarter of 1998, which was 3,6 per cent less or 187 000 fewer jobs than at the end of the first quarter of 1997. These statistics were the first results obtained from a new process during which the Central Statistical Service has overhauled and redesigned its labour surveys in order to improve coverage and reliability, lessen the respondent burden and fulfil the specifications of the Special Data Dissemination Standard of the International Monetary Fund regarding data quality and timeliness.

A sectoral classification of employment in the formal non-agricultural sectors of the economy indicates that the sector providing community, social and personal services (which include general government services) was the single most important contributor to aggregate employment during the first quarter of 1998. This sector employed 32 per cent of the total number of non-agricultural employees, followed by manufacturing with 27 per cent. The wholesale, retail, motor trade and accommodation sectors jointly contributed 15 per cent to total employment, mining and quarrying 10 per cent, the construction sector 6 per cent and the transportation sector 5 per cent. The smallest two sectors in terms of employment creation were financial services with 4 per cent and electricity generation with 1 per cent.

## Non-agricultural employment



The fall in employment in the formal sectors of the economy, and the implied increase in unemployment, were corroborated by the findings of the October Household Surveys for 1996 and 1997. According to these findings, *official unemployment* as a percentage of the economically active population increased from 16,9 per cent in 1995 to 21,0 per cent in 1996 and 22,7 per cent in 1997. When those who had not taken active steps to find work in the four weeks prior to the survey are also counted as part of the economically active population, the "expanded unemployment rate" increases to 35,6 per cent in 1996 and 37,6 per cent in 1997.

The Presidential Jobs Summit, which was originally scheduled to be held last October, has been postponed until 30 October 1998. The intention of the Summit is to get government, the business community and the organised labour movement together to seek ways of increasing the labour absorption capacity of the economy. Government released the Employment Strategy Framework in June 1998 for discussion at the Summit. The main features of this framework are the following:

- Preservation of jobs through measures which support investment, growth and trade;

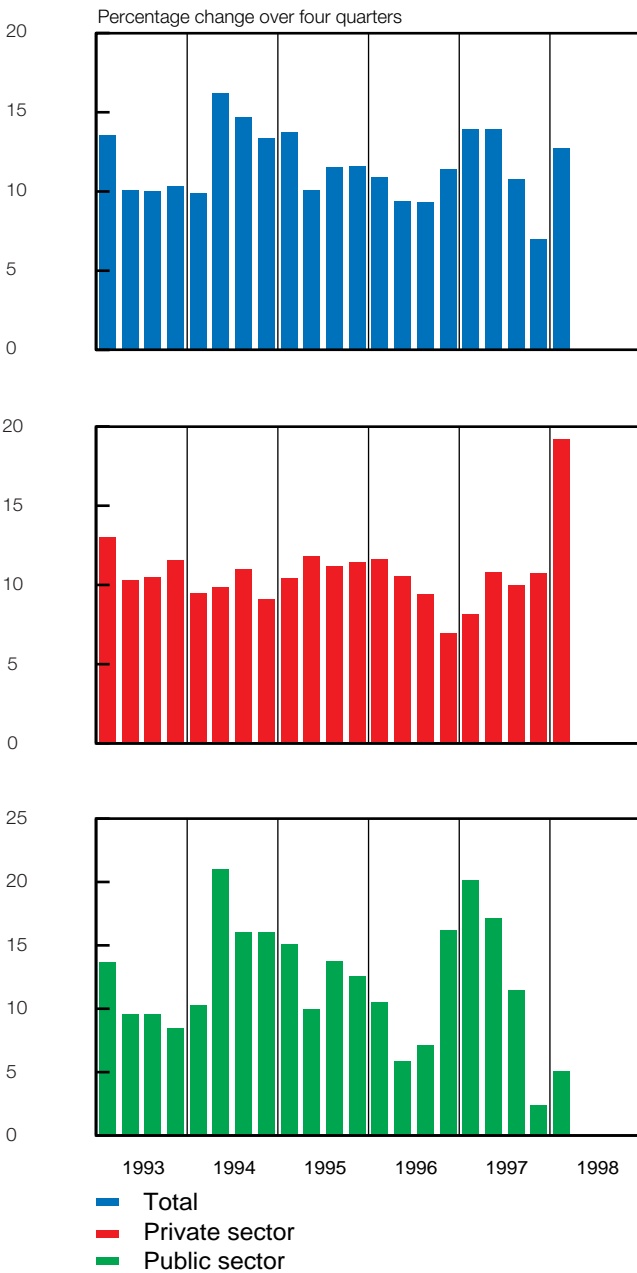
- innovation is highlighted as a key source of competitiveness, economic growth and, therefore, labour absorption;
- a proposal to establish a dedicated tourism fund to be financed through contributions by government and the private sector;
- learnership wages to encourage youth employment through a two-tier wage structure;
- suggested changes to probation regulations which would allow for a reasonable trial period before an employee would gain a permanent position;
- proposals to transform the local offices of the Department of Labour into labour-market information and career services centres;
- increased budgetary allocations for initiatives to improve the employability of people;
- a proposal for the establishment of a Cabinet Employment Cluster Committee which is expected to monitor the implementation of government's commitments and oversee progress in key policy areas; and
- the creation of the Umsobomvu Trust Fund, capitalised by a levy on the free reserves of mutual insurance societies at the time of demutualisation, for the financing of key employment and training programmes with an emphasis on employment of young entrants to the labour market.

## Labour costs and productivity

Although the *average nominal remuneration per worker* in the non-agricultural sectors of the economy continued to rise fairly rapidly in 1997, there was a clear tapering off in the rate of increase during the course of the year. By the fourth quarter of 1997 the growth in average nominal remuneration per worker had eased to a year-on-year rate of 7,0 per cent from 13,9 per cent in the first quarter. This was entirely due to developments in the public sector; in the private sector, by contrast, growth in nominal remuneration per worker accelerated from 8,2 per cent in the first quarter of 1997 to 10,8 per cent in the fourth quarter.

The strong nominal wage growth in the private sector occurred despite indications of rising unemployment, a growing recognition that remuneration rises should be linked to productivity changes and a slowdown in inflation. In the first quarter of 1998, workers were demanding remuneration rises substantially above the rate of consumer price inflation, and underscored their demands with industrial action which caused an increase in the number of workdays lost on account of strikes and work stoppages. Growth in nominal remuneration per worker accordingly accelerated to a year-on-year rate of 12,7 per cent in the first quarter of 1998. This acceleration was especially evident in the private sector. In the public sector, where demands have been moderate and government's offer has been limited to increases of between 5 and 10 per cent, the year-on-year increase

## Nominal remuneration per worker



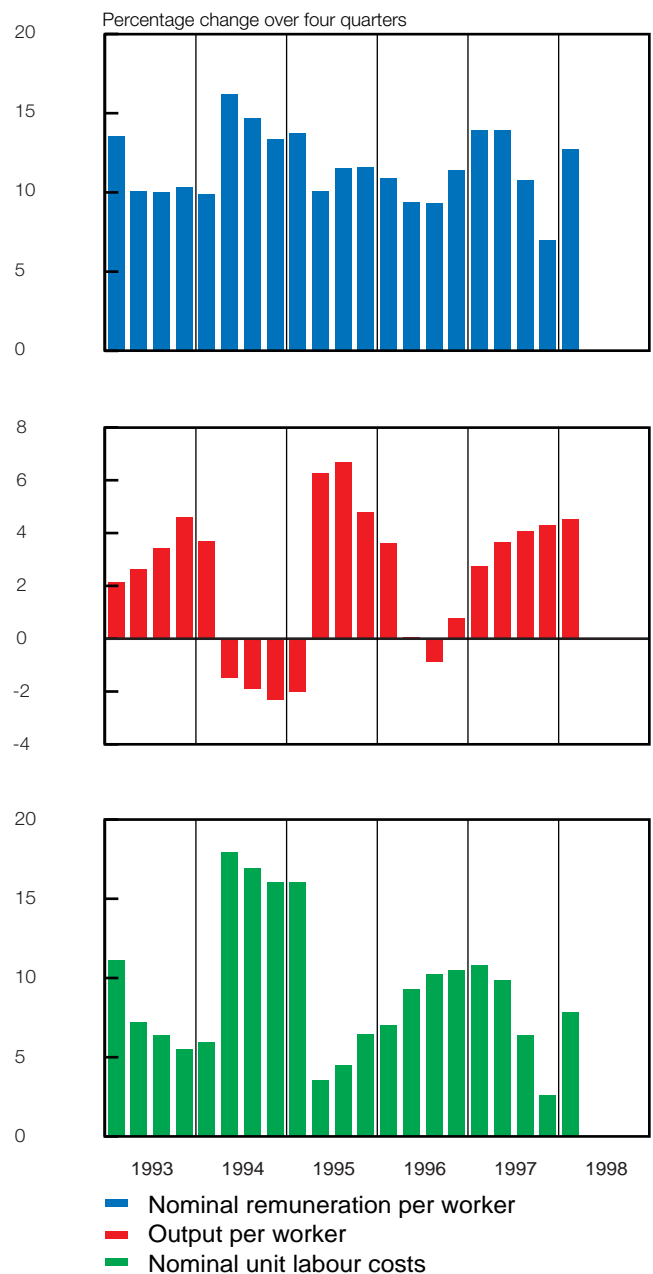
came to 5,1 per cent in the first quarter of 1998 compared with 19,2 per cent in the private sector.

The year-on-year increase in nominal remuneration per worker continued to exceed the increase in output prices as reflected by increases in the price deflator for the non-agricultural gross domestic product. The ratio of remuneration per worker to output prices, i.e. the *inflation-adjusted remuneration per worker* or real wages paid by employers, consequently rose by 3,3 per cent in 1997 and by 4,9 per cent in the first quarter of 1998. Real wages paid by employers cannot rise

faster than productivity without a decrease in the employers' share of the value of output.

Solid productivity growth prevented the rapid increase in inflation-adjusted remuneration per worker from compressing the operating margins of producers. *Output per worker in the non-agricultural sectors of the economy* rose by 3,7 per cent in 1997 and at a year-on-year rate of 4,5 per cent in the first quarter of 1998, thus ensuring that the production factor shares in the overall value of output remained broadly intact. This

## Non-agricultural labour productivity, remuneration and unit labour costs



**Table 4. Labour costs and productivity in the non-agricultural sectors**

Percentage change over four quarters

Period	Remuneration per worker		Productivity	Nominal unit labour costs
	Nominal	Real		
1997: 1st qr .....	13,9	5,0	2,8	10,8
2nd qr .....	13,9	5,8	3,6	9,9
3rd qr .....	10,7	2,9	4,1	6,4
4th qr .....	7,0	-0,3	4,3	2,6
<b>Year.....</b>	<b>11,4</b>	<b>3,3</b>	<b>3,7</b>	<b>7,4</b>
1998: 1st qr .....	12,7	4,9	4,5	7,8

improvement in productivity not only reflected the contraction in employment numbers, but probably also an improvement in efficiency and better work practices.

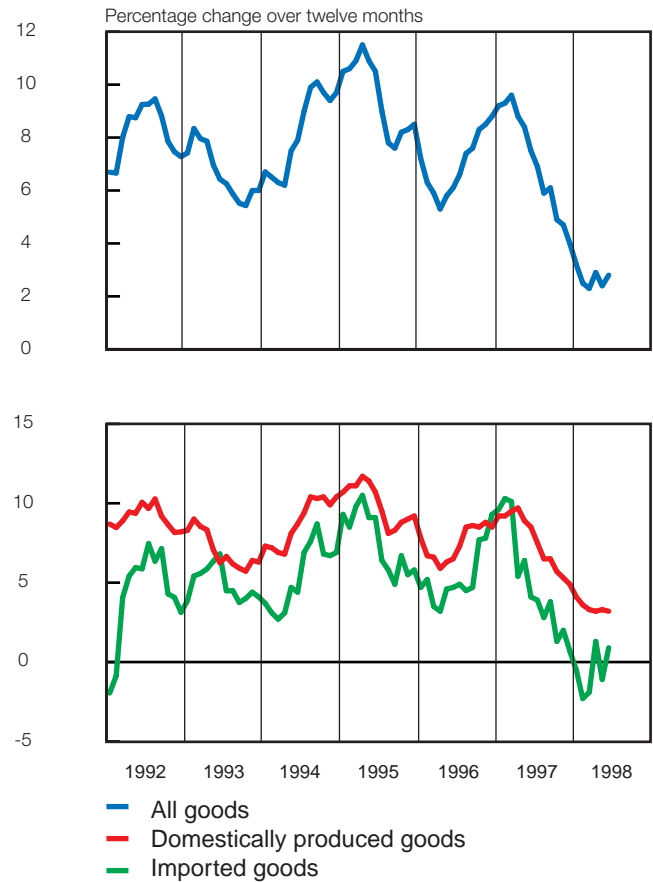
The joint effect of the slowdown in the growth of nominal worker remuneration and rising output per worker during 1997 was the slowing of the growth over one year in *nominal unit labour costs* from 10,8 per cent in the first quarter of 1997 to only 2,6 per cent in the fourth quarter. This slowdown made a significant contribution to the fall in inflation in the second half of 1997 and the first half of 1998. The rise in the cost of labour per unit of output then accelerated to 7,8 per cent in the first quarter of 1998 as nominal wage growth gathered momentum and productivity grew at a slightly slower pace than in the fourth quarter of 1997. Continued growth in nominal unit labour costs at such a high rate will rapidly erode the improvement in the international competitiveness of domestic producers, which followed the recent depreciation of the rand.

### Inflation

The downward movement in inflation from the beginning of 1997 seemed to have come to an end during the second quarter of 1998. The change from quarter to quarter (seasonally adjusted and annualised) in the *all-goods production price index*, accelerated to 3,6 per cent in the second quarter after having declined from 8,1 per cent in the first quarter of 1997 to 0,6 per cent in the first quarter of 1998. The similarly measured change in the *overall consumer price index* fell from 9,9 per cent in the first quarter of 1997 to 3,9 per cent in the first quarter of 1998, but then accelerated to 5,7 per cent in the second quarter.

Measured over periods of twelve months, the rate of increase in the all-goods production price index accelerated from 2,3 per cent in March 1998 to 2,8 per cent in June and 3,7 per cent in July. This acceleration may be attributed to higher rates of increase in the prices of both domestically produced goods and imported goods.

### Production prices



Inflation in the prices of *domestically produced goods* accelerated from a seasonally adjusted and annualised rate of 1,5 per cent in the first quarter of 1998 to 4,4 per cent in the second quarter. Over the same period, the decline in the prices of imported goods slowed down from an annualised rate of 2,8 per cent in the first quarter to 0,8 per cent in the second quarter, indicating an abatement of the restraining effect of low inflation in other countries. However, the depreciation of the external value of the rand during June 1998 then caused imported inflation over a period of twelve months to accelerate rapidly from 0,9 per cent in June to 5,1 per cent in July.

The acceleration in *consumer price inflation* in the second quarter of 1998 had its origin in higher rates of increase in the *prices of consumer goods*, which more than offset a slowdown in the prices of consumer services. Increases in the prices of consumer goods, calculated from quarter to quarter and annualised, rose from 4,2 per cent in the first quarter of 1998 to 8,4 per cent in the second quarter, mainly due to rises in the prices of food, alcoholic drinks, transport running cost and increases related to excise duties on the retail



**Table 5. Production price indices**

Percentage change over twelve months

	Domestically produced goods	Imported goods	All goods
1997: Jul .....	7,5	3,9	6,9
Aug .....	6,5	2,8	5,9
Sep .....	6,5	3,8	6,1
Oct .....	5,7	1,3	4,9
Nov .....	5,3	2,0	4,7
Dec .....	4,9	0,7	4,0
1998: Jan .....	4,1	-0,5	3,2
Feb .....	3,6	-2,3	2,5
Mar .....	3,3	-1,9	2,3
Apr .....	3,2	1,3	2,9
May .....	3,3	-1,1	2,4
Jun .....	3,2	0,9	2,8
Jul .....	3,5	5,1	3,7

prices of tobacco products. Measured over periods of twelve months, inflation in the prices of consumer goods accelerated from 5,5 per cent in March 1998 to 5,9 per cent in June and 6,0 per cent in July.

The quarter-to-quarter rise in the *prices of consumer services* fell from 5,4 per cent in the first quarter of 1998 to 0,4 per cent in the second quarter, owing mainly to the lowering of mortgage rates, which

**Table 6. Inflation**

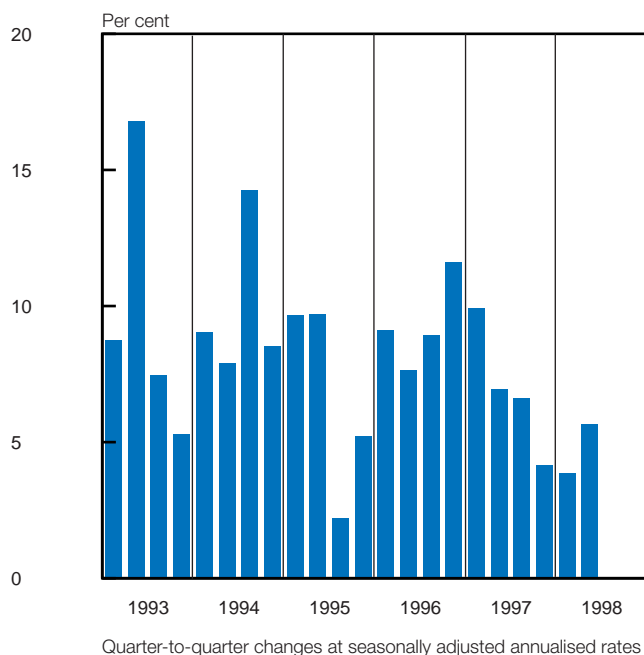
Quarter-to-quarter changes at annualised rates

Period	All-goods production price index	Overall consumer price index	Underlying consumer price index
1997: 1st qr .....	8,1	9,9	7,4
2nd qr .....	3,1	7,0	8,1
3rd qr .....	2,5	6,6	6,7
4th qr .....	4,4	4,1	7,8
1998: 1st qr .....	0,6	3,9	5,4
2nd qr .....	3,6	5,7	10,1

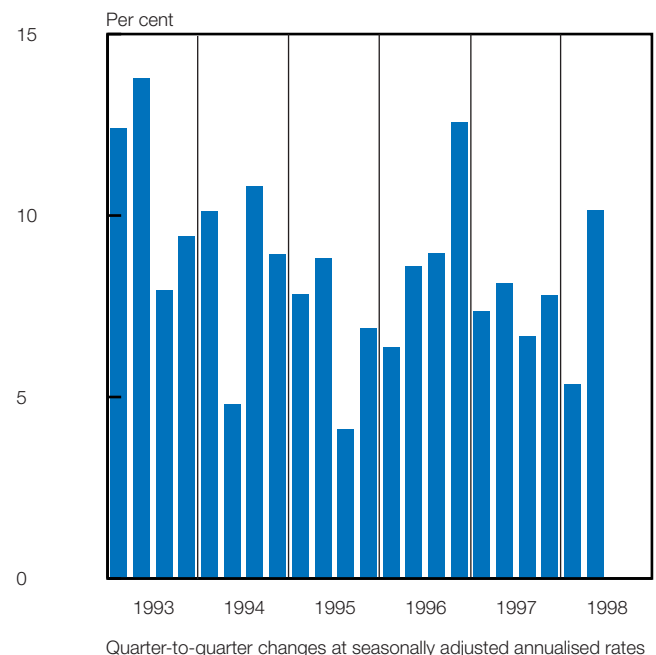
reduced the increase in the housing cost component of the consumer price index. However, the year-on-year rate of increase in the prices of consumer services, which had fallen from 9,6 per cent in July 1997 to 4,2 per cent in June 1998, rose sharply to 7,5 per cent in July when mortgage rates were pushed higher by the general tightening of monetary conditions following the weakening of the rand.

*Underlying inflation* (i.e. the change in the overall consumer price index, excluding the prices of food and non-alcoholic beverages, the cost of home ownership

**Consumer prices**



**Underlying inflation**



and value-added tax), which is a more accurate indicator of inflationary pressures in the economy, accelerated substantially from 5,4 per cent in the first quarter of 1998 to 10,1 per cent in the second quarter. Year-on-year underlying inflation increased more gently from 6,8 per cent in February 1998 to 7,6 per cent in June and 7,7 per cent in July.

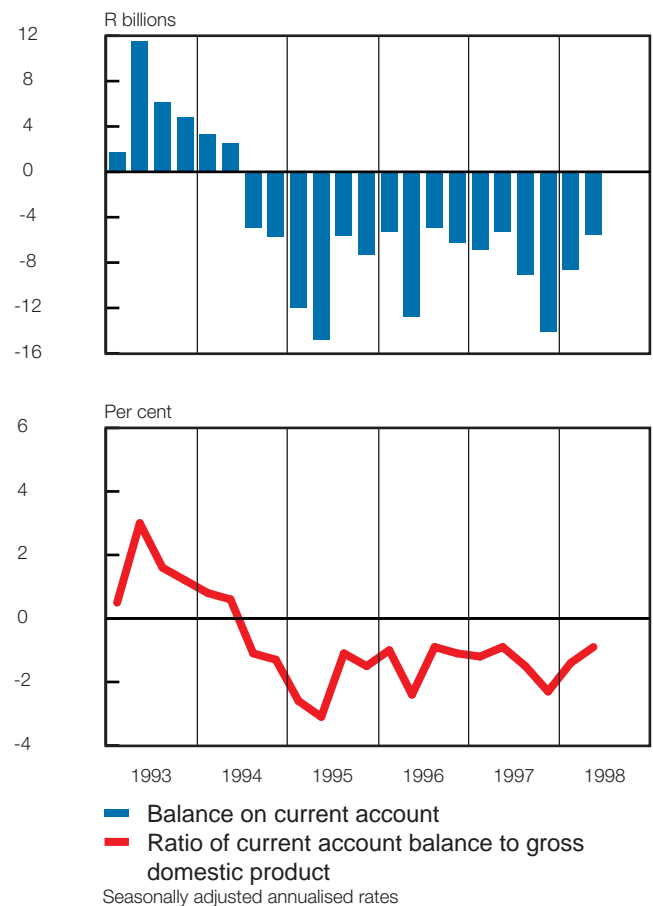
Without exception, all the indicators of inflation are signalling that the downward phase of the inflation cycle may have turned. The sharp fall in the rand in June 1998, the acceleration in the growth of nominal unit labour costs in the first quarter of the year and the increased wage demands suggest that inflation will rise again in the second half of the year, despite the weak state of the economy. The extent of the expected pick-up in inflation over the next twelve months will be decided mostly by the success or failure of containing production cost in the domestic economy and by future changes in the exchange rate of the rand.

## Foreign trade and payments

### Current account

The slowdown in the growth in real gross domestic expenditure, together with the steep decline in the external value of the rand, led to a further contraction in the *current-account deficit* in the second quarter of 1998. The shrinking of the deficit in the first half of 1998 arrested the deterioration in the current account that had become apparent in the second half of 1997. Although the current-account deficits (seasonally adjusted and annualised) of R8,6 billion in the first quarter of 1998 and R5,5 billion in the second quarter were slightly higher than their counterparts in the first half of 1997, they were lower than the R9,0 billion of the third quarter of 1997 and the R14,1 billion of the fourth quarter. The current-account shortfall actually fell to below 1 per cent of gross domestic product in the second quarter of 1998 when it was measured at 0,9 per cent. This ratio compares favourably with 1,4 per cent in the first quarter of 1998 and 1,5 per cent in the whole of 1997.

### Current account



**Table 7. Balance of payments on current account**

Seasonally adjusted and annualised  
R billions

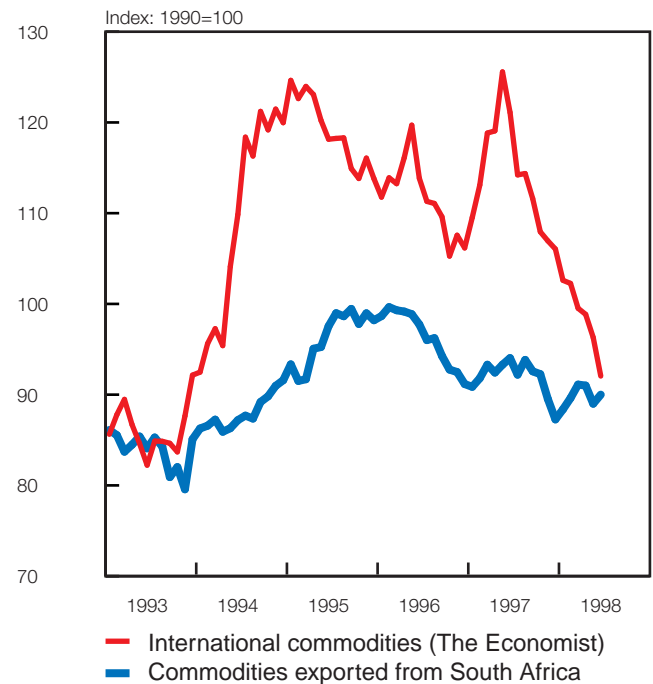
	1997				1998	
	1st qr	2nd qr	3rd qr	4th qr	1st qr	2nd qr
Merchandise exports .....	107,7	115,9	115,3	117,6	124,3	126,3
Net gold exports .....	26,8	24,7	26,0	25,7	24,9	22,1
Merchandise imports .....	-123,6	-128,6	-132,1	-139,0	-139,1	-134,7
Net service and transfer payments .....	-17,7	-17,3	-18,2	-18,4	-18,7	-19,2
<b>Balance .....</b>	<b>-6,8</b>	<b>-5,3</b>	<b>-9,0</b>	<b>-14,1</b>	<b>-8,6</b>	<b>-5,5</b>

The improvement in the external current-account deficit was mainly attributable to continued weak import demand, but also reflected the persistently strong performance of merchandise exports, especially that of manufactured goods. The total export effort was hampered by a decline in the value of net gold exports, and an increase in net service and transfer payments also put a brake on further improvements in the current-account balance.

The value of *merchandise exports*, which had risen from a seasonally adjusted and annualised level of R117,6 billion in the fourth quarter of 1997 to R124,3 billion in the first quarter of 1998, increased to R126,3 billion in the second quarter or at an annualised growth rate of 6,6 per cent. Export earnings were boosted in the second quarter of 1998 when the average level of export prices rose by 3 per cent (12,5 per cent on an annualised basis), mainly owing to the decline in the external value of the rand. At the same time, the prices at which South African commodities were trading in the international markets appeared to be bottoming out in the first half of 1998.

The physical quantity of merchandise exports, which had risen strongly by 4 per cent from the fourth quarter of 1997 to the first quarter of 1998, declined by 1½ per cent in the second quarter, primarily because smaller quantities of agricultural products had been exported. Exports of manufactured goods, which had been weak in the second half of 1997, regained some momentum in the first half of 1998.

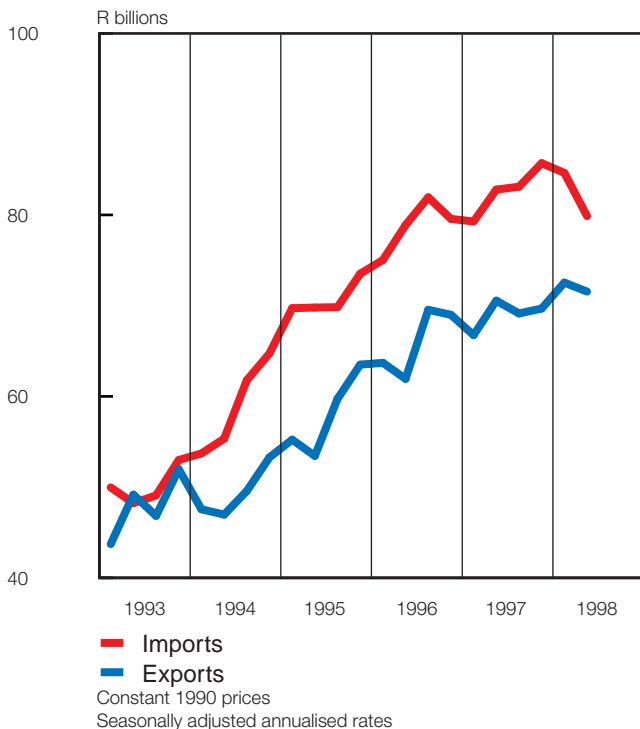
The value of *net gold exports* (seasonally adjusted and annualised) was adversely affected by the persistent decline in the gold price and a sharp decline in the physical quantity of gold exports. Gold export

**Commodity prices in US dollars**

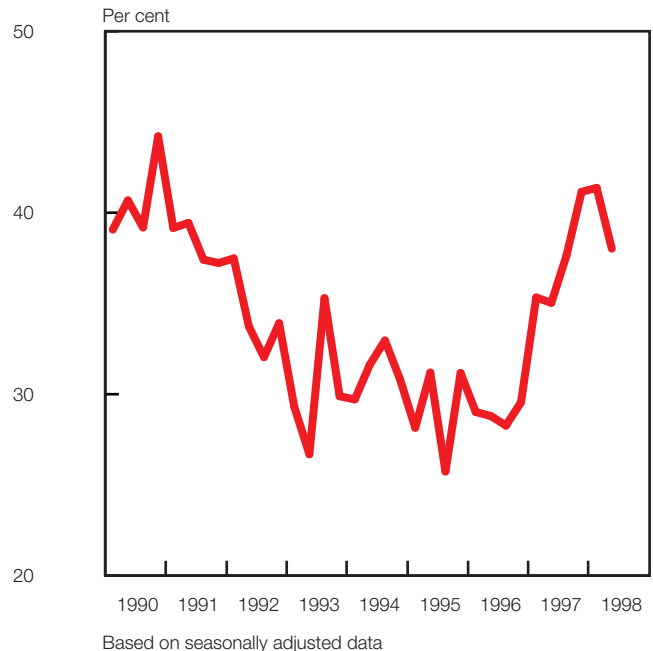
earnings declined steadily from R25,7 billion in the fourth quarter of 1997 to R24,9 billion in the first quarter of 1998 and R22,1 billion in the second quarter. The volume of gold production rose fractionally in the second quarter of 1998, following a decline of 2½ per cent in the first quarter. Although the average fixing price of gold on the London market rose from R1 457 per fine ounce in the first quarter of 1998 to R1 551 per fine ounce in the second quarter, the average price realised fell by 4,3 per cent. In the first quarter of 1998 the realised price of gold exports was exceptionally high because of the delivery of gold in terms of past forward sales contracts.

The weakness in domestic demand continued to retard the growth of *import volumes*. In fact, the physical quantity of goods imported declined by 5½ per cent in the second quarter of 1998, following a decline of 1 per cent in the first quarter. These declines took the average value of imported goods at constant prices down to a level that was 2½ per cent lower in the first half of 1998 than in the second half of 1997. The increase in *import prices*, which had been expected to follow the depreciation of the rand, was somewhat muted by a decline in international oil prices and relative price stability in South Africa's main trading-partner countries. The average price level of imported goods accordingly rose by only about 2½ per cent in the second quarter of 1998 over the average level of the first quarter. The combined outcome of the rise in

## Real merchandise imports and exports



## Interest and dividend payments as percentage of total payments for services to non-residents



import prices and of the decline in import volumes was a relatively sharp decrease in the *value of merchandise imports* (seasonally adjusted and annualised) from R139,1 billion in the first quarter of 1998 to R134,7 billion in the second quarter, i.e. a decline of more than 3 per cent in one quarter. Reflecting the weaker trend in private fixed investment and private consumption expenditure, the decline in merchandise imports was noticeable mainly in manufactured goods such as machinery and electrical equipment, textiles and textile products and chemical products.

The deficit on *net service and transfer payments* to the rest of the world (seasonally adjusted and annualised) widened from R18,7 billion in the first quarter of 1998 to R19,2 billion in the second quarter. Strong inward investment in the securities markets during 1997 and the first quarter of 1998 has led to higher interest and dividend payments, which more than offset the rise in receipts from foreign tourist expenditure in South Africa and investment income earned abroad. Interest and dividend payments in the first half of 1998 accounted for more than 39 per cent of total service payments compared with 35 per cent a year earlier.

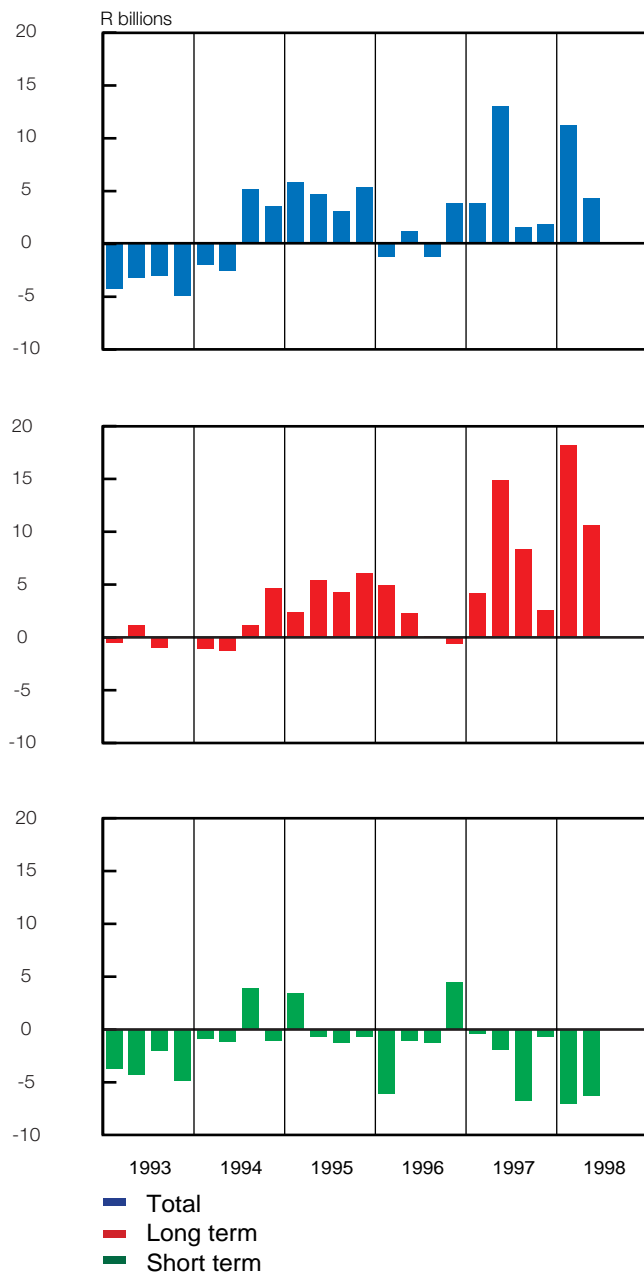
### Capital account

In 1997 South Africa had a net *inflow* of long-term capital of R30,0 billion and a net *outflow* of short-term capital, not related to reserves, of R9,8 billion. The net

inflow of long-term capital was dominated by non-residents' net purchases of bonds and shares listed on the domestic securities markets. These portfolio flows are known to be far less stable than foreign direct investment as they are highly sensitive to swings in investors' sentiment towards a specific class of asset. The outflow of short-term capital in 1997 was mainly due to a preference for the domestic financing of international trade and, consequently, less use of off-shore trade financing. This pattern of capital flows continued in the first quarter of 1998 when the net inward movement of long-term capital amounted to R18,2 billion and the net outward movement of short-term capital to R7,0 billion.

South Africa's classification as an emerging market by most international investors made the domestic economy susceptible to the capricious behaviour of international financial markets. When investors became nervous about financial problems in other emerging markets during the second quarter of 1998, South Africa was also affected. Despite the existence of relatively stable domestic economic conditions, the country was not shielded from the worldwide reassessment of the quality of emerging-market assets. The net inward movement of capital into the South African economy accordingly fell by more than 60 per cent from the first quarter of 1998 to the second quarter. Once again, the net inflow of non-reserve related

## Net capital movements (not related to reserves)



capital comprised a net inflow of long-term capital and a strong net outflow of short-term capital.

The *net outflow of short-term capital* persisted at a high level in the second quarter of 1998: although it declined from R7,0 billion in the first quarter to R6,3 billion in the second quarter, the latest quarterly outflow was not unduly smaller than the net outflow of short-term capital of R9,8 billion for the whole of the calendar year 1997. An important component of the net outward movement of short-term capital was the advancing of payments for imports and a postpone-

ment of the repatriation of the proceeds from exports, both of which were spurred by expectations of a further depreciation of the rand. In addition, the heightened uncertainty about future exchange rate movements and the high cost of forward cover encouraged importers and exporters to increase their use of domestic credit facilities and to redeem their commitments denominated in foreign currency. The overall impact of the outflow of short-term capital from the domestic non-bank private sector was cushioned to some extent by an increase of R7,0 billion in the foreign liabilities of the monetary institutions during the second quarter of 1998. The high cost of funding in the domestic money market obviously encouraged some of the banks to seek funding for their domestic lending activities in the offshore money market.

The *net inflow of long-term capital* contracted from a record high of R18,2 billion in the first quarter of 1998 to R10,6 billion in the second quarter. As shown in Table 8, the net inflow of long-term capital in the second quarter of 1998 originated mainly from an inflow of capital to the private sector. This inflow was due to continued solid net purchases of shares listed on the Johannesburg Stock Exchange as investors rebalanced their emerging markets equity portfolios in favour of South African assets. Non-resident share-buying was largely left unaffected by the emerging-market crisis; in fact, net equity purchases increased from R12,8 billion in the first quarter of 1998 to R14,1

**Table 8. Net capital movements not related to reserves**

R billions

	1997				1998	
	1st qr	2nd qr	3rd qr	4th qr	1st qr	2nd qr
Long-term capital						
Public authorities.....	1,0	12,2	2,1	-2,5	6,2	1,9
Public corporations	1,4	4,8	0,8	-0,2	1,0	1,8
Monetary sector.....	-0,2	-0,1	-0,3	-0,2	-0,6	-0,2
Private sector.....	2,0	-2,0	5,7	5,5	11,6	7,1
<b>Total long-term capital .....</b>	<b>4,2</b>	<b>14,9</b>	<b>8,3</b>	<b>2,6</b>	<b>18,2</b>	<b>10,6</b>
Short-term capital						
Monetary sector.....	2,3	3,3	-4,5	0,0	-0,1	7,0
Other, including unrecorded transactions .....	-2,7	-5,2	-2,3	-0,7	-6,9	-13,3
<b>Total short-term capital .....</b>	<b>-0,4</b>	<b>-1,9</b>	<b>-6,8</b>	<b>-0,7</b>	<b>-7,0</b>	<b>-6,3</b>
<b>Total capital.....</b>	<b>3,8</b>	<b>13,0</b>	<b>1,5</b>	<b>1,9</b>	<b>11,2</b>	<b>4,3</b>

billion in the second quarter. Only part of these inflows was offset by the acquisition of foreign assets by South African institutional investors, through the asset-swap mechanism and through the repayment of foreign loans which fell due in the second quarter of 1998. Some of these loan repayments were due in terms of the Final Debt Arrangements with foreign creditor banks.

The impact of the emerging-market crisis was particularly evident in the changes in the *net inflow of long-term capital to public authorities*. Non-residents were aggressive buyers of public-sector securities in the first quarter of 1998, purchasing bonds worth a net amount of R6,8 billion. When nervousness about exchange rate risk in emerging markets intensified in May 1998, non-residents became net sellers, taking the net value of purchases for the whole of the second quarter of 1998 down to only R2,1 billion. The sudden and strong contraction of portfolio flows in the second quarter of 1998 emphasised the need to strengthen the domestic savings rate and to create an investment climate which would encourage flows of foreign direct investment into the country.

#### Foreign debt<sup>1)</sup>

The strong increase in non-resident holdings of public-sector bonds and substantial amounts of eurorand bonds issued on behalf of South African parastatal corporations during 1997, resulted in an increase in the total outstanding foreign debt from US\$34,5 billion at the end of 1996 to \$39,2 billion at the end of 1997. The dollar equivalent of rand-denominated foreign debt increased from US\$8,5 billion to \$14,0 billion over the same period. By contrast, foreign-currency-denominated debt declined from US\$26,0 billion at the end of 1996 to \$25,2 billion at the end of 1997. Debt that had been renegotiated in terms of successive standstill arrangements with foreign creditors declined by US\$0,2 billion to \$2,5 billion at the end of 1997. The final payment in terms of the Final Debt Standstill Arrangements will be made in August 2001.

Measured in rands, the country's total outstanding foreign debt rose from R161,8 billion at the end of 1996 to R190,8 billion at the end of 1997. Foreign debt as a percentage of gross domestic product increased from 27,3 per cent at the end of 1996 to 30,4 per cent at the end of 1997. At the end of 1996 the country's total foreign assets were estimated to be equal to 27,8 per cent of the gross domestic product for that year.

**Table 9. Foreign debt of South Africa**

US\$ billions at end of year

	1993	1994	1995	1996	1997
<b>Renegotiated debt.....</b>	<b>4,4</b>	<b>3,4</b>	<b>3,0</b>	<b>2,7</b>	<b>2,5</b>
Public sector.....	1,3	0,8	1,1	1,3	1,2
Monetary sector.....	1,6	1,0	0,7	0,3	0,2
Non-monetary private sector.....	1,5	1,6	1,2	1,1	1,1
<b>Other foreign-currency-denominated debt ...</b>	<b>15,0</b>	<b>18,3</b>	<b>22,4</b>	<b>23,3</b>	<b>22,7</b>
Public sector.....	3,3	3,4	4,5	4,7	4,2
Monetary sector.....	1,8	3,9	4,9	6,6	7,5
Non-monetary private sector.....	4,0	4,5	6,3	5,9	5,7
Bearer bonds and notes.....	1,4	2,7	3,8	4,0	4,0
Converted long-term loans.....	4,5	3,8	2,9	2,1	1,3
<b>Total foreign-currency-denominated debt ...</b>	<b>19,4</b>	<b>21,7</b>	<b>25,4</b>	<b>26,0</b>	<b>25,2</b>
<b>Rand-denominated debt</b>	<b>7,6</b>	<b>8,0</b>	<b>9,9</b>	<b>8,5</b>	<b>14,0</b>
Bonds.....	5,0	5,3	7,3	6,3	10,4
Other.....	2,6	2,7	2,6	2,2	3,6
<b>Total foreign debt.....</b>	<b>27,0</b>	<b>29,7</b>	<b>35,3</b>	<b>34,5</b>	<b>39,2</b>

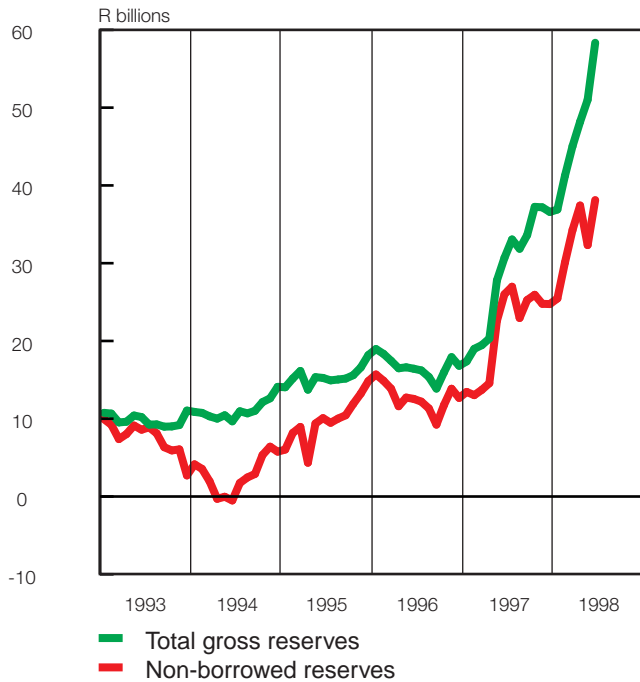
#### Foreign reserves

Although the onset of the currency crisis in May and June 1998 led to large-scale selling of bonds by non-residents and sizeable outflows of short-term capital from the country, the surplus on the capital account of the balance of payments, excluding reserve-related borrowing, still exceeded the absolute value of the external current-account deficit. The result was that the overall balance of payments was in surplus to the amount of R2,2 billion in the second quarter of 1998. There was also an increase in reserve-related liabilities from R10,8 billion at the end of March 1998 to R18,3 billion at the end of June, mainly reflecting the use of foreign credit lines by the Reserve Bank. Together with valuation adjustments, the increase in reserve-related liabilities helped raise the *gross gold and other foreign reserves* by R13,3 billion from the end of March 1998 to the end of June. In July 1998 the Reserve Bank's net gold and other foreign reserves declined by R2,8 billion.

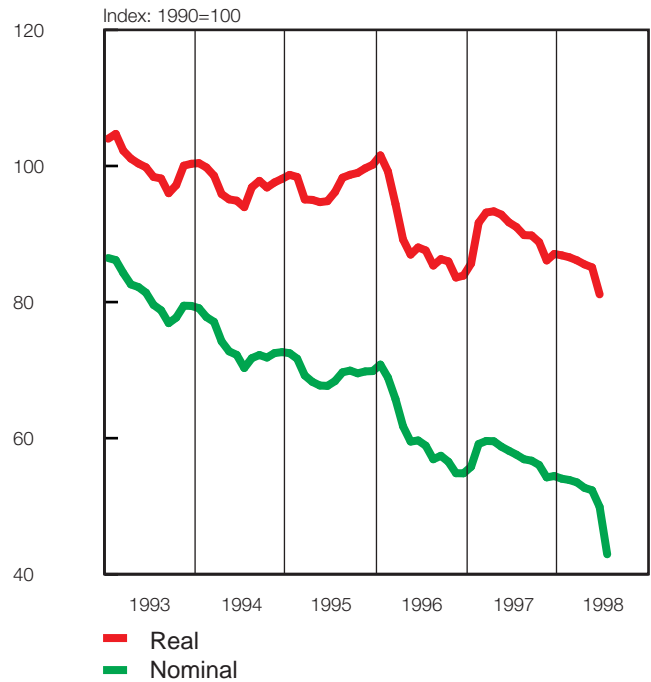
The *net open forward position* (NOFP) of the Reserve Bank (defined as the Bank's net oversold forward position in foreign currency reduced by its net holdings of spot gold and foreign exchange reserves) declined from US\$16,3 billion at the end of December 1997 to \$12,8 billion at the end of March 1998. When the pressure on the rand intensified in May 1998, the Reserve Bank intervened in the foreign-currency market, mainly by buying rands forward against dollars. As a consequence

1) Estimates of foreign debt have been revised in view of results obtained from a comprehensive census survey of foreign transactions, liabilities and assets. Certain categories of debt were also reclassified to align the presentation of foreign debt with internationally accepted practices. Estimates of short-term foreign-currency-denominated debt have been revised upward from 1992.

### Gold and other foreign reserves



### Exchange rates of the rand



the net open forward position of the Bank increased to US\$17,9 billion at the end of May 1998, to \$22,5 billion at the end of June and to \$22,9 billion at the end of July.

Although the existence of a large official net open forward position by the Reserve Bank holds a risk of financial deficits for government if the rand were to depreciate excessively, an increase in the official oversold forward position is not equivalent to an increase in the foreign liabilities of the country. An increase in the net oversold foreign-currency position of the Reserve Bank is the outcome of the decisions to hedge currency risks that were taken by South African organisations with existing foreign-currency exposures and non-residents with rand exposures. Therefore, it is more akin to a shift over time within the country of existing foreign-currency commitments, rather than to an increase in the overall amount of outstanding foreign liabilities of the country.

Claims by the monetary institutions on the government sector will increase to the extent that the Reserve Bank incurs deficits because of its involvement in forward foreign-currency transactions. If the deficits are not offset through countervailing monetary operations, this could cause an increase in the liquidity of the private banking system and accelerate monetary growth, with the concomitant inflationary consequences.

### Exchange rates

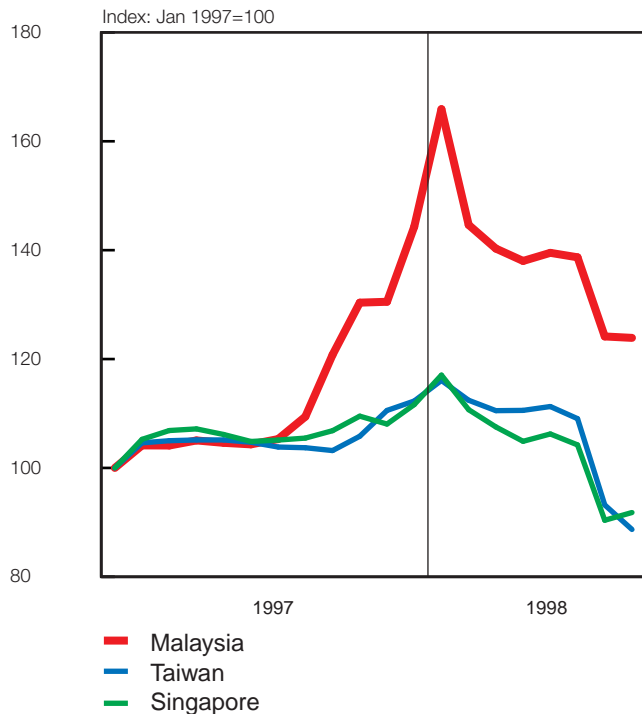
Conditions in the South African foreign-exchange market were relatively tranquil during the first four and a half months of 1998. The rand depreciated steadily at

a relatively modest pace, regaining some of the losses in competitive ability incurred during the second half of 1997 when the currencies of Southeast Asian economies depreciated rapidly. The nominal effective exchange rate of the rand against a basket of the four currencies of South Africa's main trading partners declined by only 4 per cent between the end of December 1997 and 22 May 1998. This depreciation was broadly attuned to the inflation differential between South Africa and its major trading-partner countries, implying a depreciation in the inflation-adjusted effective exchange rate of only 1,7 per cent from December 1997 to April 1998.

The rand came under severe downward pressure between mid-May and July 1998 amid general nervousness about financial stability in emerging markets. In addition, serious financial troubles surfaced in the Russian economy. Investors' sentiment was also negatively affected by unfounded rumours which fueled speculation against the rand. The nominal effective exchange rate of the rand accordingly declined by 13,5 per cent from 22 May to the end of June 1998.

The announcement at the beginning of July that the net open forward position of the Reserve Bank had increased sharply during June raised further concerns about the future stability of the rand, and was perceived by many market participants as running counter to the official position of the Bank that it intended to gradually reduce its oversold forward

### Exchange rates of the rand against emerging-market currencies



**Table 10. Exchange rates of the rand**

Percentage change

	31 Dec 1997 to 22 May 1998	22 May 1998 to 31 Aug 1998	31 Dec 1997 to 31 Aug 1998
Weighted average.....	-4,0	-21,4	-24,6
US dollar .....	-4,3	-21,4	-24,7
British pound .....	-2,8	-23,1	-25,2
German mark .....	-5,8	-21,1	-25,7
Japanese yen .....	-	-18,0	-18,0
Netherlands guilder.....	-5,7	-21,1	-25,6
Italian lira .....	-5,4	-21,0	-25,3
<b>Emerging markets</b>			
Malaysia.....	-6,4	-13,0	-18,6
Philippines.....	-9,7	-10,6	-19,2
Singapore .....	-6,6	-14,6	-20,2
Taiwan .....	-1,6	-18,4	-19,7

manufactured goods may not only contribute to the expected shrinking of the deficit on the current account of the balance of payments, but is also likely to promote a recovery in overall economic conditions in 1999 and 2000.

position in foreign currency. This inspired another round of speculation which caused the nominal effective exchange rate of the rand to decline by 10,6 per cent in the first six days of July 1998. The rand fell to record lows of R6,62 against the US dollar and R10,85 against the British pound before it recovered and stabilised somewhat during the remainder of July and the first three weeks of August.

From the end of 1997 to the end of August 1998 the average weighted value of the rand against the four major currencies declined by 24,6 per cent – roughly corresponding to a decline of 21,9 per cent over the whole of 1996. As indicated in Table 10, the rand also depreciated against a number of Asian currencies, thereby restoring to a significant extent the competitive edge forfeited when these currencies lost value in the second half of 1997.

The *inflation-adjusted effective exchange rate* of the rand, which had increased on average by 0,8 per cent in 1997, declined by 6,8 per cent from December 1997 to June 1998 as the fall in the nominal exchange value of the rand exceeded the inflation differential between South Africa and its main trading partners. The manufacturing sector could benefit from the fall in the real value of the rand, as it did following the depreciation of 1996, provided that its inflationary consequences are contained. Such a boost to exports of



## Monetary developments, interest rates and financial markets

### Money supply

The quarter-to-quarter annualised growth in the seasonally adjusted average value of the broadly defined money supply (M3) tapered off from 23,1 per cent in the fourth quarter of 1997 to 17,5 per cent in the first quarter of 1998 and 14,3 per cent in the second quarter. However, the slowdown in monetary growth becomes much less conspicuous when changes in M3 are measured over periods of twelve months.

The somewhat erratic changes from month to month in M3 during the first half of 1998 translated into changes over twelve months that were fairly volatile with an upward bias. The twelve-month growth rate decelerated, on balance, from 18,0 per cent in February 1998 to 16,1 per cent in May, but then gathered momentum to 19,4 per cent in June and 19,1 per cent in July. This was due, in part, to a general slowdown in year-on-year growth in the first half of 1997 (i.e. the statistical base for calculating year-on-year changes in 1998).

As shown in Table 11, the increases in the short-term components of M3 were considerably more prominent than changes in the medium- and long-term components during the first half of 1998. Attractive yields on call-money deposits encouraged increased

**Table 11. Changes over one month in deposit holdings of the private sector**

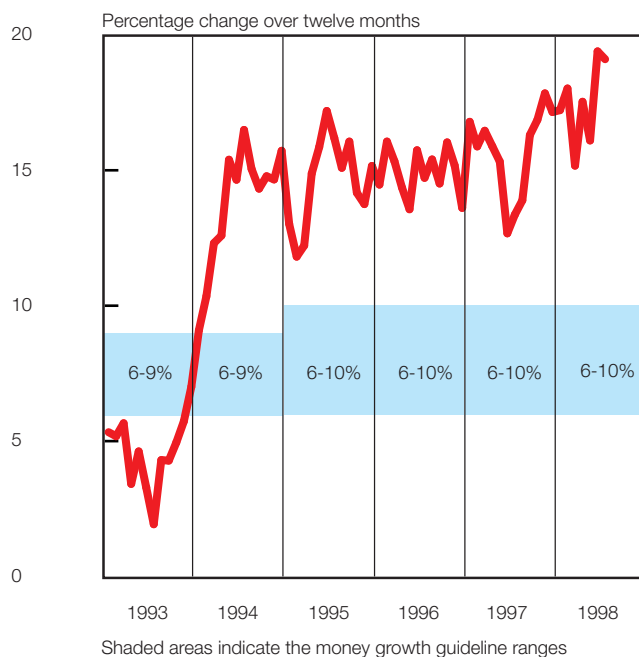
R billions

	Cheque and transmission	Other demand	Other short and medium term	Long term	Total
1998: Jan .....	-6,8	5,3	-0,3	1,6	-0,2
Feb .....	9,0	-2,7	3,6	2,2	12,1
Mar .....	0,0	-0,2	1,1	1,4	2,3
Apr.....	6,6	-1,3	1,8	1,0	8,1
May .....	-8,3	9,8	0,6	-0,2	1,9
Jun .....	6,8	12,3	-6,1	-1,8	11,2
Jul.....	-4,6	6,3	-1,7	-1,6	-1,6

holdings of this kind of deposits and also caused a shift from "other short- and medium-term deposits" as well as "long-term deposits" to "other demand deposits" in June 1998. Changes in the composition of asset portfolios during June 1998 could conceivably have contributed to the strong increase in "other demand deposits".

As a result of the preference for liquidity of private-sector deposit holders the growth rate in the narrower monetary aggregates substantially exceeded that of M3. For example, the rate of increase over twelve months in M1A reached a recent peak of 33,9 per cent in April 1998, before drifting downwards, on balance, to 22,1 per cent in July 1998. The twelve-month growth rate in M1 rebounded from a recent low of 14,9 per cent in March 1998 to 35,3 per cent in June 1998 and further to 40,6 per cent in July. (The increase in July 1998 was calculated from a relatively low base as M1 declined in absolute terms in July 1997.) The twelve-month growth rate in M2 declined from 19,1 per cent in February 1998 to 16,6 per cent in May, but

### M3 money supply

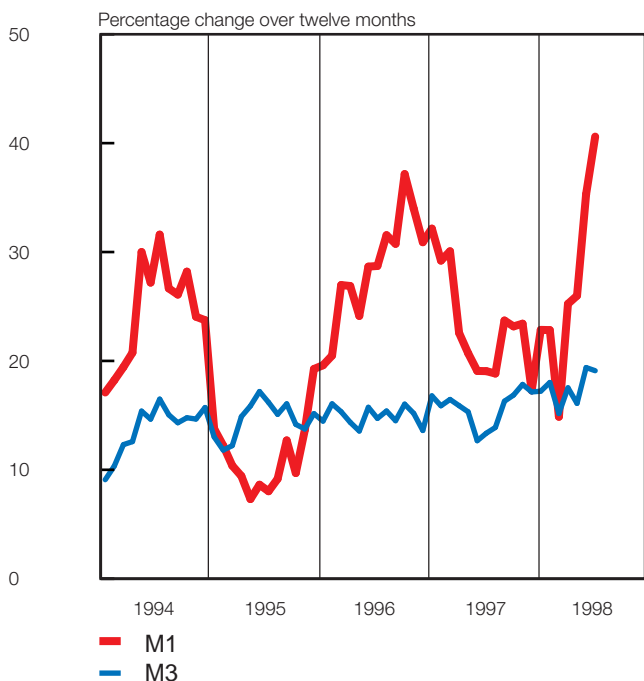


**Table 12. Growth in monetary aggregates over twelve months**

Per cent

	M1A	M1	M2	M3
1998: Jan .....	23,3	22,9	18,7	17,2
Feb .....	29,8	22,8	19,1	18,0
Mar .....	25,0	14,9	15,1	15,2
Apr.....	33,9	25,2	18,4	17,5
May .....	27,3	26,0	16,6	16,1
Jun .....	23,3	35,3	21,4	19,4
Jul.....	22,1	40,6	22,3	19,1

## Monetary aggregates



then bounced back to 21,4 per cent in June and 22,3 per cent in July 1998.

The increase in cheque and transmission deposits and other demand deposits accounted for no less than 93,9 per cent of the increase in M3 during the first seven months of 1998. Of the increase in the non-bank private sector's holdings of deposits with banks, as much as 91,1 per cent was placed by companies, close corporations and unincorporated businesses. Deposits held by individuals contributed 3,2 per cent to the increase in the private non-bank sector's deposit holdings with banks during this period. By contrast, deposits held by insurance companies and pension and provident funds actually declined in the first seven months of 1998.

The main counterpart, in an accounting or statistical sense, of the change in M3 during the first seven months of 1998 was credit extension to the domestic private non-bank sector. In fact, the increase in credit extended by banks to the private sector was R14,4 billion more than the increase in M3. In addition, net credit extension by banks to the government sector increased by an amount equivalent to 16,3 per cent of the overall increase in M3 in the first seven months of 1998. The impact that domestic credit extension had on growth in M3 was partially offset by a substantial decline in banks' net other assets, reflecting, among others, an increase in the capital and reserves of monetary institutions.

## Credit extension

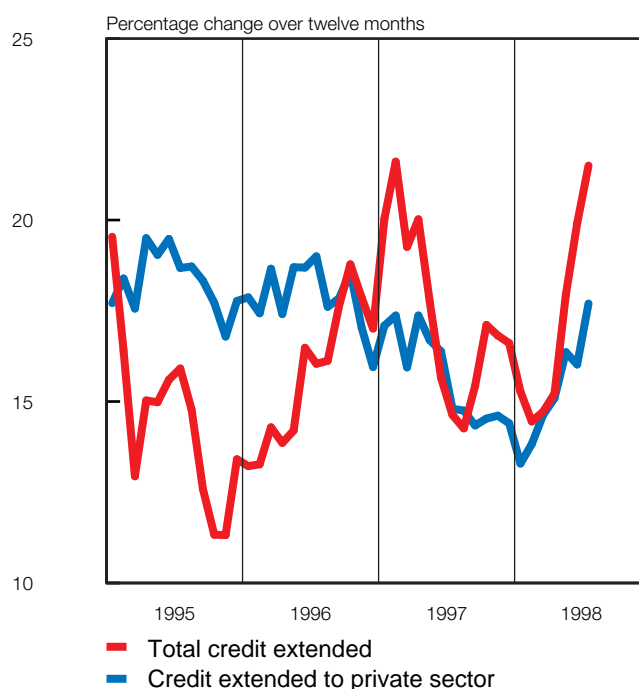
*Total domestic credit extension* by monetary institutions (i.e. total credit extension to the private non-bank sector plus net claims on the government sector) slowed down from a quarter-to-quarter seasonally adjusted annualised growth of 19,7 per cent in the fourth quarter of 1997 to 16,3 per cent in the first quarter of 1998, but then accelerated to 24,1 per cent in the second quarter. At first, credit extension to the private non-bank sector increased at rates of 11,2 per cent in the fourth quarter of 1997 and 14,4 per cent in the first quarter of 1998. These rates were lower than the corresponding growth in total credit extension. In the second quarter of 1998, however, the growth in credit extended to the private sector at 26,2 per cent surpassed the growth in total credit extension of 24,1 per cent.

The *rate of increase over twelve months* in total domestic credit extension also slowed down from 16,6 per cent in December 1997 to 14,7 per cent in March 1998, but then accelerated to 19,9 per cent in June and 21,5 per cent in July. The acceleration in July 1998 is partly explained by the decline in absolute terms in total credit extension which had occurred in July 1997 (the base for calculating year-on-year growth in July 1998).

A number of causes could be cited for the strong growth in credit extension to the private sector during the second quarter of 1998. These include

- the switching of trade financing from foreign to domestic sources of credit in view of the weakness of the rand;

## Credit extension by monetary institutions



- the increased volatility in financial asset prices and in the foreign-exchange market and the consequent opportunities for speculative transactions;
- some borrowing by businesses in financial distress to tide them over a period of relatively slack demand; and
- the capitalisation of interest arrears.

The monetary institutions' claims on the private sector increased by R48,5 billion during the first seven months of 1998. Among the constituent components of bank credit extended to the domestic private sector, the main contributions to overall credit growth from December 1997 to July 1998 came from "other loans and advances" which contributed 60,8 per cent and mortgage loans which contributed 24,9 per cent.

Measured over periods of twelve months, the growth in *other loans and advances* in the first seven months of 1998 fluctuated between 20,4 per cent in January and 29,7 per cent in July, consistently exceeding the growth in total credit extended to the private sector. As a result, "other loans and advances" as a percentage of total credit extended to the private sector increased from 35,5 per cent in December 1997 to 38,1 per cent in July 1998.

The twelve-month rate of increase in *mortgage advances*, in contrast to that of "other loans and advances", remained below the growth in total bank

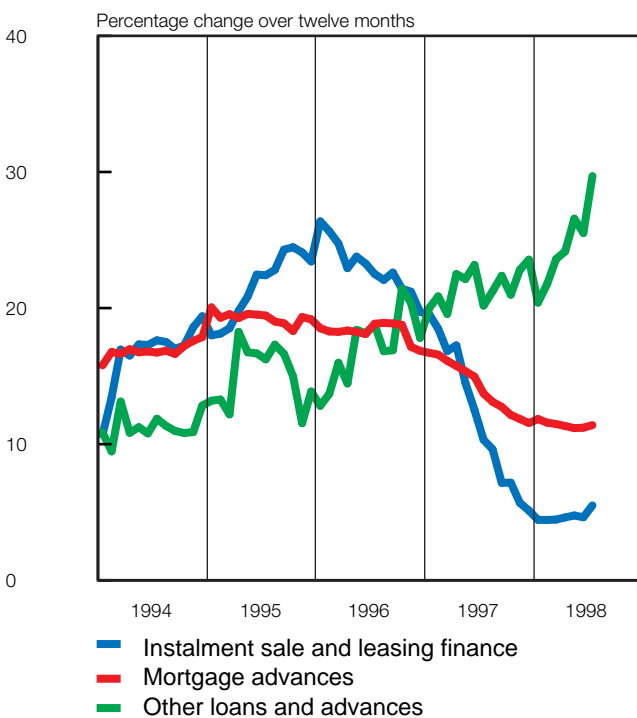
credit extension to the private non-bank sector during the first seven months of 1998. Measured over periods of twelve months the growth in mortgage advances fluctuated in a narrow range between 11,9 per cent in January 1998 and 11,2 per cent in May and June. With growth in total private-sector credit extension consistently exceeding 13 per cent over periods of twelve months, the share of mortgage advances in the overall stock of outstanding credit declined from 42,3 per cent in December 1997 to 40,5 per cent in July 1998.

The types of credit mostly used by households increased at fairly modest rates over the first seven months of 1998. For example, instalment sale credit increased at rates over twelve months of between 9,7 per cent and 8,5 per cent. Because of the slow growth in credit extended to the household sector, the greater part of credit to the private sector was absorbed by the corporate sector; the share of the corporate sector in total credit extension to the private sector increased from 42,1 per cent in December 1997 to 44,4 per cent in March 1998 and 46,0 per cent in June.

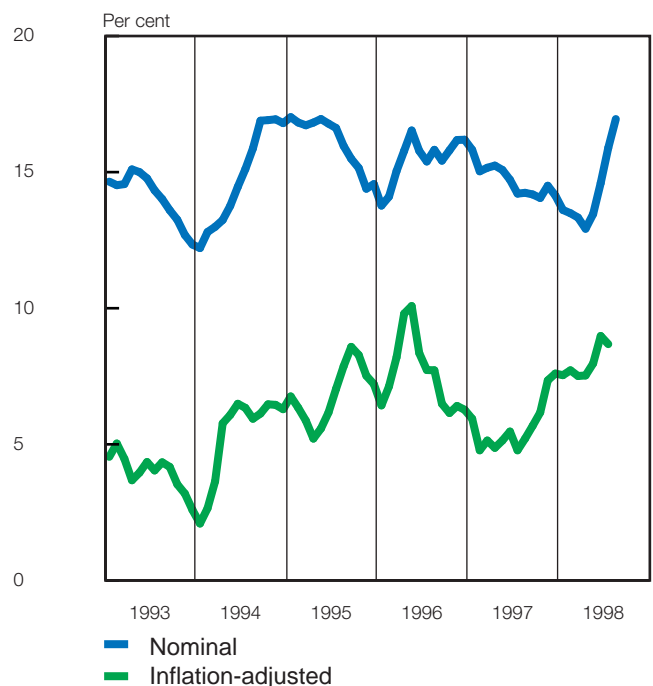
### Interest rates and yields

The *yield on long-term government bonds* drifted lower in the first four months of 1998 amid growing expectations of a further easing of monetary conditions following the steady decline in inflation, a further strengthening in fiscal policies and the continuation of weak overall economic conditions. The *monthly average yield*

### Credit extended to private sector by type of credit



### Yield on long-term government bonds



on long-term government bonds accordingly fell to 12,9 per cent in April 1998, from a yield of 16,2 per cent posted as recently as December 1996.

A sudden reversal in the net inflow of non-resident portfolio investment to the secondary bond market in the second quarter of 1998 halted the downward movement in bond yields. The upward adjustment in bond yields that followed was pushed even higher by the tightening of monetary conditions, which raised short-term interest rates by about 6½ percentage points in less than three months. By 6 July 1998 the *daily average yield* on long-term government bonds had risen to 16,44 per cent from a low of 12,67 per cent on 17 April. This strong rise coincided with heavy sales of bonds by non-resident investors who had been unnerved by the financial turbulence in Asian emerging markets and in the Russian Federation.

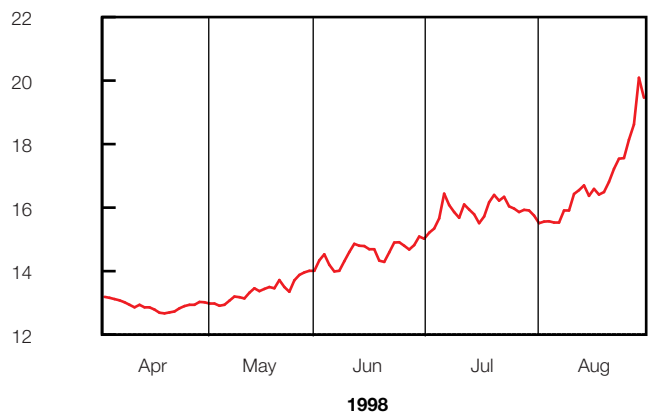
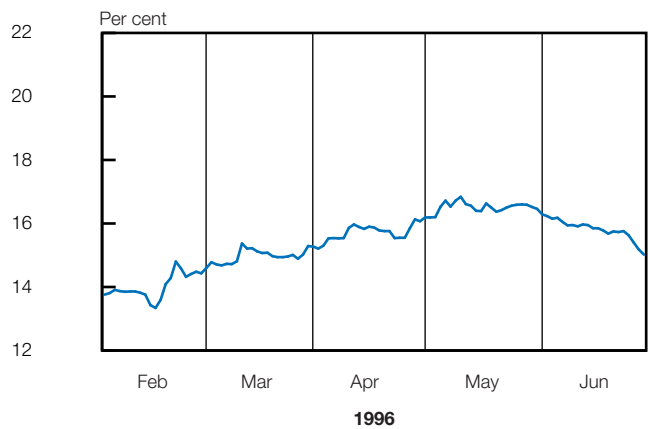
The volatility in bond trading calmed down somewhat in July 1998 and from the sixth of that month, bonds were traded within a range of less than 100 basis points. The average yield on long-term government bonds rose to 15,9 per cent in July 1998. However, renewed nervousness about the Russian financial situation resulted in the average yield on long-term government bonds increasing to 16,9 per cent in August 1998.

The overall increase in the daily average yield on long-term government bonds of 742 basis points, between 17 April 1998 and 28 August exceeded by a substantial margin the rise of 350 basis points recorded between February and May 1996 when the rand was also subjected to repeated speculative attacks. At the same time, the close correspondence that had existed between changes in the rand-dollar exchange rate and movements in bond yields from February to May 1996 emerged again in the months from May to July 1998.

The decline in consumer price inflation, measured over twelve months, was greater than the decrease in the monthly average yield on long-term government bonds, thus increasing the *inflation-adjusted or real bond yield* from an average level of 5,7 per cent in 1997 to 7,6 per cent in the first four months of 1998. By contrast, bond rates were more flexible than consumer price inflation during the recent period of turbulence in financial markets, raising the inflation-adjusted yield on long-term government bonds to 8,7 per cent in July 1998.

Before May 1998 there had been a steady fall in inflation, the rand was relatively stable in the foreign-exchange market, output growth remained generally weak, and the strengthening of international reserves created monetary conditions that permitted a decline in money market interest rates. The gradual easing of monetary conditions from the beginning of 1997 was abruptly reversed in May 1998 when the currency crisis began. *Money market interest rates*, which generally had been declining from the beginning of 1997, turned around and increased in a short period to levels that were higher than those at the end of 1996. For example, the rate on bankers' acceptances with a maturity of three

### Comparison of bond yields in 1996 and 1998



months, which had been at 17,00 per cent at the end of December 1996, increased sharply from 12,97 per cent on 13 May 1998 to 14,95 per cent at the end of May and 19,55 per cent at the end of July. At the end of August 1998 this rate stood at 21,60 per cent.

Since the beginning of the currency crisis the *repurchase rate of the Reserve Bank* has risen more than 700 basis points and on 31 August 1998 stood at 21,85 per cent. The Reserve Bank's marginal lending rate, which had initially been set at a percentage point higher than the repurchase rate, was increased to widen the margin over the repurchase rate to 20 percentage points, thus containing a severe interest rate penalty for accessing the Marginal Lending Facility.

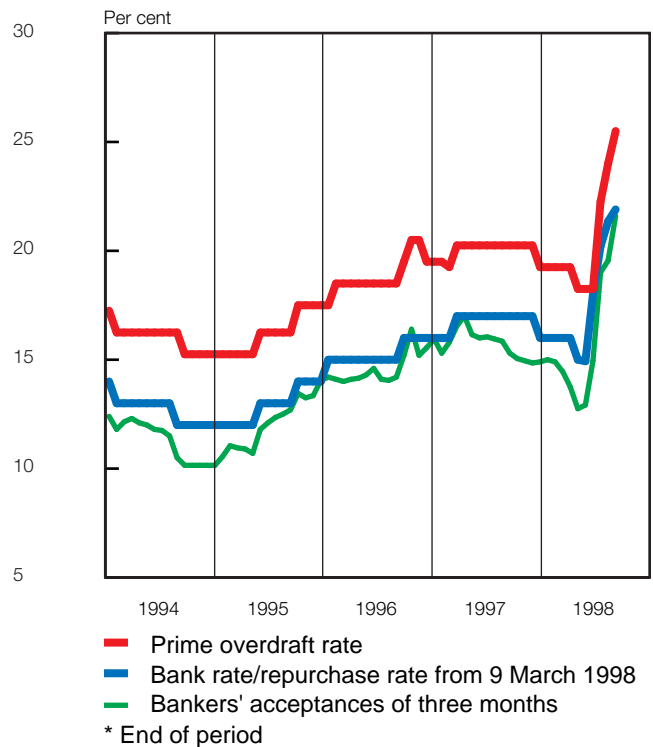
The repurchase rate showed wide fluctuations in June 1998, varying between a low of 17,00 per cent on 12 June and a high of 23,99 per cent on 22 June. The gyrations of the repurchase rate were essentially caused by some overreaction by market participants to Reserve Bank signals with the daily supply of liquidity through repurchase transactions. When the uncertainties about the Bank's signalling mechanism were removed, the daily auction system settled down and

the repurchase rate became far less volatile. From early July 1998, the repurchase rate drifted gradually higher from 21,21 per cent on 10 July to 21,37 per cent on 18 August. This rate then remained steady until 27 August before renewed volatility in the bond and share markets caused it to move higher to 21,85 per cent on 28 August 1998.

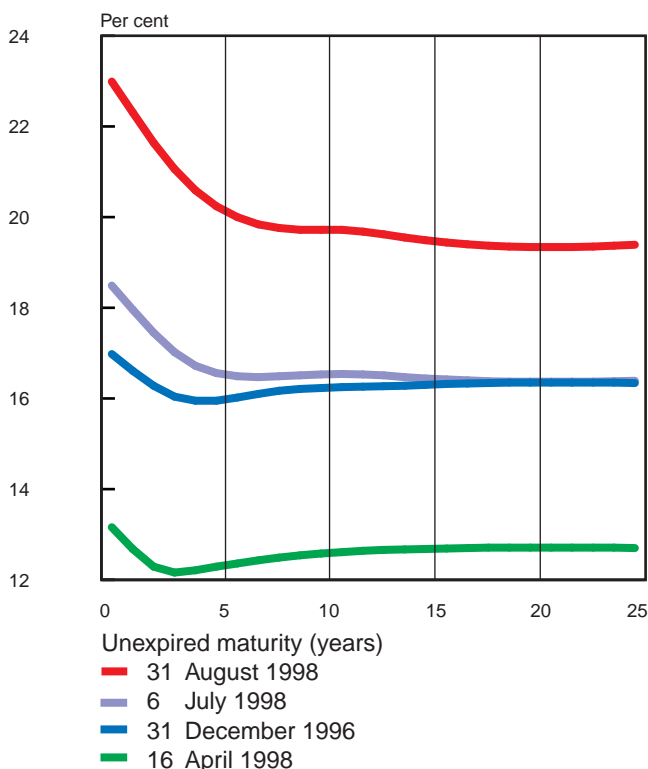
The relatively flat yield curve with a slight inversion over maturities of less than three years generally moved downwards from the beginning of 1997 until 16 April 1998. With the subsequent upward correction of yields over the full range of maturities, the yield curve shifted higher to a level on 6 July 1998 that was approximately similar to that at the end of December 1996. The yields on money market instruments and other securities with a maturity of less than three years rose more than the yields on long-dated bonds from April to August 1998, causing a more steeply inverted slope in the curve over its short- to medium-term segment. This was essentially a reflection of tight monetary conditions, whereas the generally higher level of the yield curve reflected heightened uncertainties and nervousness about investment in emerging markets, and perhaps a temporary upward adjustment of expectations about inflation.

The Reserve Bank lowered *Bank rate* by 100 basis points to 16 per cent in October 1997. Official Reserve Bank rates were lowered further to 15 per cent when the

### Interest rates\*



### Yield curves



new daily repurchase-based auction system was introduced on 9 March 1998. On both occasions the private banks responded by lowering their *prime overdraft rates* by one percentage point. From 9 March 1998 the repurchase rate was determined in the daily auction for Reserve Bank money. Following the increases in the average repurchase rate, which started in May 1998, the banks raised their prime overdraft rates from 18,25 per cent to 20,25 per cent on 10 June and to 22,25 per cent at the end of that month. Further increases during July and August 1998 took the prime overdraft rate of the banks to 24 per cent at the end of July and 25,5 per cent at the end of August.

The *predominant rate on mortgage loans* closely followed the changes in the prime overdraft rate of banks. The downward movement in mortgage rates from 20 per cent in October 1997 to 18 per cent in March 1998 was reversed when monetary conditions tightened during the second quarter of 1998. Although some banks increased their mortgage rates already in June 1998, the predominant rate rose to 20 per cent only in July and further to 22 per cent in August. Banks also abandoned the practice of charging uniform rates, causing the dispersion between mortgage rates charged by individual banks to increase noticeably. Some banks also suspended the practice of offering prospective bond holders the option of fixed mortgage rates for a limited period.

**Table 13. Interest rates and yields**

Per cent

	Monthly average yield on long-term government bonds		Predominant rate on	
	Nominal	Inflation-adjusted	Mortgage loans	12-month fixed deposits
1996: Dec.....	16,2	6,3	20,0	14,5
1997: Jan.....	15,8	5,9	20,0	14,5
1998: Jan.....	13,6	7,5	19,0	13,5
Feb.....	13,5	7,7	19,0	13,5
Mar.....	13,3	7,5	18,0	12,5
Apr.....	12,9	7,5	18,0	12,5
May.....	13,5	8,0	18,0	12,5
Jun.....	14,6	9,0	18,0	12,5
Jul.....	15,9	8,7	20,0	14,5
Aug.....	16,9	...	22,0	16,5

The predominant retail rate on twelve-month fixed deposits with banks displayed a pattern similar to that of mortgage rates. It declined, at first, from 15,0 per cent in October 1996 to 12,5 per cent in March 1998, but then increased to 14,5 per cent in July and 16,5 per cent in August.

The standard interest rate applicable to loans granted from the State Revenue Fund was raised in three steps from 13,0 per cent in May 1998 to 15,75 per cent on 1 August. The maximum permissible finance charges rates, as laid down in the Usury Act, remained unchanged from March 1997 at 29 per cent per annum in respect of money lending, credit and leasing transactions of more than R6 000 but less than R500 000 and 32 per cent for amounts up to R6 000. These rates were then raised to 33 per cent and 36 per cent on 21 August 1998, respectively.

### Money market

Money market conditions eased considerably in the first quarter of 1998. Due to the substantial surplus on the overall balance of payments, the Reserve Bank was an active purchaser of foreign currency during the first quarter of 1998. This intervention by the Bank alleviated undue upward pressure on the exchange value of the rand, but also increased liquidity in the domestic money market.

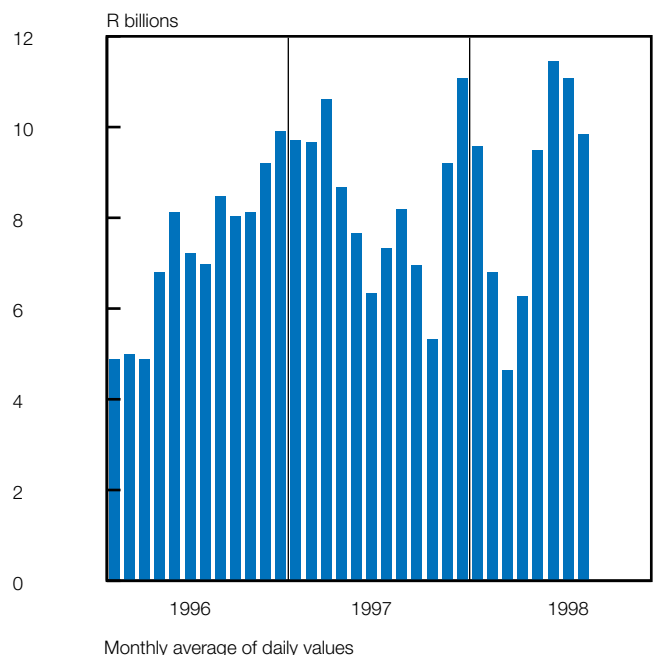
The Reserve Bank's intervention in the market for foreign exchange occasioned an increase in the net foreign assets of the Bank by an amount of R6,7 billion

in the first quarter of 1998. The amount of liquidity which the Bank had to provide to the private banks, formerly through the accommodation window and later through the repurchase and marginal lending facility accordingly fell from R10,2 billion at the end of December 1997 to R4,4 billion at the end of March 1998. The total amount of liquidity provided by the Bank at the end of March 1998 consisted of outstanding loans in terms of repurchase transactions amounting to R3,6 billion and loans through the marginal lending facility of R0,2 billion, while banks had withdrawn an amount of R0,6 billion against their cash reserve balances.

As already indicated, non-residents' net purchases of long-term government bonds turned into net sales in the course of the second quarter of 1998. The changed situation created a decline in the supply of foreign exchange in the market, thus exerting downward pressure on the rand. The market threatened to become excessively volatile, therefore prompting the Reserve Bank to sell foreign currency in an attempt to ensure that orderly trading conditions would continue to prevail. As a result, the Bank's net holdings of foreign assets fell by R12,7 billion over the quarter, while at the same time the overall liquidity requirement of the banks in the domestic money market rose sharply.

By assisting the money market through foreign exchange swap transactions to an amount of R4,8 billion in the second quarter of 1998, the Reserve Bank

### Total liquidity provided by Reserve Bank



managed to contain the provision of liquidity to a total amount of R12,2 billion at the end of June. This liquidity requirement was satisfied through outstanding repurchase transactions to an amount of R11,0 billion and through net withdrawals, by banks, of R1,2 billion against their required reserve accounts.

From the middle of May 1998 the Reserve Bank maintained a cautious position by consistently providing through the auction system less liquidity to the market than the estimated requirement. During May 1998 about 60 per cent of the private banks' estimated daily liquidity requirement was satisfied through the auction system, but this increased to about 93 per cent in June, 98 per cent in July and 99 per cent in August. The absolute amount of the under-provision of liquidity needs was increased from R100 million, to R500 million on 28 August 1998, leading to a rise of 48 basis points in the Reserve Bank's repurchase rate.

The total liquidity provided by the Reserve Bank declined to R10,3 billion at the end of August 1998. Outstanding repurchase transactions amounted to R9,8 billion while an amount of R0,5 billion was withdrawn from the private banks' required reserve accounts with the Reserve Bank.

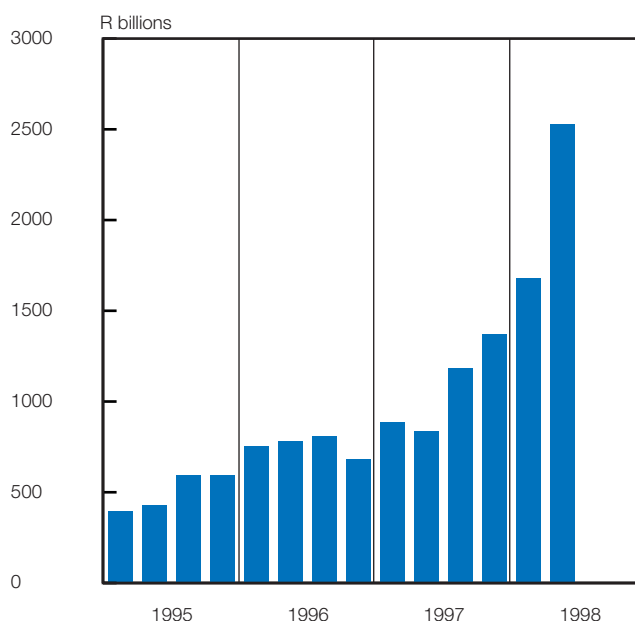
### Bond market

*Net issues of fixed-interest securities by public-sector entities* declined from R7,5 billion in the fourth quarter of 1997 to R3,6 billion in the first quarter of 1998 and amounted to R5,6 billion in the second quarter. This meant that the net issuance of public-sector fixed-interest securities in the first half of 1998 was about 40 per cent less than in the corresponding period of the previous year. Government bonds with a nominal value of R15,4 billion were auctioned and allotted in the first five months of fiscal 1998/99, leaving some R15,6 billion still to be funded in the remainder of fiscal 1998/99.

*Private-sector borrowers* were inactive in the domestic primary bond market and mobilised only R30 million in the first half of 1998 through issuing fixed-interest securities. Similarly, *government and other domestic borrowers* abstained completely from accessing the international primary bond markets by means of foreign-currency-denominated securities. The supply of rand-denominated bonds by South African issuers in the eurobond market also dried up in the second quarter of 1998, after domestic parastatal organisations had raised R3,1 billion in the first quarter. Heightened uncertainty about future movements in the exchange rate of the rand was probably the prime motivation for the absence of South African borrowers from the international debt markets.

The negative turn in investor sentiment following the deterioration of financial conditions in emerging markets and the general decline in asset prices caused turnovers in the secondary bond market to rise to

### Turnover in the secondary bond market



unprecedentedly high values in the first eight months of 1998. The value of bonds traded on the Bond Exchange of South Africa consequently increased from an average quarterly turnover of R1,1 trillion in 1997 to R1,7 trillion in the first quarter of 1998, R2,5 trillion in the second quarter and R1,9 trillion in July and August.

The attitude of *non-resident investors* towards the South African bond market changed radically during the first eight months of 1998; net purchases of bonds to the value of R16,3 billion in the first four months of the year were then neutralised by net sales to the value of R18,9 billion in the four months from May to August. This was largely a reflection of emerging-market problems, exacerbated by the sharp rise in funding

**Table 14. Bond and share market activity**

	Secondary market	
	Bonds traded	Shares traded
1997: 1st qr.....	883	41
2nd qr.....	834	51
3rd qr.....	1182	59
4th qr.....	1370	56
<b>Year .....</b>	<b>4269</b>	<b>207</b>
1998: 1st qr.....	1675	67
2nd qr.....	2528	91

costs in the domestic credit market and the decline in the demand for South African bonds following the dwindling of eurorand bond issues by non-resident organisations.

Events during the second quarter have demonstrated that although macroeconomic and financial policies may be sound, the country is not immune to adverse changes in investor confidence and large-scale movements of international capital. Sound monetary policy should not be seen as the sole defence mechanism against such changes in sentiment. Establishing lasting financial stability would also require measures that would make the economy more resilient to external shocks and attractive to sustainable long-term capital inflows which do not create debt.

### Share market

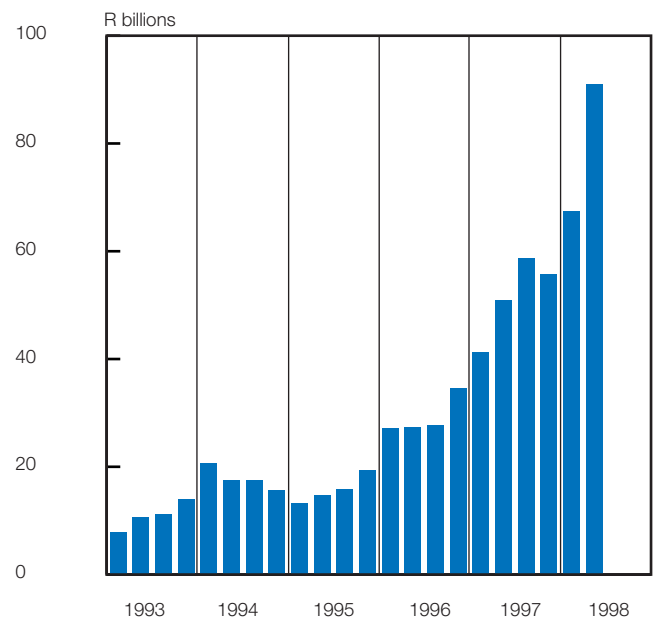
Changes in the value of *capital raised in the primary share market* revealed a growing preference for equity financing rather than debt accumulation: the total value of capital raised through share issues more than doubled from R9,3 billion in the first quarter of the year to R20,3 billion in the second quarter. A further amount of R13,4 billion was raised in July 1998.

Funds obtained through *rights issues of ordinary shares* increased from R1,6 billion in the first quarter of 1998 to R10,6 billion in the second quarter. It amounted to R0,5 billion in July 1998.

Turnover in the *secondary share market* increased from a quarterly average value of R51,7 billion in 1997 to R67,5 billion in the first quarter of 1998 and R91 billion in the second quarter. In the first two months of the third quarter the monthly average turnover values rose further to R31,5 billion compared with a monthly average turnover value of R30,3 billion in the second quarter.

The secondary share market was underpinned in the first eight months of 1998 by strong demand from *non-resident investors* who continued to be net buyers of equity in the months from May to August, despite the negative sentiment towards emerging markets and

### Value of shares traded on the stock exchange



the turbulence in the foreign-exchange market. The continuation of net purchases of equity by non-residents at a time when they were net sellers of debt instruments, may indicate that part of non-resident bond investment was for speculative purposes.

Non-residents' net purchases in the share market amounted to R33,7 billion in the first eight months of 1998, compared with R17,3 billion in the corresponding period of the previous year and R26,2 billion in the whole of 1997. The turmoil in Asian financial markets and attractive price-earnings ratios apparently persuaded foreign investors to continue to increase the weighting of South Africa in their emerging-market portfolios. The persistence of non-resident equity purchasing was primarily responsible for a net inflow of portfolio capital through the bond and share markets, amounting to R31,0 billion in the first eight months of 1998, compared with R34 billion in the corresponding period of the previous year.

The *monthly average price level of all classes of shares*, which rebounded strongly in the first five months of 1998 following a steady decline in the second half of 1997, fell sharply from May to August as monetary conditions tightened and the expected onset of economic recovery was postponed. The average monthly level of share prices rose by 32,3 per cent from December 1997 to an all-time high in May 1998, but subsequent events brought share prices down to an average monthly value in August that was 0,7 per cent lower than in December 1997. When valued in terms of US dollars, the average level of share prices fell by 23 per cent from December 1997 to August 1998.

**Table 15. Non-resident transactions in the bond and share markets**

R billions

	Net purchases		
	Bonds	Shares	Total
1997: <b>Year</b> .....	<b>14,8</b>	<b>26,2</b>	<b>41,0</b>
1998: 1st qr.....	10,1	12,8	22,9
2nd qr.....	-0,8	14,1	13,3
Jul .....	-5,4	4,4	-1,0
Aug.....	-6,6	2,4	-4,2
<b>Year-to-date...</b>	<b>-2,7</b>	<b>33,7</b>	<b>31,0</b>



## Prices of all classes of shares



The sharp increase in share prices in the first five months of 1998 was driven by the *financial sector*, where share prices rose by 36 per cent. Consolidation and restructuring within the sector and firm growth in earnings led to a general reassessment of the prospects for the financial sector. These expectations drove the equity values of financial institutions higher.

With the outbreak of the financial crisis in emerging markets the monthly average value of the share price index of financial institutions fell by 25 per cent from May to August 1998. Although the prices of *gold-mining shares* rose sharply in the first five months of 1998, the monthly average price level of this class of shares followed a relatively flat trajectory during the first quarter. From March 1998 to August the monthly average all-gold price index increased by 2,5 per cent as the depreciation of the rand and the benefits derived from continuous rationalisation improved the prospects of the industry. Certain mines which had faced the possibility of closure were relieved for a time by the fall in the external value of the rand.

As indicated in Table 16, the monthly average *dividend yield* on all classes of shares and the *earnings yield* for non-gold-mining shares mirrored the broad trend in share prices during the first eight months of 1998. Both these aggregates declined sharply in the first five months of 1998, but increased in the ensuing months to August. Closely attuned to these move-

**Table 16. Yields and price ratios**

	Dividend yield Per cent	Earnings yield* Per cent	Price- earnings ratio*
1998: Jan .....	2,70	7,62	13,13
Feb .....	2,43	6,93	14,43
Mar .....	2,35	6,53	15,31
Apr .....	2,15	5,95	16,81
May .....	2,15	5,91	16,91
Jun .....	2,33	6,79	14,73
Jul .....	2,37	6,82	14,67
Aug.....	2,81	8,22	12,17

\* Excluding gold-mining shares

ments, the price-earnings ratio of all classes of non-gold-mining shares increased from 13,1 in January 1998 to 16,9 in May, before falling back to 12,2 in August.

## Market for derivatives

The high level of activity and price volatility in the underlying securities markets in the first eight months of 1998 found a response in the formal derivatives markets. The turnover of *futures contracts* and *options on futures contracts* increased from a quarterly average of 2,9 million contracts in 1997 to 4,8 million contracts in the first quarter of 1998, but then fell back to 3,6 million contracts in the second quarter – unlike the turnovers in the underlying securities markets which scaled new heights in the second quarter. The average monthly turnover in July and August 1998 at 1,2 million contracts was more or less the same as the comparable statistic for the months from April to June.

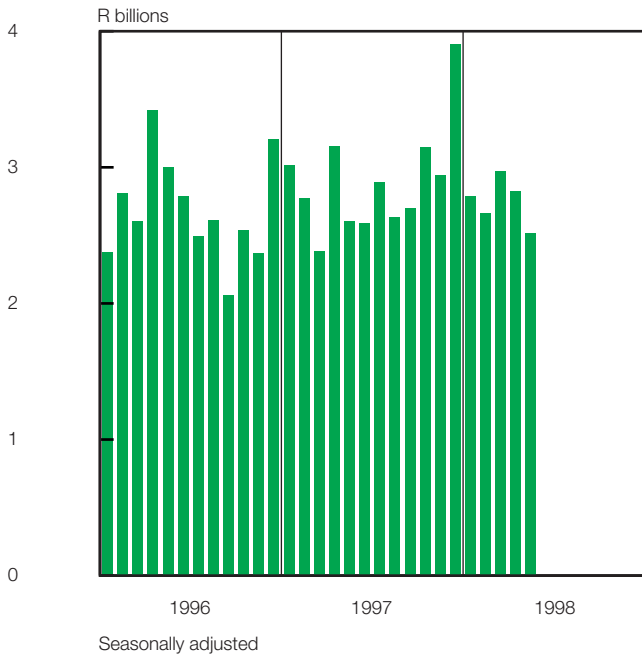
The number of *equity options contracts* traded increased from 50 450 in the first quarter of 1998 to 60 370 in the second quarter, followed by 30 590 contracts traded in July and August. The number of transactions in *warrants* decreased slightly from 273 million in the first quarter of 1998 to 269 million in the second quarter, but increased to 347 million in July and August. Trading in *commodity futures contracts* and *options on such futures contracts* increased from 14 410 contracts in the first quarter of 1998 to 20 378 in the second quarter and 16 775 in July and August.

## Real-estate market

Activity in the *real-estate market* remained sluggish during most of 1997, with only a modest increase in the value of transactions in real estate in the fourth quarter – from an average value of R8,2 billion in the first three quarters to R9,9 billion in the fourth quarter. The real-estate market suffered another setback in the first half of 1998 when the general downward movement in mortgage rates, which was widely

## Public finance

### Value of real-estate transactions



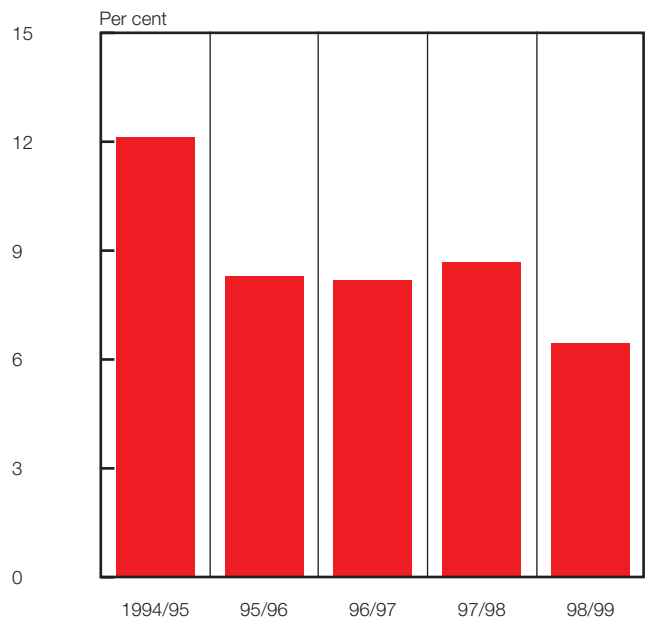
expected to continue for some time, abruptly changed course. The monthly average value of real-estate transactions accordingly declined from R2,8 billion in the first quarter of 1998 to R2,7 billion in April and May.

### Public-sector borrowing requirement

The *public-sector borrowing requirement* (i.e. the deficit before borrowing and debt repayment of the consolidated Central Government, provincial governments, local authorities and non-financial public enterprises and corporations) amounted to R10,2 billion in the first quarter of fiscal 1998/99 – R2,4 billion less than in the first quarter of fiscal 1997/98. As a ratio of gross domestic product, the public-sector borrowing requirement declined noticeably from 8,7 per cent in the first quarter of fiscal 1997/98 to 6,5 per cent in the first quarter of fiscal 1998/99. This ratio was substantially lower than the average ratio of 9,2 per cent observed in the first quarters of the preceding five fiscal years.

The improvement in the public-sector borrowing requirement was mainly the result of a reduction in the *borrowing requirement of general government* (i.e. the deficit of the consolidated Central Government, provincial governments and local authorities) from R11,7 billion in the first quarter of fiscal 1997/98 to R9,7 billion in the first quarter of fiscal 1998/99. The financial balances of the *provincial governments* in particular, showed a meaningful improvement; although the provincial governments still had an aggregate deficit of R1,0 billion in the first quarter of

### Public-sector borrowing requirement as a ratio of gross domestic product\*



\*April to June of each fiscal year

fiscal 1997/98, this was converted into an aggregate surplus of R3,8 billion in the first quarter of 1998/99. The improvement in the financial position of the provincial governments came from increased transfers of funds from the national government and a sharp reduction in the provinces' expenditure on capital goods. The sounder financial position of the provincial governments allowed them to increase their deposits with private banks from R2,4 billion at the end of March 1998 to R3,6 billion at the end of June and to reduce their combined bank indebtedness from R3,8 billion to R1,2 billion over the same period.

The improvement in the borrowing requirement of the provincial governments was partly counteracted by a widening of the financial shortfall of the *Main Budget* by R2,3 billion from the first quarter of fiscal 1997/98 to the first quarter of fiscal 1998/99. This increase in the borrowing requirement of the national government was closely related to the funds transferred to the provincial governments and to a decline in the proceeds from sales of strategic oil reserves.

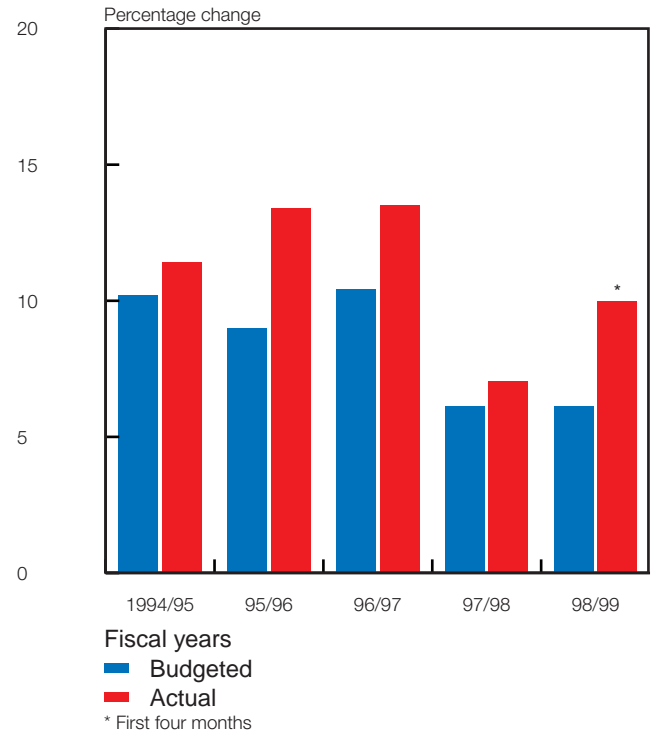
Despite the slight widening of the financial shortfall in the Main Budget, government continues to place high priority on fiscal prudence and remains committed to the budget deficit targets enunciated in GEAR. The focus of fiscal policy is still on reprioritising expenditure, while limiting revenue to a maximum of 25 per cent of gross domestic product. The budget process was also strengthened by the implementation of the Medium Term Expenditure Framework which has extended the horizon of fiscal planning from one to three years.

### Exchequer account

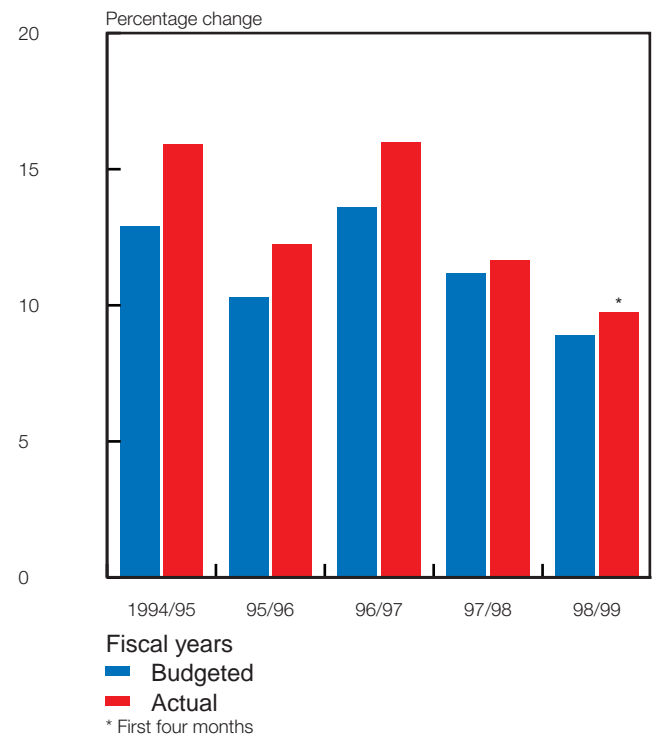
*Exchequer issues* to national government departments (adjusted to reflect cash flows) were 8,4 per cent higher in the first quarter of 1998/99 than in the first quarter of 1997/98. This increase was some 4,9 percentage points lower than the average year-on-year rate of increase of 13,3 per cent in the first quarter of the five preceding fiscal years, but 2,3 percentage points higher than the increase of 6,1 per cent envisaged in the Budget of the national government for the current fiscal year. As a ratio of gross domestic product, Exchequer issues to government departments amounted to 32,3 per cent in the first quarter of fiscal 1998/99 – almost equal to the ratio of 32,4 per cent recorded in the corresponding quarter of the previous fiscal year.

If Exchequer issues in July 1998 are also taken into consideration, the year-on-year increase in the first four months of fiscal 1998/99 comes to 10,0 per cent. High growth in expenditure by the departments of Health, Education and Finance, all of which contributed substantially to the transfer of funds to the provincial governments, gave impetus to the comparatively faster growth in Exchequer issues in the first four months of 1998/99.

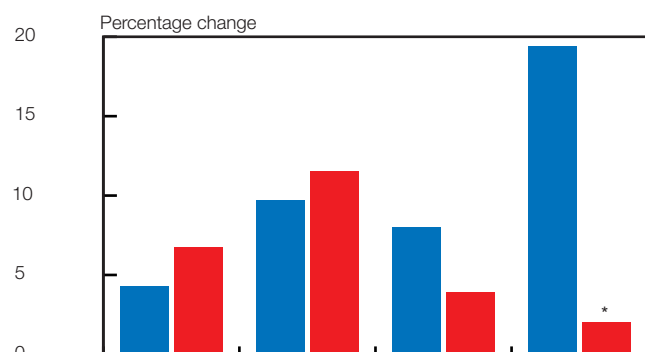
### Budgeted and actual Exchequer issues to government departments



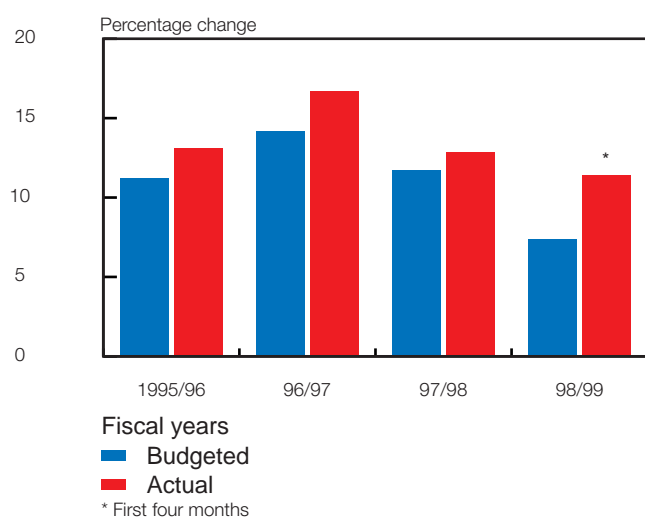
### Budgeted and actual Exchequer receipts



### Budgeted and actual customs and excise duties



### Budgeted and actual inland revenue



*Exchequer receipts* (excluding extraordinary receipts) were 7,6 per cent higher in the first quarter of fiscal 1998/99 than in the corresponding period of fiscal 1997/98. However, this increase was lower than the budgeted increase of 8,9 per cent for fiscal 1998/99 as a whole. As a ratio of gross domestic product, Exchequer receipts declined slightly from 23,5 per cent in the first quarter of fiscal 1997/98 to 23,2 per cent in the first quarter of fiscal 1998/99.

When comparing Exchequer receipts in the first four months of fiscal 1998/99 with those in the first four months of fiscal 1997/98, growth over one year has strengthened to 9,7 per cent, which is higher than the budgetary projections for the full fiscal year. A strong improvement in revenue receipts from customs and excise duties in July 1998, transforming a year-on-year decline of 6,5 per cent in the first three months of fiscal 1998/99 into a year-on-year increase of 2,0 per cent in the first four months, was primarily responsible for the elimination of arrears in aggregate revenue collections.

**Table 17. Percentage increase in Exchequer receipts in fiscal 1998/99**

Revenue source	Budgeted increase: fiscal year	Realised increase: first four months of fiscal year
Customs and excise duties .....	19,4	2,0
Inland revenue.....	7,4	11,4
Total Exchequer receipts.....	8,9	9,7

Despite the strong improvement in July, revenue from customs and excise duties still fell short, by a substantial margin, of the projected growth of 19,4 per cent for this source of revenue in the fiscal year as a whole. The lower-than-expected customs and excise duties were due to an underestimate of the negative effects of tariff reform on revenues.

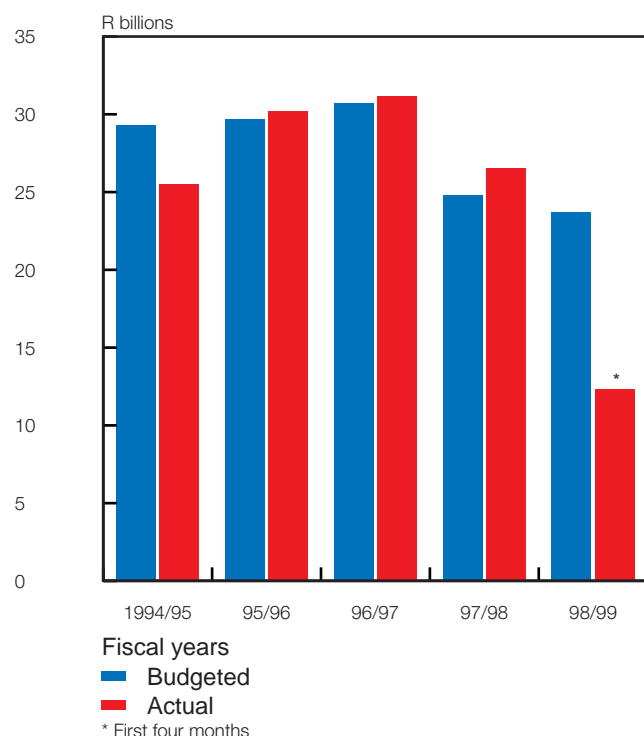
The shortfall of revenue from customs and excise duties was more than compensated for by solid increases in *inland revenue collections*, which increased at a year-on-year rate of 11,8 per cent in the first quarter of fiscal 1998/99, compared with a budgeted increase of 7,4 per cent for the fiscal year as a whole. The major contributions to this increase were made by the proceeds from value-added tax which increased at a year-on-year rate of 17,8 per cent, and receipts from income tax, which increased at a year-on-year rate of 16,0 per cent in the first quarter of fiscal 1998/99. An improvement in the collection of income tax in arrears and success in broadening the tax base to incorporate taxpayers who had previously succeeded in escaping the tax net, resulted in additional revenues for the national government.

Exchequer issues of R51,2 billion and receipts of R36,8 billion resulted in an *Exchequer deficit before borrowing and debt repayment* in the first quarter of fiscal 1998/99 of R14,4 billion, which was equivalent to 60,7 per cent of the budgeted deficit of R23,7 billion for the year as a whole. As a percentage of gross domestic product, the deficit came to 9,1 per cent in the first quarter of fiscal 1998/99; compared with 8,9 per cent which had been recorded in the first quarter of the previous fiscal year.

The realisation of a surplus of R2,0 billion on the Exchequer account in July 1998 brought the *Exchequer deficit before borrowing and debt repayment* down to R12,3 billion in the *first four months* of fiscal 1998/99. This deficit was financed as indicated in Table 18.

Long-term government bonds issued in the domestic capital market remained the principal means of financing government's deficit, showing issues of new debt amounting to R12,2 billion during the first four months of fiscal 1998/99. Issues of Treasury bills

### Budgeted and actual Exchequer deficit

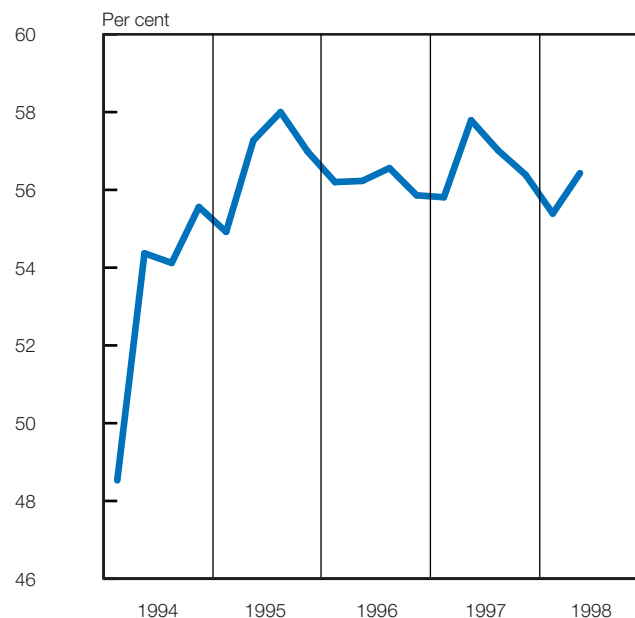


contributed an amount of R2,6 billion, whereas the sale of state assets such as the partial privatisation of the South African Airports Company and the sale of strategic oil stocks added a further R1,8 billion to the financing of the deficit. Notwithstanding the higher capital market interest rates, the discount on new

**Table 18. Financing the Exchequer deficit**

	R billions
Government stock (including discount) .....	12,2
Treasury bills .....	2,6
Extraordinary receipts .....	1,8
Foreign loans .....	0,3
Transfer from IMF account .....	-0,3
Other financing .....	-0,2
Changes in available cash balances .....	-2,4
Cash balances at the Reserve Bank .....	0,1
Cash balances at banks .....	-2,5
Total financing .....	14,0
Less: Discount on new government stock .....	-1,7
<b>Total net financing .....</b>	<b>12,3</b>

### Total government debt as a ratio of gross domestic product



government stock at R1,7 billion was lower than the discount of R1,9 billion in the first four months of fiscal 1997/98.

Total government debt increased from R336,2 billion at the end of March 1998 to R353,2 billion at the end of July. Apart from the need to finance the deficit on the Exchequer account, government debt was also raised by the higher rand value of outstanding foreign-currency denominated debt and some advanced borrowing to accumulate cash balances in anticipation of the large interest payments due towards the end of August. At the end of June 1998 total government debt amounted to 56,4 per cent of gross domestic product, compared with 57,8 per cent a year earlier.

The Inherited Debt Relief Bill was recently tabled in Parliament as Act 82 of 1998. This Act will allow the Minister of Finance to borrow an amount of R936,1 million in the current fiscal year for the purpose of discharging the debts owed by the former regional structures and uncovered only subsequent to the closure of accounts on 31 March 1995.

# The cost of inflation

by M.M. Smal<sup>1)</sup>

## 1. Introduction

Inflation undermines the role of money as a unit of account and as a monetary standard. This contrasts with most other activities where, once a standard is chosen, every effort is made to ensure that it is maintained (Konieczny, 1994). Inflation creates confusion because, while it is easy to recognise that one rand buys fewer goods and services, it is much more difficult to determine what it *is* worth and what it *will* be worth. The former problem deals with the role of money as a means of exchange, whereas the latter affects the role of money as a store of value. It is not surprising that nowadays high inflation is generally recognised internationally by monetary and fiscal authorities as undesirable and bad for national economies. There is a growing appreciation worldwide that it is not possible to achieve long-term growth and employment by tolerating, let alone fuelling, high rates of inflation.

In South Africa, the De Kock Commission in its final report in 1985 states that "in the long term the primary objective of monetary policy should be the maintenance of reasonable stability of the domestic price level." This important objective of monetary policy is also recognised in the South African Reserve Bank Act. In his first Governor's Address to the Bank's shareholders in August 1989, Dr C. L. Stals stated that the Bank's primary mission is to protect the value of the rand, i.e. to combat inflation. Since August 1989 the Reserve Bank's policy actions have placed a high priority on counteracting the forces of inflation in the South African economy (Meijer, 1990: 31).

From time to time, policy makers, and particularly the monetary authorities, have been accused of contributing to the sub-optimal performance of the South African economy through their actions to reduce inflation. Although there is a price to be paid for reducing inflation, policy makers have to face the question of whether that price would not be lower than the price that would ultimately have to be paid for allowing high, and often increasing, inflation.

The desire to reduce inflation reflects a judgment that inflation imposes significant costs on the community. The first argument for the case of price stability would be to identify the cost of inflation itself. Unfortunately, many of the social costs of inflation are difficult to calculate accurately. Even the economic costs of inflation are not easy to quantify. These costs are usually spread over an extended period and are not as evident as the costs of price stabilisation policies, which are normally confined to a relatively short period. Moreover, the costs of inflation constantly change over time as economic behaviour adapts to inflation.

Given the diversity of the types of costs that have been identified as stemming from inflation, no specific empirical research has comprehensively quantified all these costs. However, the analysis of empirical evidence on the nature of the relations among inflation, uncertainty, relative price variability and output growth has made substantial progress in the 1990s. Although consensus cannot be said to exist, there are now firm indications that the gross benefits of low inflation are larger than was thought at the beginning of the 1990s (O'Reilly: vii).

It is not the purpose of this article to undertake an extensive empirical analysis to calculate the exact cost of inflation in South Africa. Instead, a summary is provided of some of the costs of inflation, illustrated with graphs and tables. The next section describes the measurement and historical development of inflation in South Africa. Then the main changes in attitudes to inflation are discussed, and the most important costs of inflation dealt with. The article concludes that inflation creates uncertainty about the future, that there are costs in having to cope with inflation and that "living with inflation" is no solution for sustainable higher economic growth or development. It highlights the need to ensure that inflation does not become a permanent feature of the economy.

## 2. Measurement and historical development

Inflation is best described as a *sustained rise* in the *general level* of prices – "sustained", "rise" and "general level" being the operative words. Inflation therefore refers to a *process* of rising prices rather than to a state of "high" prices. Stated differently, inflation results in a continued decline in the quantity of goods and services that can be bought with a fixed amount of money, or, in other words, a decline in the purchasing power of money.

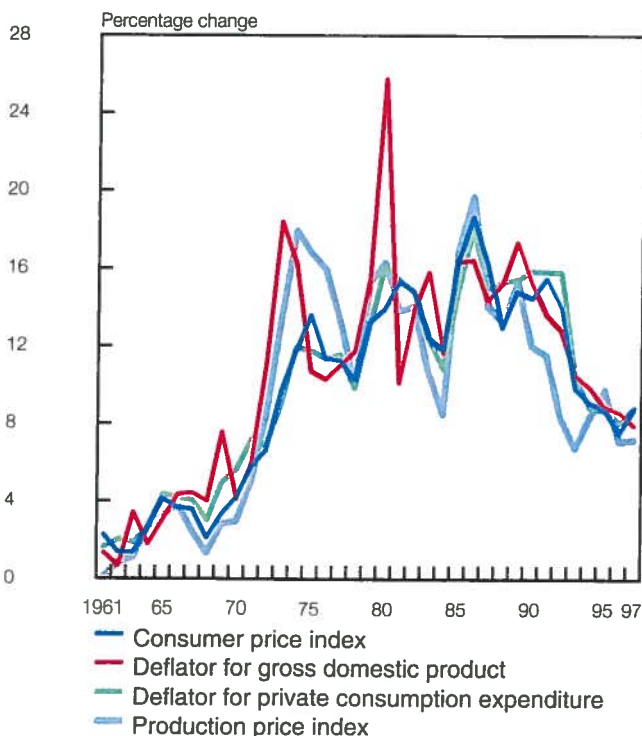
<sup>1)</sup> Valuable assistance in the article's preparation was provided by Mr. R. Markus and Mr. R. Walter of the Economic Research Unit. Assistance in the form of helpful comments and suggestions by various members of the staff of the Reserve Bank is also gratefully acknowledged, notably Mr. B.L. de Jager, who previously drafted a note on *The case against inflation*. However, the views expressed in this article are those of the author and do not necessarily reflect those of the South African Reserve Bank.

Many countries, including South Africa, experienced an abrupt acceleration in their inflation rates during the mid-1970s. In most cases, the acceleration of inflation was accompanied by increased volatility of annual inflation rates.

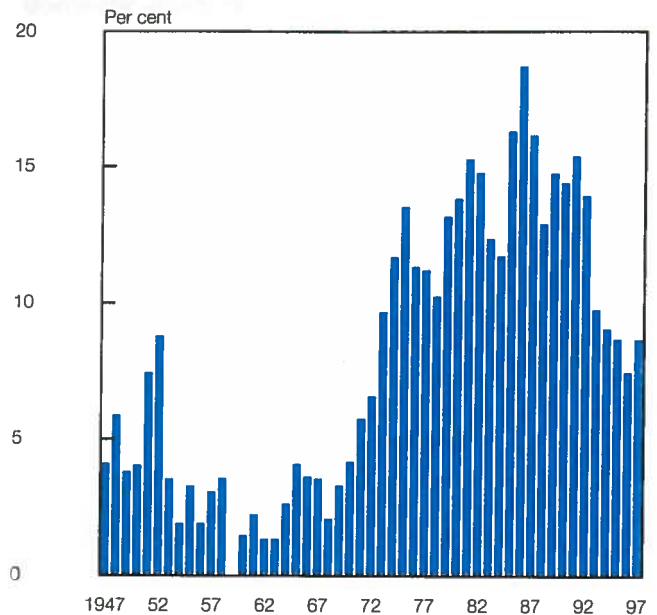
Internationally, inflation rates are measured according to price changes in a large number of combinations of goods and services. In South Africa, the more important indicators of inflation include changes in the overall consumer price index, the production price index, the deflator for gross domestic product and the deflator for private consumption expenditure. The average annual percentage change in these four indices is depicted in Graph 1.

It is clear that changes in these indices generally move in tandem. Deviations occur at times because of the different sets of goods and services included in the various indices. For instance, it is noticeable that in 1980 the price change measured by changes in the deflator for gross domestic product, was much larger than the price increases measured by changes in the other three indices. The gold price is reflected in the deflator for gross domestic product, but it is not included in the other indices. Therefore the other three indices indicate much lower price increases in the domestic economy than the deflator for gross domestic product, which reflects the increase to an all-

**Graph 1: Indicators of inflation in South Africa**



**Graph 2: Consumer price inflation in South Africa**

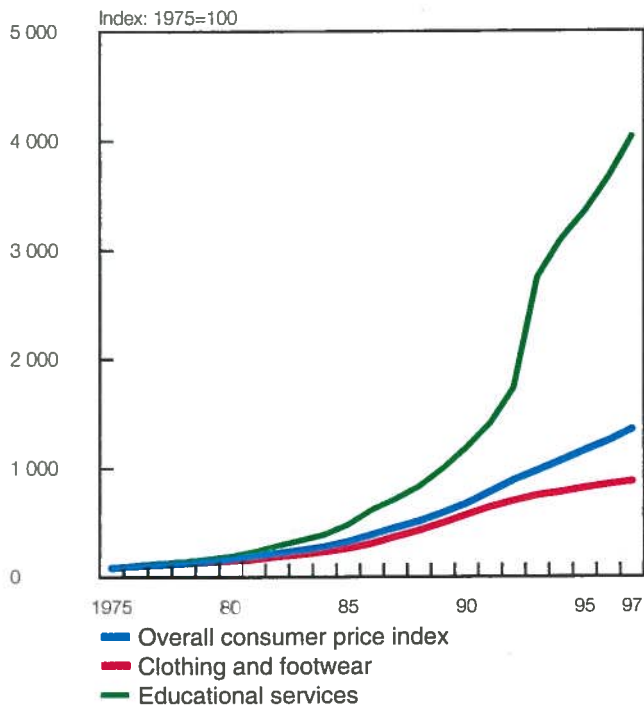


time high average annual price of gold of US\$613 in 1980. Despite the availability of several other price indicators, the most popular indicator of overall price changes in the South African economy remains the changes in the overall consumer price index.

Graph 2 shows the South African record of inflation from 1946, measured as the year-to-year percentage change in the average annual consumer price index; in every year since the end of World War II, the average annual level of consumer prices has increased. During the 52 years from 1946 to 1997 the average level of consumer prices rose about forty-sevenfold, increasing by 4 638 per cent over the entire period or at an average rate of 8,7 per cent per annum. Applying this price change to an imaginary item costing R100 in 1946, it would cost about R4 638 in 1997, or expressed in terms of purchasing power, one rand in 1997 could only purchase about one-fiftieth of the goods and services that it could in 1946.

Five distinct inflation periods can be identified over this 52-year period (Meijer, 1990, identifies four inflation periods). From 1946 to 1952 price changes were still influenced by post-war adjustments as well as the repercussions of the Korean War. The average consumer price inflation over this period amounted to 4,9 per cent per annum. A comparatively high degree of price stability prevailed during the period from 1953 to 1968, when the average annual rate of consumer price inflation was 2,4 per cent – the lowest average rate in the post-war period. At this rate, it would have taken 29 years for consumer prices to double. The years from 1969 to 1973 saw the run-up to double-

**Graph 3: Differences in movements of components of the overall consumer price index in South Africa**



the double-digit inflation years from 1974 to 1992, the average annual rate of consumer price increases amounted to 13,8 per cent. At this rate, prices would have doubled approximately every five years. From 1993 onwards single-digit price changes, comparable to those of the early 1970s, were again recorded.

One should note that all the prices included in a certain price index do not necessarily rise in the same proportion over any particular period. Graph 3 shows that the average inflation rate of "clothing and footwear" was considerably lower than overall consumer price inflation, whereas inflation in the cost of "educational services" outpaced the rise in the overall consumer price index since 1975. The sharp increase in the cost of educational services in 1993 reflected a change in the financing of Model C schools and the associated price rise that ensued.

### 3. Changing attitudes toward the cost of inflation

It was traditionally thought that the economic costs of inflation were negligible. Economists believed that economic prosperity depended on the optimal allocation of resources, which in turn depended only on

the relative prices of commodities and the availability of productive resources. Since there is no real reason for price ratios to change when the average price level changes, it was inferred that neither the price level nor its rate of change would, *ceterus paribus*, affect the volume of production of goods and services.

Until as recently as the 1960s, most economists were not unduly alarmed by inflation. Many believed that the costs of inflation were compensated for by the reduction in unemployment and the higher level of real output that could be attained by allowing inflation to continue, the "trade-off" between inflation and unemployment, illustrated by the Phillips curve. Part of the conventional wisdom at that time was that mild inflation was a healthy development because it facilitated the relative price changes that were necessary to improve flexibility in the economy and overall economic performance.

A crossroads was reached during the 1970s, when inflation accelerated world-wide from the reasonably low levels of the 1950s and the 1960s and output growth failed to respond in similar fashion. Economists started to realise that inflation changes the relative rewards that can be expected from alternative types of economic activity. Consequently they saw inflation as a powerful force capable of directing economic effort into areas that were not always desirable or beneficial to society.

Two important conclusions can be drawn from the re-examination of the inflationary process in the 1970s. The first is that the supposed benefits of inflation were overstated. The notion that higher employment levels can be attained by inflation, or by encouraging it, gave way to the concept that at any given time there is a level of unemployment consistent with stable inflation, called the non-accelerating inflation rate of unemployment (NAIRU). If a government wants to reduce unemployment below this critical level, it has to accept *constantly rising* inflation. The second conclusion is that the costs of inflation were previously understated, especially the adverse effects of inflation on potential production. Inasmuch as inflation distorts economic decisions, it misallocates productive resources and reduces output and real income to below the level that would have been attained in a stable price environment.

Price stability is currently widely recognised as one of the preconditions for sustainable growth, the efficient allocation of real resources and the reduction of distortions in the distribution of income. Since the 1990s, many researchers have made increasing efforts to empirically quantify the cost of inflation, or stated differently, to calculate the benefits of low inflation. While consensus does not yet exist, there are indications that the benefits of low inflation could be greater than was thought at the beginning of the 1990s.

People tend to focus on nominal values because they are more easily understood. It is therefore understandable why some would propose that the best



solution to inflation would be to index the system in order to remove the distortions arising from inflation. The preservation of policy credibility along with technical and administration considerations prevented this solution from being universally accepted (O'Reilly: 50). Institutional arrangements accordingly continued to focus mostly on nominal contracts and a nominal accounting system, despite high inflation. This led to the conclusion that the best and cheapest form of indexation is one which focuses on maintaining price stability (O'Reilly: 51; Jenkins, 1998).

In recent years, many countries have chosen to reduce inflation and to maintain price stability afterwards. Monetary policy was used extensively in this process. The basic tenet is that the comparative advantage of monetary policy is to reduce inflation, and that its potential contribution to stable growth lies herein. The argument that the central bank should emphasise curbing inflation comes from the twin beliefs that inflation imposes costs on society that reduce economic prosperity and that monetary policy can lower inflation but cannot have a permanent effect on real aggregate demand. This view is clearly reflected in the widely accepted definition of a central bank's task, namely to achieve and maintain price stability, and the consequent operational autonomy or independence that most governments give to their central banks to deploy the instruments required to attain this goal.

#### 4. Cost of inflation

There seems to be little disagreement that inflation costs exist and that they will be manifested in many ways. What is not clear, is the extent to which the costs are large enough to warrant remedy. This ambiguity arises in part because of the difficulties inherent in empirical work attempting to measure the costs.

One difficulty faced when investigating the cost of inflation is that researchers are looking for deviations from the level of production from a measure of potential production that would exist in an inflation-neutral world. In principle, in the absence of other macroeconomic disturbances, any deviations from the inflation-neutral level of production induced by policy decisions, incur a cost that might be eliminated by appropriate policy. Given that inflation results from many factors other than policy choices and given that production is also endogenously determined by a host of factors, this significant identification problem was considered an impediment to empirical work on the cost of inflation (McTaggart: 17). Considerable efforts have been made lately to estimate the benefits of disinflation, using partial-equilibrium and general-equilibrium analysis.

The effect of inflation in South Africa will only be

illustrated in this article by using graphs and tables without attempting to quantify the cost linked to inflation. However, reference will be made to some of the latest empirical results obtained in the 1990s where single-country and cross-country data were used in analyses.

The cost of inflation can be grouped under four headings, namely uncertainty, shoe-leather costs, redistributive costs and economic costs. Briefly, "shoe-leather" costs refer to wasted resources because of frequent visits to the bank to withdraw money, or in modern parlance, unnecessary cost incurred by the implementation of costly cash management systems. Redistributive costs arise because not all individuals are able to fully hedge themselves against inflation or because nominal interest rates do not fully adjust to incorporate inflation. Economic costs arise because inflation may cause people to change their investment or saving behaviour, with the result that the economy's growth potential is reduced.

#### 4.1 Uncertainty

Decisions to buy or sell and to borrow or invest are based on both current and future prices, and inflation creates confusion about the information that these prices convey. As a result, there can be over-investment in some production sectors relative to the underlying demand and underinvestment in others with the resultant need for adjustment.

A considerable body of literature has accumulated concerning the relation between the level of inflation and its variability. Golob (1993) surveyed the empirical literature on inflation and uncertainty and concludes that these studies have found that both survey and mathematical estimates of uncertainty are positively related to the level of inflation, i.e. the higher the inflation, the greater the uncertainty.

Uncertainty also has a time dimension. It may be possible to forecast tomorrow's inflation rate with a high degree of certainty but to be far less certain about the inflation rate a few months or years hence. Table 1 reports summarised statistics on the average annual

**Table 1. Mean and standard deviation of inflation in South Africa**

Period	Mean	Standard deviation
1960-1969 .....	2,50	0,97
1970-1979 .....	9,66	3,03
1980-1989 .....	14,61	1,98
1990-1997 .....	10,84	2,93

rate of consumer price inflation in South Africa and its variability, as calculated by its standard deviation, over the period from 1960 to 1997.

Examining the data by decades, the 1960s are characterised by a low average level and low variability of inflation. The advent of the 1970s sees a virtual quadrupling of average inflation, to almost double-digit levels, along with a threefold increase in variability. The 1980s show even higher inflation rates, but less variability than in the 1970s, an indication of a slightly more stable inflation rate but at a higher level. In the 1990s inflation is reduced, but variability increases again to almost the same level as in the 1970s. The higher variability of inflation in the 1970s could be the result of the change from single-digit price increases to double-digit price increases. In the 1990s the opposite movement in price increases, from double-digit to single-digit inflation rates, could again have resulted in the higher variability. It therefore appears that changes in the inflation regime could have led to this higher variability and uncertainty.

#### 4.2 Shoe-leather cost

Among the earliest researched costs of inflation is the "shoe-leather" cost, arising from considering real money balances as a consumption good and inflation as a tax on real money balances. Individuals then minimise their cash holdings which do not earn any interest. They incur the cost of worn shoe-leather, i.e. the cost of wasted resources and opportunity, when going frequently to the bank to withdraw cash for their daily purchases.

Higher inflation also results in the increased supply of financial services by financial institutions. The shoe-leather cost of going to the bank contributed to the development of methods of payment without cash, such as debit or credit cards. Households substitute transactions in financial services for money balances so that the financial services sector increases its share in the overall value of production. The size of a nation's financial sector (measured either by the financial sector's share of GDP or by employment) is strongly affected by its inflation rate (English, 1996; O'Reilly: 26).

Related to shoe-leather costs are "menu" costs, that is the cost involved in changing prices more frequently in accordance with the frequency and magnitude of price changes. Constantly changing prices result in increased price uncertainty on the part of businesses and households. However, these costs are unlikely to be large except in the case of hyperinflation (Flynn & Parkinson: 3).

#### 4.3 Redistributive costs

Inflation-induced redistribution is costly because it induces changes in behaviour as individuals reallocate resources to avoid the effects of inflation, that is, time

**Table 2. Purchasing power of money**

Year	Consumer price index	Price of item*	Purchasing power of R100**
	Index 1995 =100	Rand	Rand
1946.....	2,46	100,00	100,00
1950.....	2,93	119,10	83,96
1960.....	4,10	166,67	60,00
1970.....	5,39	219,11	45,64
1980.....	14,95	607,72	16,45
1990.....	58,65	2 384,15	4,19
1997.....	116,57	4 738,62	2,11

\* The price of an item which cost R100 in 1946

\*\* The value, or purchasing power, of R100 in 1946 terms

and resources are diverted away from their initial use to less productive activities in an attempt to avoid the effects of inflation on income. Because resources are then used in activities in which they would not otherwise be used, except for the existence of inflation, efficiency losses are incurred.

##### 4.3.1 Redistribution from holders of money balances

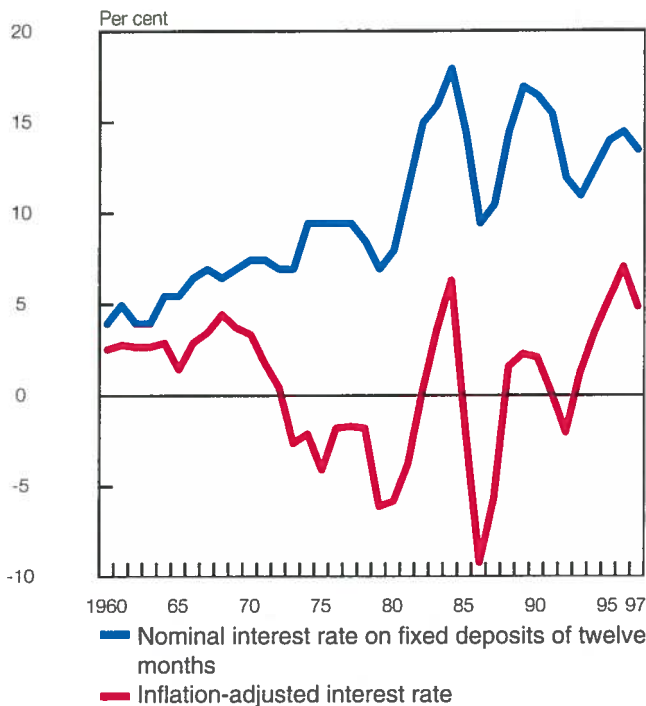
People cannot completely eliminate holding cash for transaction purposes. The purchasing power of money is eroded by inflation, hence there will be some redistribution of wealth from holders of money balances. Firms and individuals also hold assets in bank deposits. The purchasing power of these deposits also falls with inflation if the real after tax interest rate is negative.

Table 2 illustrates how inflation erodes the purchasing power of money. The effect of the high inflation years of the 1970s and 1980s is clear. In the 1970s the purchasing power of money was reduced by almost two-thirds within 10 years. In the 1980s the value of money was eroded even faster by about three-quarters over the 10-year period. The benefit of the slowdown in inflation from the mid-1990s can be seen in the slowdown in the erosion of the purchasing power of money in the period 1990 to 1997.

##### 4.3.2 Redistribution from lenders to borrowers

There is substantial empirical evidence that anticipated or expected inflation is reflected in nominal interest rates, often referred to as the Fisher effect. The essence of the Fisher effect is that nominal interest rates ( $i$ ) include a real component ( $r$ ) and an inflation expectations component ( $\pi^e$ ), i.e.  $i = r + \pi^e$ . A fully anticipated inflation rate is then reflected in nominal interest rates so that lenders are compensated for the

**Graph 4: Real and nominal returns**



reduction in the purchasing power of the principal of a loan caused by inflation. If the actual inflation turns out to be higher than expected inflation, the real return to lenders will be lower than expected, resulting in a redistribution of income from lenders to borrowers. If actual inflation is less, there will be a redistribution of income from borrowers to lenders.

Graph 4 shows the nominal and real interest rate (i.e. nominal rates adjusted for observed inflation) on fixed deposits of twelve months. Although nominal interest rates have increased in response to higher inflation, real returns to lenders have declined almost continuously from the latter part of the 1960s until the late 1980s, thereby eroding the purchasing power of savers. The only exception during this period was in 1984 when the real return on savings was positive. Since 1989 the real return had become positive and, except in 1992, has remained positive ever since. Tax is also levied on nominal interest income. When the tax effect is taken into account, the real return to savers declines further, so that they have no incentive to save.

#### 4.3.3 Redistribution from fixed income earners

Inflation will transfer income away from people with fixed incomes to the financial institutions in which they invested their funds or to borrowers. It is natural to think of pensions when one refers to fixed incomes and

how they lose purchasing power with persistent inflation. A potentially more important issue in years to come is the performance of investment funds as more people start saving for their own retirement. If returns on funds are unable to keep pace with inflation, members of those funds will suffer a real loss in wealth and, ultimately, in retirement income. While this seems *a priori* unlikely given the historical performance of funds, inflation could impact indirectly on the rate of return of these funds in the long run by slowing the rate of economic growth. Similarly, to the extent that inflation depresses real values in the stock market and raises the risk premium attached to equity investment, high inflation could also have an adverse effect on fund earnings (Flynn & Parkinson: 5-6).

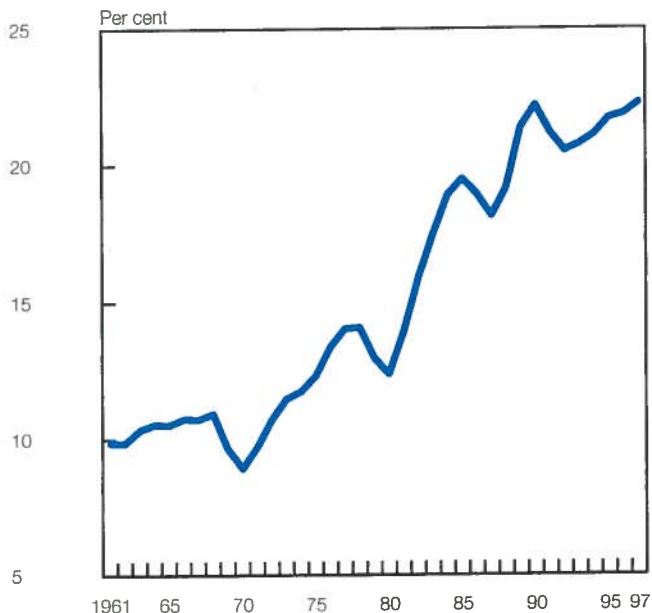
As noted previously, inflation can cause a redistribution of income from lenders to borrowers if inflation is not fully reflected in nominal interest rates. Implicit in this statement is that first of all inflation must be expected; and once expected, it must be built into higher nominal interest rates. It is reasonable to expect that adding inflation expectations to current interest rates can easier and more likely be taken into consideration by those people or institutions with a higher degree of market power or financial sophistication than smaller and less sophisticated entities. To this extent, market participants with more funds to offer financial intermediaries or who lend directly to borrowers are more likely to be able to negotiate a full pass-on of inflation than those with small amounts of funds and hence weaker market power. Furthermore, lower income groups may have less knowledge of financial markets or be unable to incur the potentially large fixed costs of acquiring hedging assets. Hedging against the costs of inflation may therefore be less accessible to low income or low wealth groups. As a consequence, low-income households may be more seriously affected by the redistributive costs of inflation than wealthier households.

#### 4.3.4 Redistribution to government

Inflation interacts with the wage and tax systems, pushing wage earners into higher tax brackets, inducing labour/leisure substitutions and necessitates more frequent wage negotiations, increasing the probability of industrial unrest.

However, nominal wages in South Africa have tended to keep pace with inflation over time. If personal income tax rate scales remain unchanged, individuals move into higher marginal tax brackets and are subjected to a higher tax burden (called bracket creep or the fiscal drag phenomenon), despite there being no change in real pre-tax personal income. The result is the redistribution of income from individuals – as real after-tax income falls – to the government. These effects can be largely offset by downward adjustments to the tax scales. Graph 5 shows the

**Graph 5: Average weighted tax rate on individuals**



average weighted tax rates for all individual taxpayers (See Smal, 1995, for the calculation of the average weighted tax rates for individual taxpayers) for the period from 1960 to 1997. This rate has increased almost consistently and in 1991, the year before the introduction of the Standard Income Tax on Employees (SITE), reached its second-highest level ever. After declining briefly in 1992 and 1993, the rate has increased ever since and reached its highest rate of 22,3 per cent in 1997 without any major changes in the statutory tax scales.

#### 4.4 Economic costs

##### 4.4.1 Labour market effects

Inflation can interact with the outcomes in the labour market in a number of ways. First, if adjustments are sluggish, say because of the existence of nominal wage contracts, then inflation will erode real wages and possibly increase employment. Inflation in labour markets will have an impact on the type of contracts workers enter into. Because it is the existence of fixed nominal contracts that leads workers to supply more labour for lower real wages, an increase in the variability of inflation will lead to shorter average contract lengths. So the problem of renegotiating contracts becomes more important and more resources are devoted to this essentially unproductive activity.

There may be other avenues through which inflation can have adverse effects on the labour market. One possible source of concern for workers who are

negotiating wage contracts is the variability of inflation. If workers could fully anticipate the extent to which inflation will erode the real wage over the life of a contract, then that information could be incorporated into the contract. However, variable inflation will induce risk-averse workers to negotiate a nominal wage that incorporates a premium to cover the eventuality that the realised price level may be higher than the expected price level. Increasing uncertainty about inflation, which is closely related to the increasing variability of inflation, will therefore push up the average nominal wage rate and hence the real wage, which may result in an upward wage-price spiral. Alternatively, risk-averse workers could settle for a lower wage but with clauses providing for wage adjustments in the event of an acceleration in inflation.

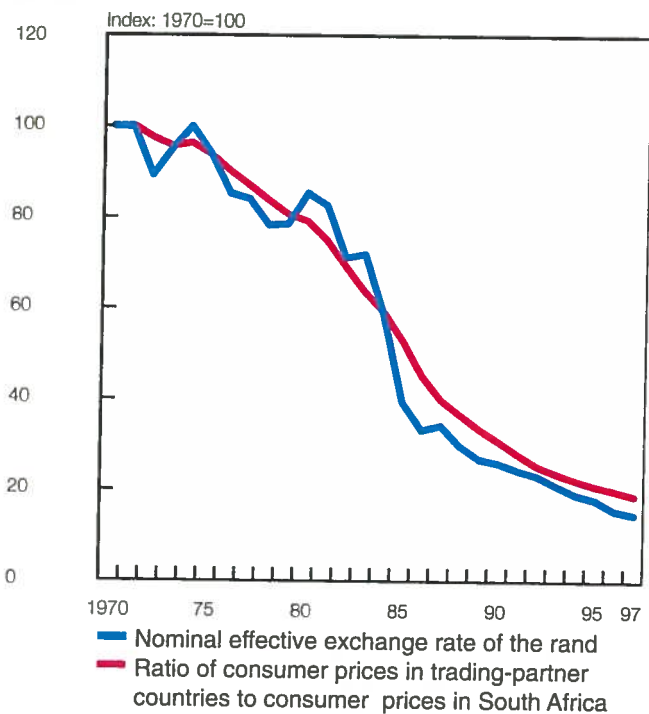
##### 4.4.2 International competitiveness

In theory, if South Africa's inflation rate were higher than that of its trading partners the nominal exchange rate of the rand should depreciate to compensate for the loss in competitiveness. In practice, purchasing power parity seems to hold only in the long run. The possible reasons for the failure of purchasing power parity to hold in the short run are many and varied, including transaction costs, wage and price rigidity, the interaction between inflation and the nominal taxation system, and the impact of other factors on the exchange rate. Nevertheless, higher inflation than in trading partner and competitor countries normally leads to a one-sided adjustment in the exchange rate of a currency that can make a country vulnerable to speculative attacks.

Graph 6 depicts the relative inflation rates of South Africa and its main trading partners compared with developments in the nominal effective exchange rate of the rand. The weighted inflation rate in South Africa's main trading-partner countries (United States of America, United Kingdom, Germany and Japan) was compiled by weighting their respective inflation rates with the size of their respective total trade with South Africa. The movements in relative purchasing power parity are broadly matched by movements in the nominal effective exchange rate of the rand. The slightly more than fivefold increase in the ratio of South Africa's consumer price index to the weighted average index of consumer prices in trading-partner countries from 1970 to 1997 has been accompanied by a depreciation in the average effective exchange rate of the rand to a value slightly less than one-sixth of its value in 1970.

Because a loss in competitiveness has an impact primarily on the traded goods sector (see next section), high inflation makes it more difficult to reduce a current account deficit in a sustainable fashion. A current account deficit is more easily financed in a world of deregulated capital markets. Although liberalisation has made financing easier, it has also led to an

**Graph 6: Relative inflation and the exchange rate**



increase in the volume and volatility of short-term capital flows, which appear to be more sensitive to interest rates.

If higher interest rates cause the exchange rate to appreciate, attempts to reduce embedded inflation by raising interest rates, although necessary, erode the competitiveness of domestic producers, exacerbating the original loss of competitiveness from higher inflation. In short, the net effect is that a high inflation rate erodes a country's international competitiveness over sustained periods and attempting to reduce deeply entrenched inflation can, in turn, erode competitiveness, albeit only temporarily. This affects economic activity and investment in the traded goods sector and impedes the process of reducing a current account deficit.

#### 4.4.3 Tradables and non-tradables

Cross-sectoral investment patterns will also be affected by rigidities or other distortions which interrupt the processes of restoring purchasing power parity following an increase in the domestic price level. As stated in the previous section, to the extent that the nominal exchange rate does not adjust to maintain consistency in the real exchange rate, domestic inflation ultimately reduces domestic competitiveness in world markets. This will be reflected in declining profitability in the traded goods sector and a movement of resources out of the traded goods sector into the

non-traded goods sector – a movement that would not have occurred had there been more price stability (McTaggart: 8).

The traded goods sector is also exposed to more competition than the non-traded goods sector and is less capable of passing on the impact that inflation has on its cost base. For example, if wages increase across the board in South Africa, the non-traded goods sector would be better able to pass on the increase as all competitors in each market face much the same increase in the cost structure. It would be more difficult for import-competing industries to pass on the increase in costs via higher prices, because prices of imported goods would not be directly affected by the South African wage increase, with consequent impacts on the efficient allocation of resources across firms and industries.

#### 4.4.4 Depreciation of asset values

Since equipment can be applied for a long time period, businesses need to account for the gradual deterioration of equipment and make provision for its replacement in the future. Inflation distorts this process when accounting systems operate on a historical cost basis, and not on replacement cost. With inflation, most depreciation rules entail that the real value of depreciation allowances is eroded and so the true extent of depreciation is understated. Therefore, inflation significantly distorts the value of depreciation allowances, increases the effective tax rate on profits and in this way significantly penalises investment.

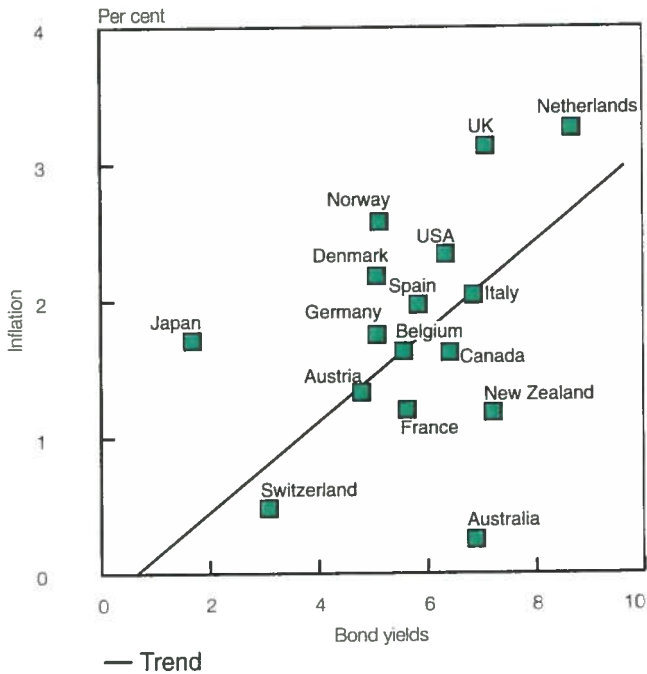
#### 4.4.5 Nominal and real interest rates

With relatively high inflation rates in recent years, the nominal interest rates in South Africa have also tended to be high as the anticipated inflation rate was incorporated into nominal interest rates. The Fisher effect, adjusted for taxation effects, states that in order to keep the after-tax real interest rate constant, the nominal interest rate must rise by more than an increase in inflation to compensate for the increase in the tax burden as nominal income rises. Lenders are normally taxed on nominal interest payments and borrowers are able to deduct nominal interest payments, therefore lenders have to bear a higher tax burden than borrowers. The nominal interest rate lenders receive must therefore rise by more than the nominal interest rate borrowers face. In general, the actual rise will be between that required for borrowers and lenders so that the real return on saving declines but the real cost of lending increases.

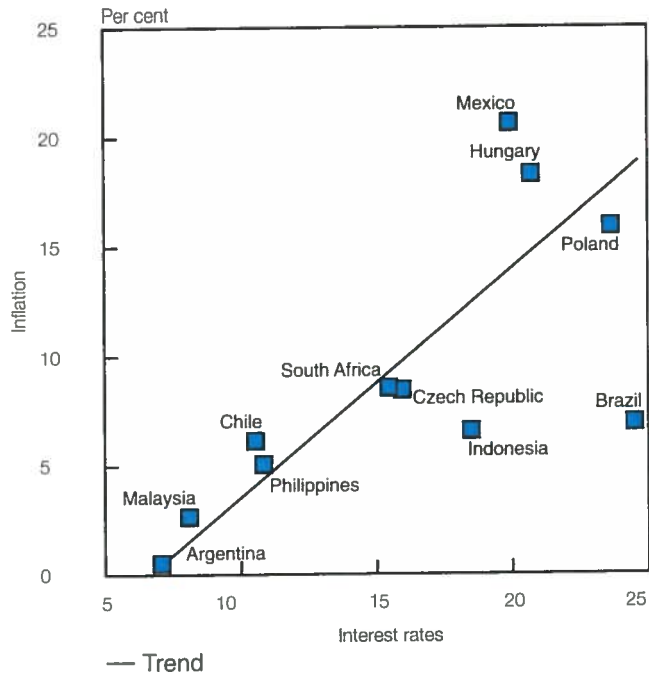
An additional effect on interest rates arises from the fact that inflation increases uncertainty about future price movements. This greater uncertainty tends to increase the real interest rate sought by investors and, therefore, the level of nominal interest rates.

Graphs 7 and 8 provide further evidence that inflation has costs in terms of investment and the growth potential – and that these costs continue long after inflation has been reduced. Graph 7 plots the

**Graph 7: Inflation and long-bond yields in developed countries, 1997**



**Graph 8: Inflation and short-term interest rates in emerging market countries, 1997**



yields on long-term bonds against average inflation in 1997 in a few selected developed countries. Graph 8 shows the relation between inflation and short-term interest rates in a selection of emerging market economies. It seems that those countries that have experienced high inflation also have the highest level of interest rates. This is not intended to suggest that other factors are unimportant, but there is a striking correlation between inflation and rises in interest rates.

**4.4.6 Saving and investment**

Whether or not decisions about savings and investment are distorted by inflation depends on whether the real costs of and returns on those activities are affected by inflation. Therefore, the relation between inflation and real interest rates, discussed in the previous section, becomes important.

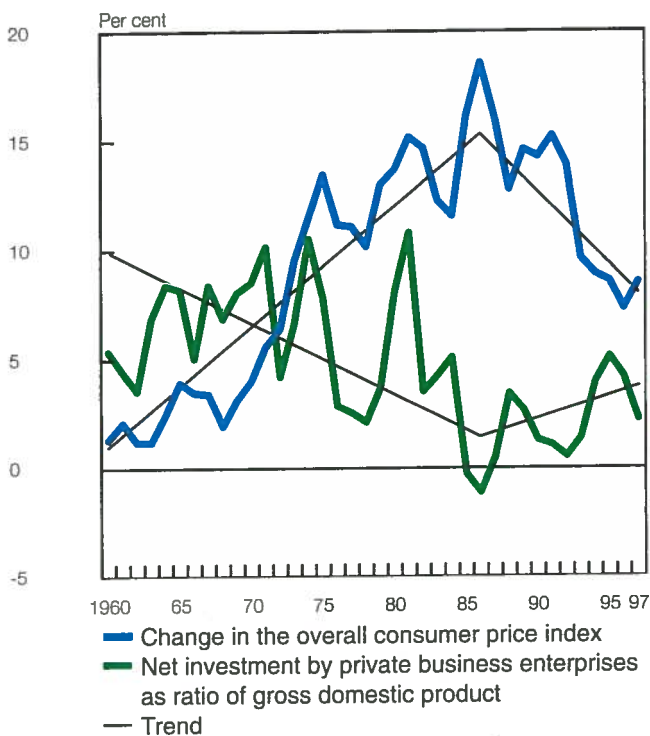
The net impact of inflation on saving is theoretically ambiguous. In the short run, inflation could lead to a decline in the real return on saving if it is not compensated fully by nominal interest rates. The taxation of that part of interest payments which is intended to compensate for the erosion of purchasing power by inflation further lowers the real return on saving. To the extent that savers are sensitive to changes in after-tax interest rates, inflation will have a negative impact on saving, thus affecting the supply of loanable funds for investment financing.

This negative effect of inflation on savings has to be set against the degree to which higher inflation increases uncertainty about the future. Higher uncertainty could increase the precautionary motive to accumulate assets and therefore have a positive impact on saving. In general, however, the interaction between inflation, the tax system and savings behaviour manifests in a reduction in the savings rate.

In terms of investment itself, some factors such as increased uncertainty, reduced competitiveness and higher interest rates, are likely to reduce the level of investment. In fact, the level of net investment, that is investment which adds to the existing capital stock, has fallen markedly in the 1970s and 1980s compared with the low inflation decade of the 1960s. Net investment by private business enterprises as a ratio of gross domestic product is depicted together with inflation in Graph 9. As inflation accelerated from the low levels recorded in the 1960s to the high average rate of 18,6 per cent in 1986 and then declined to an average rate of 8,6 per cent in 1997, net investment by private business enterprises as a ratio of gross domestic product first decreased to its lowest level of -1,1 per cent in 1986 and then resumed an upward trend again to its 1997 level of 2,3 per cent.

Inflation erodes the real value of investment and depreciation allowances which create an incentive to invest in shorter lived capital and to eschew large-scale, longer term projects (McTaggart: 7). Since

**Graph 9: Inflation and the net investment ratio**



profitability directly affects the incentive to invest, disruptions in the distribution of profits between sectors of economic activity will add to the distortion of cross-sectoral investment patterns and the composition of the capital stock. In general, a firm's pricing policy varies according to the market structure in which it operates. Firms less able to pass on cost increases suffer from significantly larger profit decreases during inflationary periods. As indicated above, firms operating in the tradable goods market suffer greater distortions from inflation than those in the non-tradable goods market. Investment expenditure also shifts to the financial services industry because there is an increased demand for its services on account of inflation.

The issue of the interaction between taxes and inflation was touched on earlier. Since inflation induces a situation where borrowers gain and the tax system allows for interest cost to be written off against profits, the interaction of inflation with the company tax system produces a bias towards debt financing in the financing of investment.

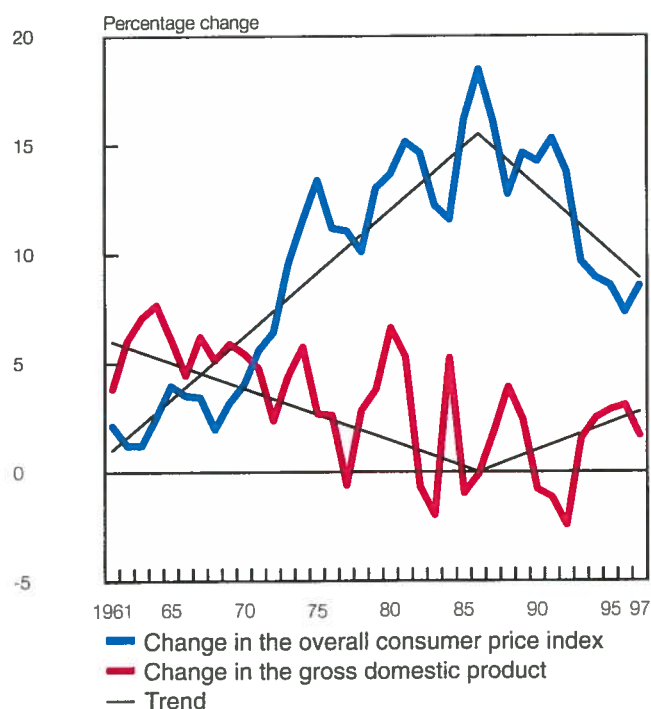
Inflation tends to reduce investment in productive assets (such as plant and equipment) and redirects it to other forms of investment (inflation hedge assets such as property or equity), leading to a slowdown in economic growth. This slowdown in production growth has serious consequences in that it is not merely a

temporary shrinkage of real aggregate income and wealth, but a reduction in the economy's capacity to produce income and employment in the long run. Furthermore, overinvestment in inflation hedge assets may create an asset price bubble with potential economic risks.

#### 4.4.7 Economic growth

As discussed above, inflation has important, identifiable and distorting effects on the markets for production factors. In the labour market, inflation's biggest effect is probably on the negotiation process that workers and firms enter into when settling the wage contracts. Inflation and the variability of inflation will induce firms and workers to negotiate more often, while at the same time clouding the information and increasing the probability of confrontation and strikes. With respect to capital, the identified effects of inflation on higher interest rates, increased uncertainty, reduced competitiveness and lower, and distorted, investment levels will all tend to result in a sub-optimal real fixed capital stock. Inflation also increases the real tax burden of firms, reduces real cash flows and increases the cost of equity financing. Apart from inducing a lower capital stock, inflation also biases investment more heavily towards assets other than plant and equipment and is financed increasingly through debt. In addition, inflation also distorts the production

**Graph 10: Inflation and economic growth in South Africa**



processes so that the reduced levels of input are used in less efficient techniques of production and this has a significant effect on marginal and average labour and capital productivity. Since both labour and capital, and also aggregate technology are adversely affected, inflation significantly reduces the level of production and income in the economy.

Graph 10 compares inflation in South Africa, as measured by changes in the annual level of the consumer price index, with economic growth, as measured as changes in the annual real gross domestic product. It indicates a broad inverse relation between inflation and real economic growth. This relation should not be interpreted naively or simplistically as supporting the contention that high inflation causes low growth. Rather, price stability should be seen as a necessary, but not sufficient, condition for high, sustainable economic growth.

Table 3 summarises some of the recent empirical findings about the cost of inflation in terms of reduced economic growth in various countries (O'Reilly: 58). It is clear that the findings are varied, indicating that for every one percentage point reduction in inflation, income increases by between 0 and 0,3 percentage points.

To illustrate the calculated cost of inflation, the following findings from a recent paper by Motley (1998) are highlighted. Motley focuses on the argument that in the long run persistent inflation leads to a reduced growth rate of real gross domestic product. As many as 78 "non-oil" countries, for which 1960 to 1990 data were available, were included in a cross-country analysis. Cross-section regression equations were estimated over the full 30-year sample period. The results imply that in the long run steady state, a 10 per cent inflation rate would reduce annual per capita growth in an average country by about 0,25 of a percentage point. With steady-state growth of 2 per cent (the assumed rate of Harrod-neutral technical change<sup>2</sup>), per capita gross domestic product would double in 35 years. If the growth rate were reduced to 1,75 per cent, this doubling would take 39 years. The empirical results lead to the conclusion that a 5 percentage point reduction in inflation could boost annual growth by between 0,1 and 0,5 percentage points.

An increase in growth of less than 0,5 of a percentage point may appear insignificant, but when evaluated over the long run the cumulative gains in future income from lowering inflation can be impressive. In order to judge whether the move towards price stability would be worthwhile, Motley calculated the present value of the long-run benefits in order to compare them with the upfront costs of inflation containment. The calculation is sensitive to the

interest rate used to discount future benefits. Rough calculations suggest that the benefits exceed the costs by a wide margin: "For example, with a 40-year working life, a 3 per cent real discount rate, and a convergence parameter of 2½ per cent, a reduction in inflation that would yield a 0,1 percentage point boost to steady state growth would increase the discounted lifetime income of a typical worker by an amount equal to about 15 per cent of one year's income, while a 0,5 percentage point boost to steady state growth would be worth almost 140 per cent of one year's income. These estimates of the benefits of lower inflation appear to exceed the costs of bringing inflation down, which have been estimated as amounting to at most 12 - 15 per cent of one year's gross domestic product for a 5 percentage point reduction in inflation" (Ball, 1993; Motley: 27).

**Table 3. Time-series estimates of the benefits of disinflation**

Study	Country	Estimate <sup>c</sup> Per cent	EV <sup>d</sup> Per cent
Cameron, Hum and Simpson (1996)	Canada, USA, UK, Germany	0 <sup>a</sup>	0
Fortin (1993)	Canada	0 <sup>a</sup>	0
Sbordone and Kuttner (1994)	USA	0 <sup>a</sup>	0
Stanners (1993)	Industrialised countries	0 <sup>a</sup>	0
Bullard and Keating (1995)	58 post-war economies	0 <sup>a</sup>	0
Grimes (1991)	OECD	0,10 <sup>a</sup>	3,40
Smyth (1994)	USA	0,20 <sup>a</sup>	7,00
Jarret and Selody (1982)	Canada	0,30 <sup>a</sup>	10,60
Bruno and Easterly (1996)	Cross-country	0 <sup>a</sup> if $\pi < 40\%$	0
Judson and Orphanides (1996)	Cross-country	0 <sup>a</sup> if $\pi < 10\%$	0
Barro (1995)	Cross-country	0,02 <sup>b</sup>	0,40
Fischer (1993)	Cross-country	0,04 <sup>a</sup>	1,40
Cozier and Selody (1992)	Cross-country	0,10 <sup>b</sup>	1,98

a. Growth rate effect

b. Temporary growth rate effect lasting 30 years

c. The estimated income or productivity gain (per cent of GDP) for a one percentage point reduction in the rate of inflation

d. The equivalent value (EV), i.e. the proportional increase in consumption the household would require in each period in the initial high-inflation steady state to be as well off in the low-inflation steady state

<sup>2</sup> Harrod-neutral technical change is a technical process which increases the efficiency of labour, so that the labour force expressed as efficiency units increases faster than the number of workers available.



Much of the cost of bringing inflation in South Africa down was borne in the late 1980s and early 1990s. As mentioned, inflation declined from 18,6 per cent in 1986 to 8,6 per cent in 1997. To ensure that inflation stays low, future inflationary pressures will have to be resisted. The findings of current empirical research suggest that the short-term costs of such resistance will probably be worth bearing.

## 5. Conclusion

While the list of potential costs from sustained inflation is long, the orders of magnitude are difficult to estimate empirically. Having said that, the consistency of some findings that the costs of inflation are significant provides some support for the view that sustained inflation has an erosive effect on an economy's distribution of income and potential growth.

Resources are redirected in undesirable ways when relative prices change owing to the interaction between inflation and institutional arrangements. Part of the costs of inflation arises from resources being wasted on activities such as the pricing of goods, the management of cash flows and cash balances and the development of non-taxable employee benefits. Other more serious costs are brought about by the combined effect of inflation and the income tax system that reduces the incentive for consumers to save and for businesses to invest.

Inflation costs also arise from the unpredictability of inflation that causes temporary changes in relative prices and increases risks of doing business. Inflation changes the relative prices of production factors and final goods and services. The resulting reduction in potential production is aggravated by the weakening of trade and financial relations with other countries, contributing in turn to a lessening of business confidence and lower income growth. The socially divisive nature of inflation because of its redistribution of income, is also an important non-measurable cost.

Although it is not easy to provide empirical evidence of the precise magnitude of the economic costs of inflation, recent empirical studies indicate that inflation is not generally helpful for countries in their efforts to promote economic growth. With so little to be gained from continuing inflation, and the unavoidable reduction in current national income because of it, the cumulative gains in future income should be sufficient motivation for governments to reduce inflation to levels where it no longer has an influence on the decisions that individuals and businesses make. Members of society could then base decisions to buy, sell, borrow, save or invest on confidence in the current and future value of the domestic currency.

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# A short note on turnover in the South African market for foreign exchange

by S.S. Walters and J.N. de Clerck

## 1. Introduction

The Economics Department of the South African Reserve Bank started to collect data on turnover in the domestic foreign-exchange market towards the end of 1986 when international guidelines for measuring such turnover were not clearly specified. As new markets opened and existing markets became more sophisticated, the need for a better understanding of the forces driving market movements emphasised the importance of internationally accepted standards for measuring the activity in foreign-exchange markets. The Bank for International Settlements played an important role in the specification of such standards. South Africa decided to comply with these specifications and introduced a new survey form (Form B12) in March 1998 to replace the previous form (Form B15) which was discontinued at the end of April 1998.

The aim of this note is to inform the users of these statistics of the new methodology used in measuring turnover in the market for foreign exchange and to present the findings obtained from the regular Form B12 surveys in a concise format.

## 2. The objective of market surveys

The primary objective of Form B12 is to obtain comprehensive and reliable information concerning activity in the South African market for foreign exchange. Turnover data provide the Reserve Bank with valuable information regarding the relative importance of spot, forward and swap market activity. Market participants are identified as monetary institutions, other resident entities and non-residents. Transactions in terms of which rands are exchanged for other currencies are distinguished from transactions between third currencies. Turnover data also provide a measure of the size of the market and are used extensively by market participants in calculating market share. The data are disseminated by the Reserve Bank through the Quarterly Bulletin and the Monthly Release of Selected Data, both of which are displayed on the Internet home page of the Reserve Bank.

## 3. Principles and methodology

Table S-101 of this edition of the Quarterly Bulletin provides comprehensive data on turnover in the domestic foreign-exchange market in a format which is largely in accordance with the guidelines specified by

the Bank for International Settlements. The coverage of the new survey was expanded to collect information on transactions where rands are exchanged for other currencies and transactions in third currencies, i.e. transactions involving the exchange of any two other currencies against each other. The inclusion of transactions in rand and in third currencies indicates the overall size of the market whereas information about transactions against the rand indicates the turnover in the segment of the market where the behaviour of the exchange rate of the rand is determined.

The information in Table S-101 reflects turnover in the domestic foreign-exchange market. This turnover is defined as the gross value of all transactions concluded on the reporting day, measured in terms of nominal or notional amounts. These turnover statistics include data on spot foreign exchange contracts, outright forward transactions and swap transactions. Option transactions are excluded. Each authorised foreign exchange dealer reports turnover data in a manner that allows transactions with other authorised dealers to be identified separately. Local interbank transactions may lead to double counting and an overestimate of turnover statistics. The aggregated raw data are therefore adjusted to eliminate double counting. The adjusted turnover totals are published as *net turnover* in Table S-101.

The most important change in the new survey concerns the treatment of swap transactions. Swap transactions are defined as transactions which involve the actual exchange of two currencies on a specific date at a rate agreed upon at the time of the establishment of the contract (the spot leg), and a reverse exchange of the same two currencies at a future date at a rate also agreed upon at the time of establishing the contract (the forward leg). In the past, the spot leg of the transaction was included as part of turnover in the spot market whereas the forward leg of the transaction was included as part of turnover in the forward market. However, according to the methodology specified by the Bank for International Settlements, only the forward leg of a transaction which has been concluded as a spot/forward swap transaction should be included in turnover.

Information collected from April 1998 in terms of the new survey enabled the Bank to compile turnover statistics which are consistent with international best practice. In order to obtain a consistent time series, double counting arising from the inclusion of both legs of a swap transaction had to be eliminated for the period prior to March 1998. Adjustments for the period from January 1997 to March 1998 were based on detailed information relating to swap transactions during that period. For the period from January 1987

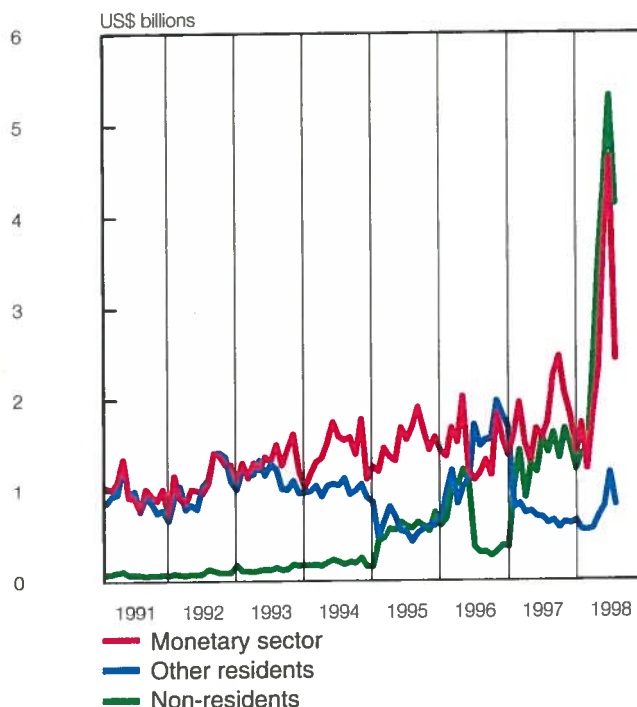
to December 1996 it was assumed that turnover in the swap market maintained a fixed ratio to total turnover in the spot and forward markets.

#### 4. Main features of the South African market for foreign exchange

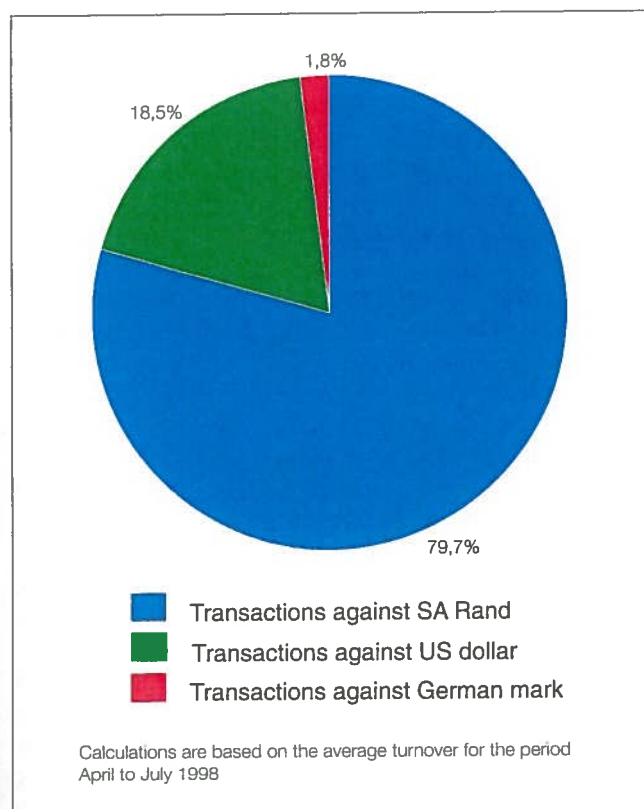
As already indicated, the local market for foreign exchange can be divided into the "rand market" and the "third currency market". The rand market is the dominant one, representing almost 80 per cent of total turnover. Of the remaining 20 per cent, about 18½ per cent is conducted between the US dollar and other currencies and 1½ per cent between the German mark and other currencies (see Graph 1).

An analysis of turnover in the rand market by type of participant shows the increasing role that non-resident parties are playing in the South African foreign-exchange market (see Graph 2). This is particularly evident during periods when the domestic market is highly volatile, as was the case in the first half of 1996,

**Graph 2: Average net daily turnover in the South African foreign-exchange market by type of transactor**



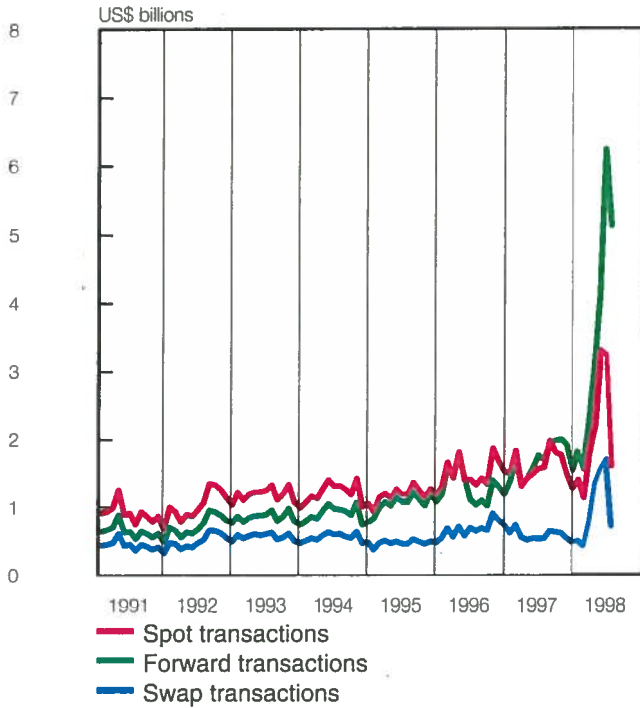
**Graph 1: The composition of the total net average daily turnover in the South African foreign-exchange market**



towards the end of 1996 and early in 1997, and again during May to July 1998. The behaviour of resident participants outside the monetary sector is also heavily influenced by volatility in the market for foreign exchange. During periods of a strong depreciation of the rand, resident non-bank entities with an exposure in foreign currency tend to cover themselves so as to contain the cost of future commitments. Accordingly, the value of their involvement in the market increased strongly from an average daily turnover of US\$0,6 billion in 1995 to an average daily turnover of US\$1,4 billion in 1996. In the more stable conditions of 1997 these levels averaged US\$0,7 billion, before increasing again to a level of US\$1,2 billion in June 1998.

Until the middle of 1997, activity in the domestic market for foreign exchange was dominated by transactions in the spot market (see Graph 3). Spot trades are highly standardised transactions in a very liquid market. From the middle of 1997 swap transactions began to overtake spot transactions as the dominant kind of transaction in the market. The main purpose of foreign-exchange swaps is to manage liquidity and currency risk by executing foreign exchange transactions at the most appropriate moment. The need to manage liquidity and reduce currency risk is particularly pressing during times when there are large movements in the exchange rate of a currency. Such situations occurred in South Africa in

**Graph 3: Average net daily turnover in the South African foreign-exchange market by type of transaction**



1996, 1997 and in the first half of 1998, resulting in an increase in swap turnovers.

In summary: The information contained in Table S-101 of this edition of the Quarterly Bulletin presents time series data on the value of turnover in the domestic market for foreign exchange, in accordance with internationally accepted specifications.