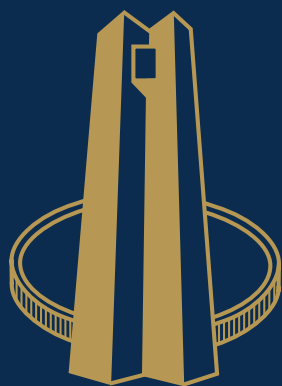
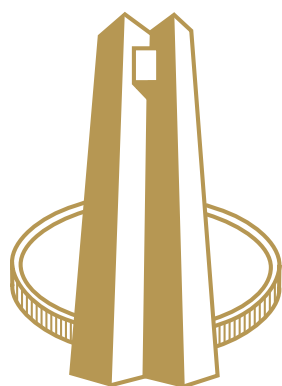


Quarterly Bulletin Kwartaalblad



South African Reserve Bank
Suid-Afrikaanse Reserwebank

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South African Reserve Bank

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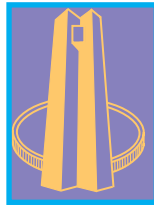
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Article

June 2000



South African Reserve Bank

Long-term yield bonds and future inflation in South Africa: a vector error-correction analysis

by G R Wesso

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Quarterly Economic Review

Introduction

Global economic activity expanded at a firm pace in the second half of 1999, following a period of subdued economic growth and heightened volatility in financial markets. As a consequence, the outlook for world economic growth has improved, as reflected in upward revisions to growth forecasts for 2000 by the International Monetary Fund and the Organisation for Economic Co-operation and Development.

A strengthening in world economic activity in the early months of 2000 was fairly broadly based, except for Japan where aggregate output declined. The outlook for Japan nevertheless remains one of a resumption of growth in the second half of 2000. The pace of activity in developing economies is also increasing, with the Asian emerging-market economies recovering rapidly from the output declines of 1998.

The latest developments in the world economy and the prospects for 2000 are more likely to help the South African economy along, rather than holding it back. The global recovery was expected to assist growth in the South African economy through international trade relations and higher commodity prices, and through increased international capital flows into the economy. Against this backdrop of rising expectations of an improvement in economic conditions, it was somewhat surprising when economic growth faltered in the first quarter of 2000 and international portfolio investors began to divest themselves of rand-denominated assets.

A sharp decline in agricultural production and a substantial slowdown in the growth of real output in manufacturing reduced aggregate output growth from an annualised rate of 3½ per cent in the fourth quarter of 1999 to just 1 per cent in the first quarter of 2000. Exceptional climatic conditions, as diverse as torrential rains and flooding in the north-eastern parts of the country and unseasonably high temperatures and widespread veld fires in the south-western parts, affected the agricultural sector adversely. Manufacturing output was also disrupted by the fall in agricultural output and by increased strike activity, but it is conceivable that some unintended inventory accumulation contributed to production cutbacks.

Aggregate spending growth in the economy slowed down too, almost exclusively owing to a sharp contraction in real consumption expenditure by general government. The growth in overall capital formation and household consumption expenditure continued to accelerate in the first quarter of 2000. General government is therefore making a contribution to the maintenance of macroeconomic stability in the country.

Unemployment remains high and the employment-creating capacity of the formal sector of the economy is still weak. But there are signs that the informal sector is absorbing increasing numbers of new entrants to the workforce: the latest available information indicates that overall employment in the economy increased between 1996 and 1998. Even so, the number of job seekers increased even faster, pushing the unemployment rate to 25 per cent in October 1998.

The growth in nominal earnings of workers slowed down appreciably in 1999. Labour productivity remained buoyant, reducing the growth in nominal unit labour costs to a rate roughly consistent with inflation in the lower end of the indicated infla-

tion target range. This is an essential contribution to the combatting of high inflation expectations. Apart from securing a decline in price inflation, moderate wage settlements, particularly when they do not fully match productivity growth, could serve the cause of employment growth.

Despite the slowdown in nominal wage growth, the rate of inflation at the production price and consumer price levels has been accelerating. Rising oil prices, the weakness of the rand and higher food prices because of the flood damage are all adding to existing inflationary pressures. There are also indications that producers could have been widening their operating margins. Because firms can no longer count on a generally inflationary monetary policy to validate their decisions to raise their own prices, margin widening could easily endanger the continuation of the current modest recovery in economic activity.

There was a healthy surplus on the overall balance of payments in the first quarter of 2000, even though the net inflow of international capital declined from the fourth quarter of 1999 to the first quarter of 2000. The surplus on the trade account increased somewhat as total export earnings rose slightly more than the nominal value of aggregate imports. This improvement was only partially countered by a modest widening of the deficit on the services account, leading to a small improvement on the current account of the balance of payments.

Strong international capital inflows in the last two quarters of 1999 weakened abruptly in the early months of 2000. Negative sentiment towards emerging markets generally, aggravated by regional concerns, caused an outflow of portfolio capital through the Bond Exchange in the first quarter of the year. Despite this setback, the external financial position of the economy remained healthy and international reserves continued to be accumulated. The Reserve Bank's net open position in foreign currency declined to its lowest level since 1996, gradually eliminating an element of perceived vulnerability of the South African financial system.

The rand came under downward pressure because of the turn in investor sentiment towards the country, but even more so because of the strength of the United States dollar on the international currency markets. The nominal effective exchange rate of the rand accordingly declined quite sharply in the first five months of 2000. By May 2000, the earlier strengthening of the rand on an inflation-adjusted basis might have been reversed substantially. The price competitiveness of domestic producers in export markets should have benefited from this recent depreciation of the external value of the rand.

As is usually the case shortly after a decline in bank lending rates, the growth in bank credit extension and overall monetary growth once again slowed down in the first quarter of 2000. This easing of monetary growth, of course, coincided with the slowdown in the growth of aggregate output and expenditure, but it was also assisted by a decline in the return on deposits at banks. Such a slowdown in monetary expansion, if it continues, would probably have a moderating impact on the inflation outlook and would in this way help to contain inflation. Current trends in credit growth also indicate that households are still cautious about using debt finance for current expenditure. This should help to reassure market participants that the recent increases in exogenously determined prices may not necessarily develop into a renewed acceleration of inflation.

Liquidity conditions tightened in the money market in the first five months of 2000. This was essentially the result of deliberate Reserve Bank intervention. The existence

of a liquidity requirement in the money market enables the Bank to guide the actions of market participants. From 14 January 2000 the repurchase rate remained at a level of 11,75 per cent at the daily auction for central bank funding.

Bond yields fell rapidly towards the end of 1999 and in the first two weeks or so of 2000. The positive sentiment in the market was encouraged by, among other things, a relaxation of monetary policy and lower demand for funds by the public sector in the domestic capital market. From around the middle of January 2000, downward pressure on bond prices was brought to bear by the weakening of the rand, the re-emergence of inflation pressures, increased uncertainty about the future direction of monetary policy and later also by developments in other parts of sub-Saharan Africa. Bond yields have generally moved higher since then.

Foreign buying in the domestic bond market picked up in 1999 as confidence in the prospects for South Africa improved. Sentiment appeared to have changed again and since the beginning of 2000 non-residents have been selling bonds on a net basis. The changed sentiment was apparently not confined to South Africa, but was part of a heightened global aversion to risk taking in emerging-market economies and a move back to quality assets in the advanced economies of the world. The spreads of emerging-market debt instruments over advanced economy debt have widened from March to April 2000.

The share market, which rebounded strongly in the final months of 1999 and in the first two weeks of 2000, faltered in the ensuing months. Falling interest rates and the acceleration in economic activity in the last two quarters of 1999 helped to boost the outlook for corporate earnings. From mid-January 2000, the rise in inflation and growing uncertainties about the future course of short-term interest rates might have dampened confidence and share prices declined steeply. Foreign participation in the share market fell as foreign investors were scared off by the weakness of the rand and concerns about stability in other parts of sub-Saharan Africa. Nevertheless, macro-economic policies have remained fundamentally sound and fairly modest price-earnings ratios suggest that the share market may have over-reacted.

Limited amounts of capital were raised in the primary debt market in the first quarter of 2000. To a significant extent this was related to the curtailment of the public-sector borrowing requirement, but private-sector demand for funds was also at a low ebb. There was some evidence, however, of an increase, albeit from a very depressed level, in the demand for debt financing by private-sector organisations.

The government continued to consolidate the fiscal position and improve the management of public finances during the past fiscal year. Unexpectedly strong growth in revenue and tight expenditure controls resulted in a lower-than-budgeted deficit of 2,6 per cent of gross domestic product in fiscal 1999/2000. A primary surplus, i.e. an excess of current revenue over expenditure when interest charges are not taken into consideration, is still being realised on the national government budgetary accounts. The absolute value of total government debt rose somewhat in the first quarter of 2000, but as a percentage of gross domestic product it fell to just more than 48 per cent. The slowdown in aggregate debt growth should help reduce interest costs over time and release resources for government's reconstruction, development and redistribution policies, and provide scope for introducing further tax reforms.

The disciplined fiscal policy is not in any way adding to existing demand pressures in the economy. Furthermore with regard to inflation containment, government is

encouraging overall moderation in remuneration growth through modest wage settlements in the public sector. Although a bias towards higher inflation in the economy has developed lately, the role played by government policies is likely to dampen second-round inflation effects. Government's contribution towards curbing inflation is, among other things, reinforced by the following:

- The recent slowdown in the growth in the monetary and credit aggregates;
- the slowdown in the pace of growth in nominal unit labour costs;
- reductions in customs duties as part of the process of ongoing trade liberalisation;
- the existence of ample excess production capacity in the manufacturing sector; and
- increased competition from external suppliers, which is keeping a lid on domestically generated inflation.

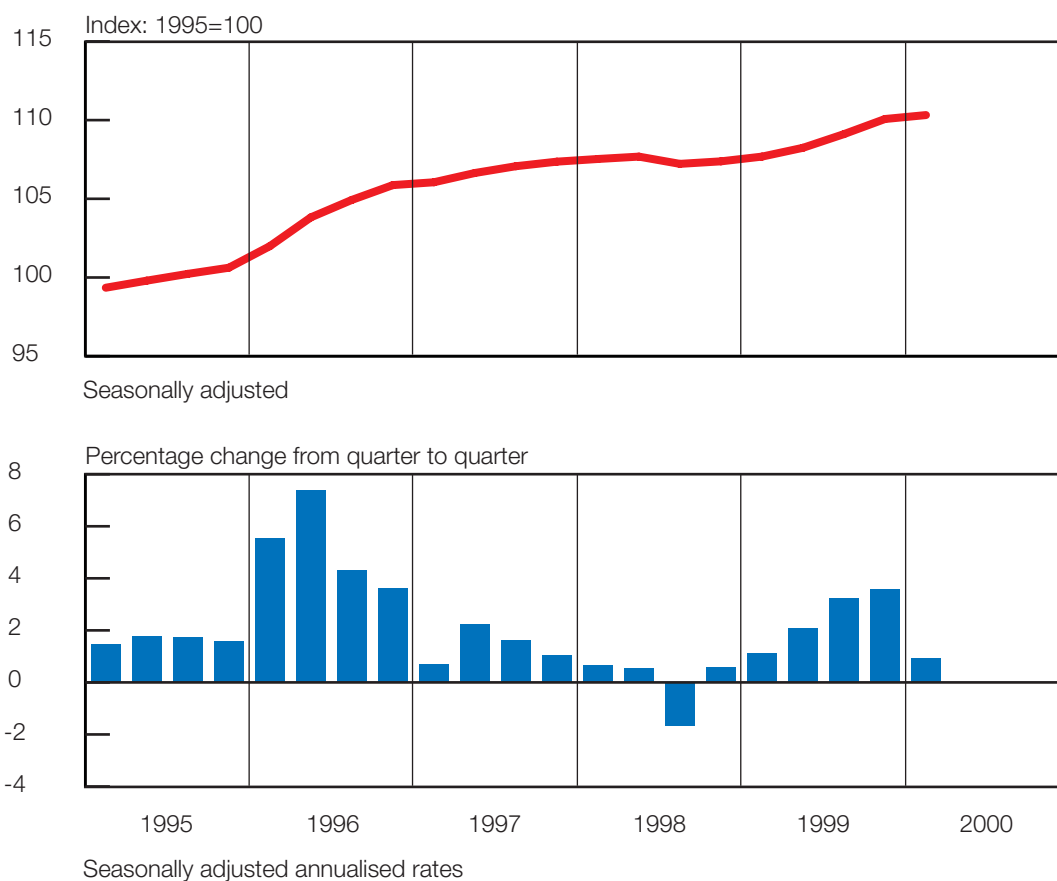
In the absence of any major random shock, these forces are likely to weigh down on price increases and reduce inflation to rates consistent with the Reserve Bank's targeted objectives.

Domestic economic developments

Domestic output

After five quarters of progressively stronger growth, the rate of expansion in the South African economy slowed down quite drastically in the first quarter of 2000. The annualised growth in the seasonally adjusted real gross domestic product fell from 3½ per cent in the fourth quarter of 1999 to just about 1 per cent in the first quarter of 2000. The total value of the real gross domestic product in the first quarter of 2000 was nevertheless still about 2½ per cent higher than in the first quarter of 1999.

Real gross domestic product



The slowdown in economic growth in the first quarter of 2000 was essentially a reflection of a *decline in the real value added by the agricultural sector* and slower growth in real output by the secondary sectors. Agricultural output rose strongly in the second half of 1999 as crops returned to normal levels following sharply reduced production volumes in 1998. In the first quarter of 2000, agricultural output in the eastern parts of the country was adversely affected by torrential rains and flooding, whereas in the south-western wine and deciduous fruit producing areas, extensive damage to crops was caused by high temperatures and veld fires.

Outside the agricultural sector, real value added (at basic prices) rose at a quarter-to-quarter annualised rate of 2 per cent in the first quarter of 2000 after an average increase of 2½ per cent had been recorded in the last two quarters of 1999. Growth over one year was also approximately 2 per cent in the first quarter of 2000.

Mining output increased at an annualised rate of 1 per cent in the first quarter of 2000. The industry's production contracted in the first three quarters of 1999, but output levelled out during the fourth quarter. The gold and diamond sectors raised output in the first quarter of 2000, but production volumes declined in the coal and other mining subsectors. Gold output responded to a rise in the price of gold in rand and also on account of efficiency gains made during 1999. These gains allow the industry to operate profitably at a lower gold price. Coal mines, faced by a general oversupply on international markets, had to curb output volumes, whereas platinum production topped out at the very high levels attained in the fourth quarter of 1999.

Real gross domestic product

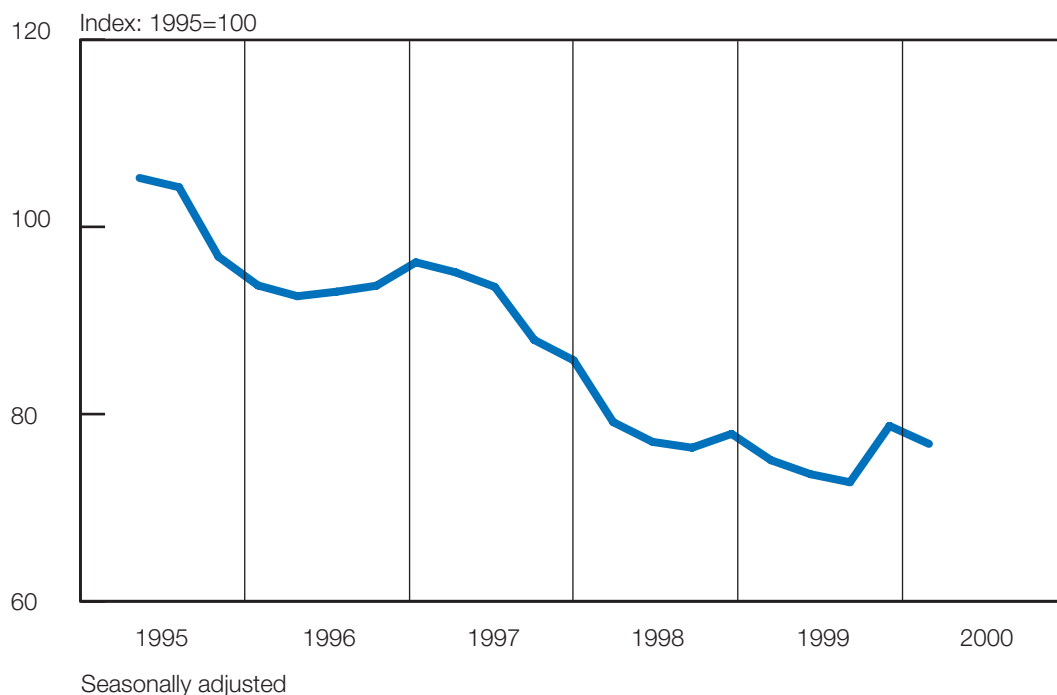
Percentage change at seasonally adjusted and annualised rates

Sectors	1999					2000
	1st qr	2nd qr	3rd qr	4th qr	Year	1st qr
Primary sectors.....	2½	6	13	5	1	-7½
Agriculture.....	7	16	38½	12½	4½	-17½
Mining.....	-½	-½	-2	0	-1	1
Secondary sectors.....	0	1½	3	6	0	½
Manufacturing.....	1	2	4	7	0	½
Tertiary sectors.....	1½	2	2	2½	2	2½
Non-agricultural sectors....	1	1½	2	3½	1	2
Total	1	2	3	3½	1	1

Manufacturing output rebounded in the second half of 1999, with seasonally adjusted growth at an annualised rate accelerating to 7 per cent in the fourth quarter of the year. In part, this strong output growth reflected the need to replenish inventories in order to meet rising demand. Demand growth in the first quarter of 2000 turned out to be somewhat less vigorous than anticipated earlier, causing some unplanned accumulation of inventories. This could have prompted some producers to curb their output expansion. Output was further affected by a spate of strikes and work stoppages in the first quarter and by delays in supplies caused by the disruption of agriculture production. Manufacturing output growth consequently slowed down to an annualised rate of just ½ per cent in the first quarter of 2000. The statistical carry-over effect of the high production volumes of the fourth quarter of 1999 still ensured year-on-year growth of 3½ per cent in the real value added by the manufacturing sector. The slight deterioration of manufacturers' sentiment was also reflected in a decline in the value of unfilled orders and in the rate of capacity utilisation during the first quarter of 2000.

The slowdown in overall economic activity led to weaker demand for electricity, and output growth in the sector supplying *electricity, gas and water* was flat in the first quarter of 2000. Because of the exceptionally wet season, supply and real output by water utilities actually declined. *Construction* activity was hampered by the high rainfall and showed virtually no growth from the fourth quarter of 1999 to the first quarter of 2000.

Real unfilled orders



The growth in the real value added by the *tertiary sectors* continued unabatedly at a seasonally adjusted and annualised rate of 2½ per cent in the first quarter of 2000. Output in the *transportation, storage and communication sector* was boosted by the continuing expansion of the telecommunications network and growth accelerated from an annualised rate of 3½ per cent in the fourth quarter of 1999 to 4½ per cent in the first quarter of 2000. In *commerce*, the growth in real value added received a fillip from strong household-sector demand and jumped from a quarter-to-quarter annualised rate of between 1½ per cent and 2 per cent in 1999 to 4½ per cent in the first quarter of 2000. Growth in the *financial intermediation, insurance, real-estate and business services sector* fell from an annualised rate of 7 per cent in the fourth quarter of 1999 to 3 per cent in the first quarter of 2000, mainly owing to a slow-down in the growth of demand in the financial services sector.

Domestic expenditure

The growth in aggregate domestic demand weakened somewhat in the first quarter of 2000, reflecting a fall in real consumption expenditure by general government. Aggregate *real gross domestic expenditure* increased at a quarter-to-quarter seasonally adjusted and annualised rate of 3 per cent in the first quarter of 2000, following growth at a rate of 4½ per cent in the fourth quarter of 1999. The year-on-year growth in real gross domestic expenditure was almost 3½ per cent in the first quarter of 2000, compared with a decline of 1 per cent during the second half of 1999.

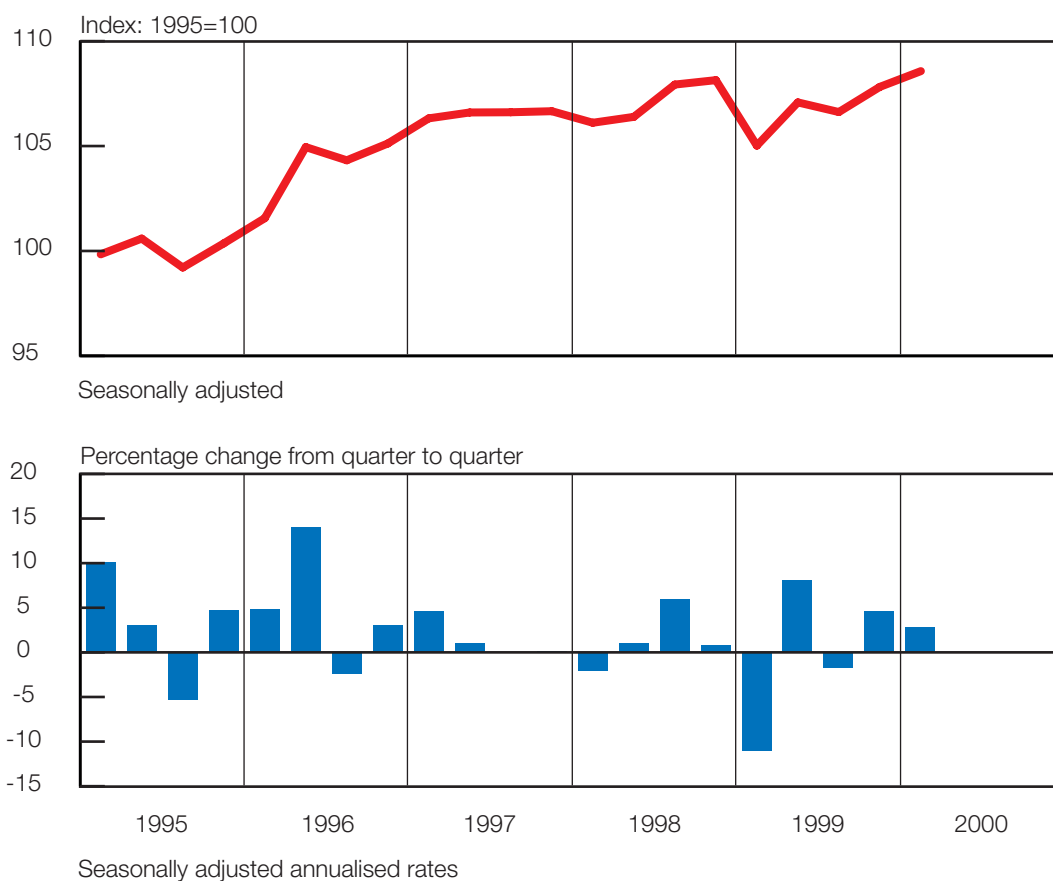
Real *final consumption expenditure by general government* declined at progressively increasing quarter-to-quarter annualised rates during 1999, reaching a decline of 3 per cent in the fourth quarter. It fell at an even faster annualised rate of 7½ per cent in the first quarter of 2000 as government departments and other organisations in the general government sector cut back their purchases of intermediate goods and economised on their remuneration expenditure. As a percentage of gross domestic

Real gross domestic expenditure

Percentage change at seasonally adjusted and annualised rates

Components	1999					2000
	1st qr	2nd qr	3rd qr	4th qr	Year	1st qr
Final consumption expenditure by households	-1	1	3	3	$\frac{1}{2}$	$3\frac{1}{2}$
Final consumption expenditure by general government	$-1\frac{1}{2}$	$-1\frac{1}{2}$	-2	-3	-2	$-7\frac{1}{2}$
Gross fixed capital formation	$-25\frac{1}{2}$	-9	-5	0	-7	$1\frac{1}{2}$
Domestic final demand	-6	-1	1	$1\frac{1}{2}$	-1	1
Change in inventories (R billions)	-9,7	3,8	0,2	4,2	-0,4	6,7
Gross domestic expenditure	-11	8	$-1\frac{1}{2}$	$4\frac{1}{2}$	$-\frac{1}{2}$	3

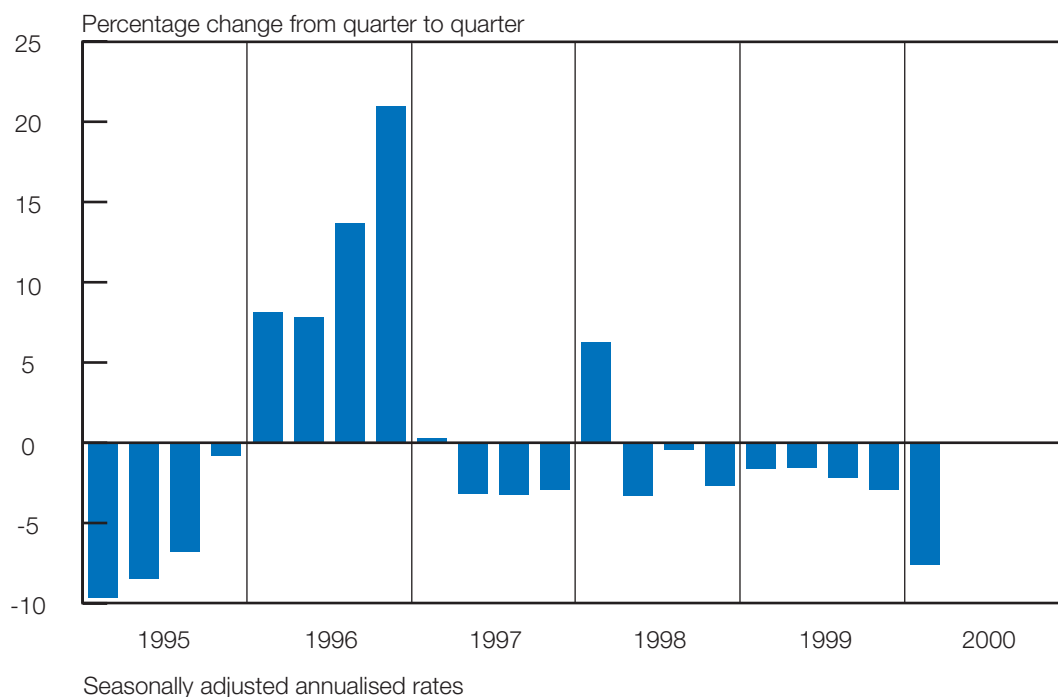
Real gross domestic expenditure



product, consumption expenditure by general government has now declined from $19\frac{1}{2}$ per cent in the first quarter of 1999 to $18\frac{1}{2}$ per cent in the first quarter of 2000.

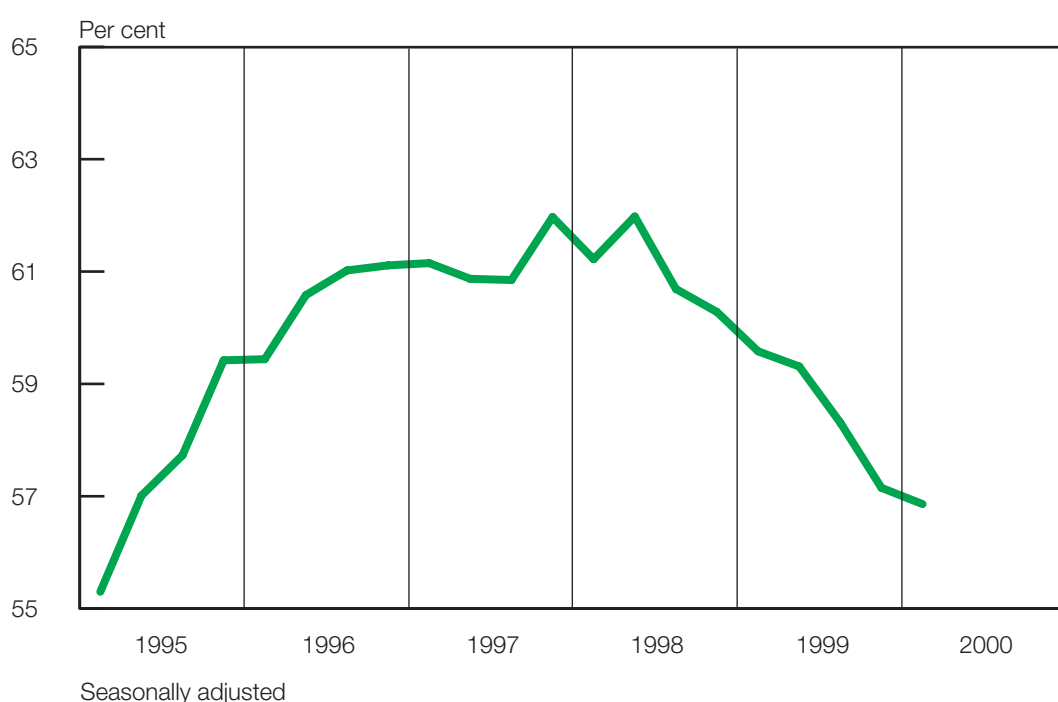
In sharp contrast to the steep decline in real general government consumption expenditure, the growth in real household consumption expenditure gathered momentum in the first quarter of 2000. The growth in *real final consumption expenditure by households* accelerated from a seasonally adjusted and annualised rate of 3 per cent in the fourth quarter of 1999 to $3\frac{1}{2}$ per cent in the first quarter of 2000.

Real final consumption expenditure by general government



A fall in bank lending rates, a lowering of effective income-tax rates and a rise in real remuneration of workers encouraged households to increase their consumption expenditure. Despite the growing optimism among consumers, they avoided excessive debt accumulation. As a result, household debt as a percentage of disposable income fell from 59½ per cent in the first quarter of 1999 to 57 per cent in the first quarter of 2000.

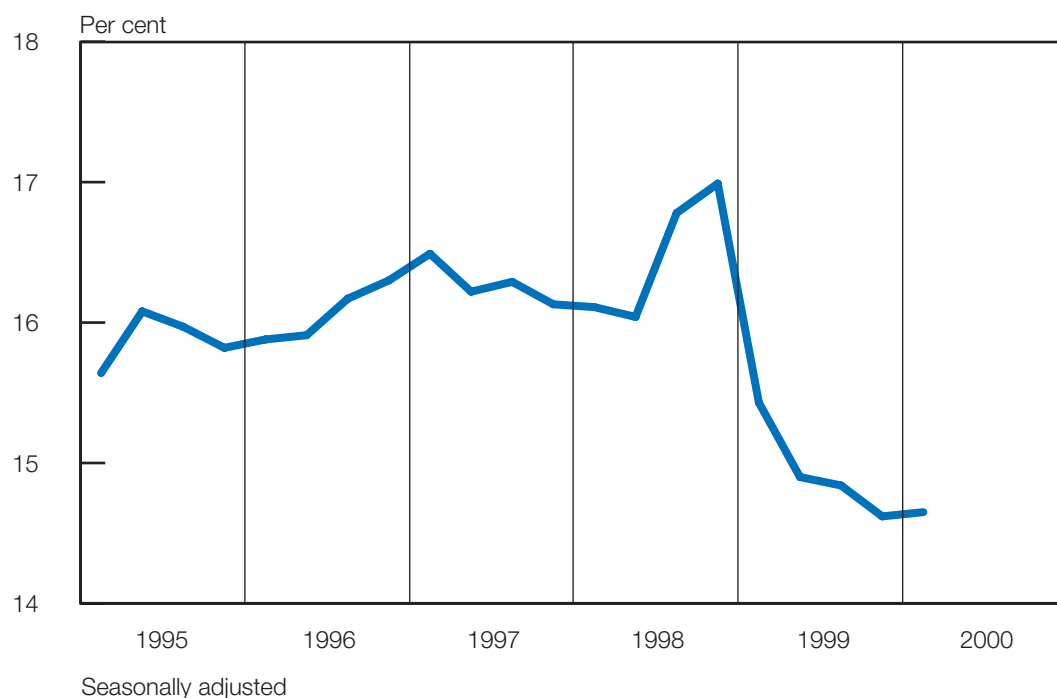
Household debt as percentage of disposable income



Increases occurred in all the major subcategories of household consumption expenditure during the first quarter of 2000. Boosted largely by consumer purchases of new motorcars and furniture, real expenditure by households on *durable goods* rose at a seasonally adjusted and annualised rate of 8½ per cent, following a decline at an annualised rate of 2 per cent in the fourth quarter of 1999. In the *semi-durables* category, higher spending was noted especially on clothing and footwear, household textiles and furniture. The less discretionary spending categories of non-durables and services also registered spending increases in real terms during the first quarter of 2000.

Real gross fixed capital formation remained virtually unchanged from the third quarter of 1999 to the fourth quarter, but increased modestly in the first quarter of 2000. There was an increase in the investment activities of private-sector firms, but capital expenditure by public corporations and general government declined in the first quarter of 2000. The reduction in fixed investment in 1999 and the small increase in the first quarter of 2000 meant that fixed investment as a percentage of gross domestic product has now fallen from 17 per cent in the fourth quarter of 1998 to 14½ per cent in the first quarter of 2000. At this level it is considered as insufficient to support economic growth at a rate high enough to lift the employment capacity of the economy.

Gross fixed capital formation as percentage of gross domestic product



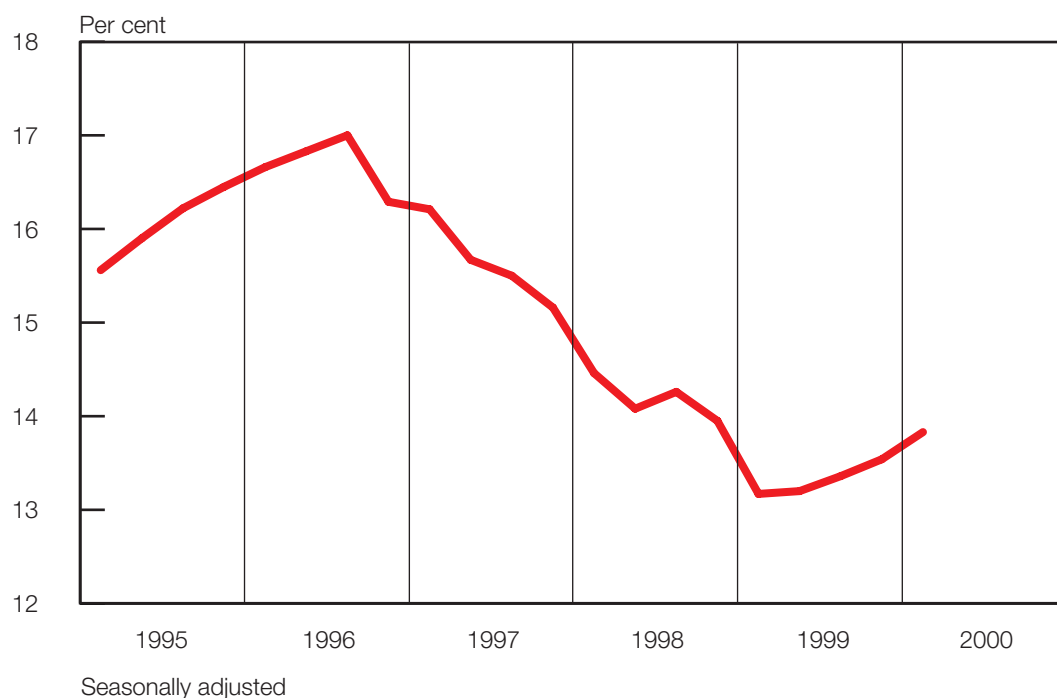
Private-sector fixed investment declined for eight consecutive quarters, before increasing at an annualised rate of 6½ per cent in the fourth quarter of 1999. This pick-up in fixed capital formation was sustained in the first quarter of 2000, albeit at a somewhat lower annualised rate of 3 per cent. Apart from the mining sector, all the main sectors of economic activity contributed to the expansion of private fixed investment activity. Companies apparently started to increase capital spending in

anticipation of stronger growth in domestic and export demand. Sharply lower interest rates as well as early indications of a rise in manufacturing capacity utilisation might also have triggered some fixed investment spending. Capital formation was further boosted by the acquisition of capital equipment by companies in the financial services industry, which is leased out to producers in the other goods and service producing sectors.

Public-sector fixed capital formation declined from quarter to quarter throughout 1999 and continued to fall in the first quarter of 2000, largely because of cuts in capital spending by public corporations. Real fixed capital expenditure by general government showed almost no change from the fourth quarter of 1999 to the first quarter of 2000; increased infrastructural expenditure was neutralised by a decline in spending by the business enterprises of general government.

During the last half of 1999 businesses were encouraged to replenish inventories in anticipation of a strengthening of aggregate demand. The strengthening of demand was somewhat below expectations in the first quarter of 2000. Despite a slowdown in output growth in manufacturing there was a further rise in inventory levels in the first quarter of 2000, part of which had apparently been unplanned. As a consequence, the ratio of industrial and commercial inventories to gross domestic product increased from 13 per cent in the first quarter of 1999 to 14 per cent in the first quarter of 2000.

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



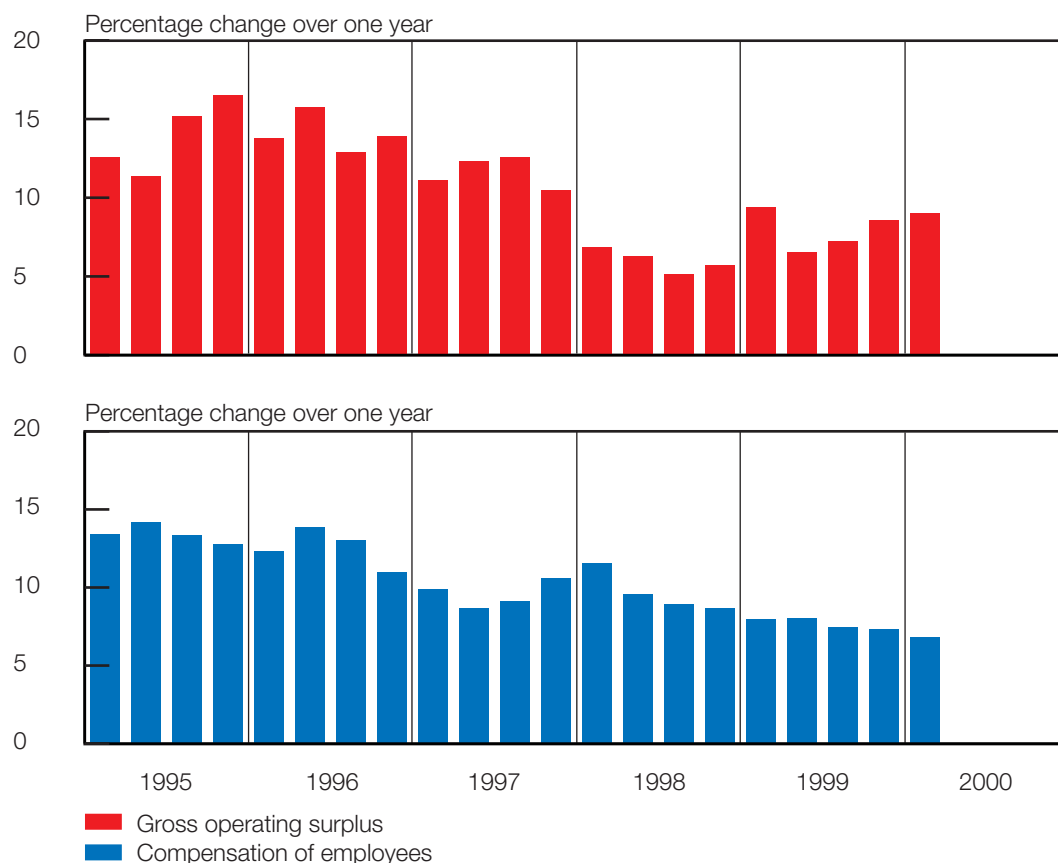
Factor income

The growth over four quarters in total nominal factor income increased slightly from 7½ per cent in the third quarter of 1999 to 8 per cent in the fourth quarter and then remained at that level in the first quarter of 2000. The unchanged growth in factor income in the first quarter of 2000 resulted essentially from slower growth in total employee compensation, which counteracted slightly stronger growth in the gross operating surpluses of businesses. These developments indicate that businesses might have widened their operating margins somewhat, in this way contributing to the existing upward pressures on production prices.

The rate of increase over four quarters in total *employee compensation* declined from 7½ per cent in the fourth quarter of 1999 to 7 per cent in the first quarter of 2000. This slowdown was particularly evident in the financial intermediation, insurance, business services and real-estate sector. In most of the other sectors of the economy, the growth in employee compensation remained broadly unchanged from the previous quarter. The growth in employee compensation nevertheless still exceeded contemporaneous consumer price inflation, and strengthened the real purchasing power of household income.

The growth over four quarters in *nominal gross operating surpluses* accelerated from 8½ per cent in the fourth quarter of 1999 to 9 per cent in the first quarter of 2000. Stronger increases were recorded in almost all the major non-agricultural sectors of the economy. Operating surpluses evidently benefited from the rising

Gross operating surplus and compensation of employees



turnovers that resulted from the relative strength in aggregate demand, some widening of operating margins and the fact that many firms had successfully economised on their overall compensation expenditures.

Domestic saving

After the *ratio of gross saving to gross domestic product* had deteriorated from the second quarter to the third quarter of 1999, there was a modest improvement to about 15½ per cent in the first quarter of 2000. This was mainly as a result of a reduction in the net dissaving of general government. The saving of private households and companies remained broadly unchanged from the fourth quarter of 1999 to the first quarter of 2000.

Despite the slight improvement in business conditions, corporate saving as a percentage of gross domestic product remained unchanged at the level of the fourth quarter of 1999. The rise in households' discretionary income resulting from lower debt servicing costs was mainly used for consumption expenditure, which left household saving unaltered as a percentage of gross domestic product.

The ongoing application of fiscal discipline caused general government dissaving as a percentage of gross domestic product to decline from 2½ per cent in the third quarter of 1998 to less than ½ per cent in the first quarter of 2000. This contributed most to the decline in the portion of capital expenditure financed by external sources from 4½ per cent in the fourth quarter of 1999 to 3½ per cent in the first quarter of 2000.

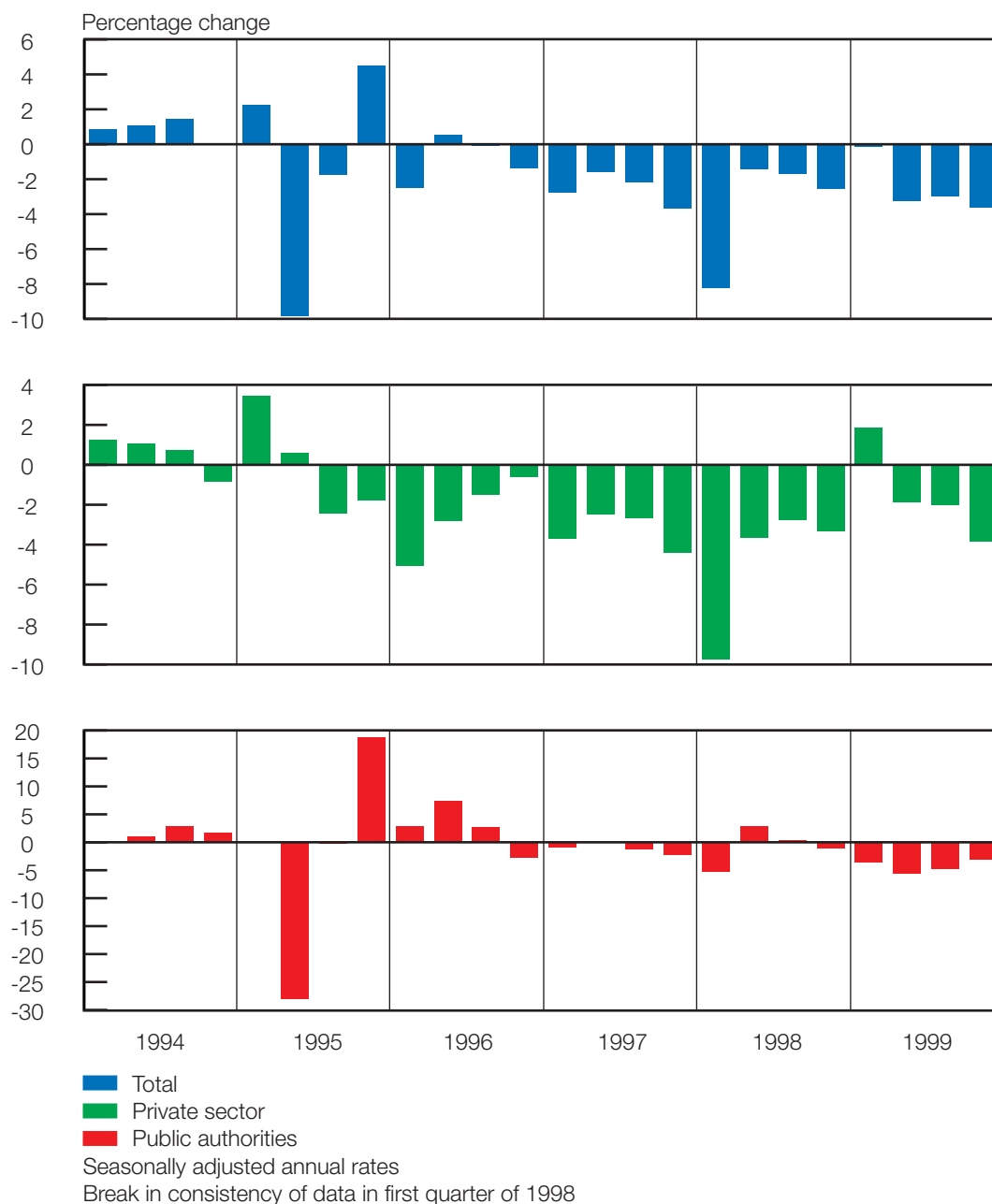
Employment

According to the *Survey of Total Employment and Earnings* by Statistics South Africa, approximately 4,79 million workers were employed in the formal non-agricultural sectors of the economy at the end of December 1999. This estimate of formal-sector employment signalled a decline of 121 000 employment opportunities or 2,5 per cent in 1999. The regular quarterly surveys further revealed a worsening in the rate of job destruction – whereas declines at an average annualised rate of 1,8 per cent occurred in the first three quarters of 1999, the rate of job losses accelerated to 3,6 per cent in the fourth quarter.

The acceleration in job losses in the course of 1999 was more pronounced in the *private sector* than in the public sector. In the second quarter of 1999, the rate of decline in private-sector job opportunities was estimated at 1,9 per cent, but this rate rose to 3,8 per cent in the fourth quarter. In contrast to this general deterioration in formal-sector job creation, new employment opportunities were created in the non-gold mining sector in the fourth quarter of 1999, while the rate of job attrition slowed down appreciably in the construction sector.

The pace at which jobs were destroyed in the *public sector* slowed down from a seasonally adjusted and annualised rate of 5,6 per cent in the second quarter of 1999 to 3,2 per cent in the fourth quarter. Nonetheless, new job opportunities were created at local government level in the fourth quarter of 1999. Furthermore, the indicated job losses in the public sector were exacerbated by the termination of the contracts of many part-time employees who had been involved in special projects.

Non-agricultural employment



Although there was no sign of a pick-up in the demand for labour in the quarterly surveyed formal non-agricultural sectors of the economy during 1999, the results of the *1998 October Household Survey* indicated an increase in overall employment in the economy from 9,3 million workers in October 1996 to 9,4 million in October 1998. Over the same period, however, the number of job-seekers increased at an even faster rate, causing the official estimate of unemployment to rise from 19,3 per cent of the economically active population in October 1996 to 25,2 per cent in October 1998. Prominent increases in informal-sector employment and employment in the agricultural sector were identified in the survey.

Surveys by a private-sector labour consultancy indicated that 100 000 workdays were lost due to industrial action in the first quarter of 2000 – substantially more than the 25 000 workdays lost in the first quarter of 1999, but still less than the first-quarter average of 140 000 for the past decade. Strike activity in the first quarter of 2000 was dominated by an unprocedural strike in the motor industry which lasted 11 days and led to the eventual dismissal of a large number of workers.

The Congress of South African Trade Unions (COSATU) embarked on a programme of public demonstrations to protest against on-going job losses, the amendment of the Insolvency Act and as a call for making retrenchment a negotiable issue. This programme manifested itself in all the major sectors of the economy at different times during the first quarter of 2000, consisting mainly of peaceful lunch-time demonstrations, marches and pickets with minimal disruption of work. The demonstrations culminated in a general strike on 10 May 2000 which reportedly could have had negative consequences for production volumes in the second quarter of 2000.

Official statistics indicate that only about one in five members of the working-age population is adequately skilled. Recognising this structural impediment to sustainable long-term economic growth, government enacted a skills levy which came into effect on 1 April 2000. Employers are required to pay this levy at a rate of 0,5 per cent of total payrolls, to be increased to 1 per cent from 1 April 2001.

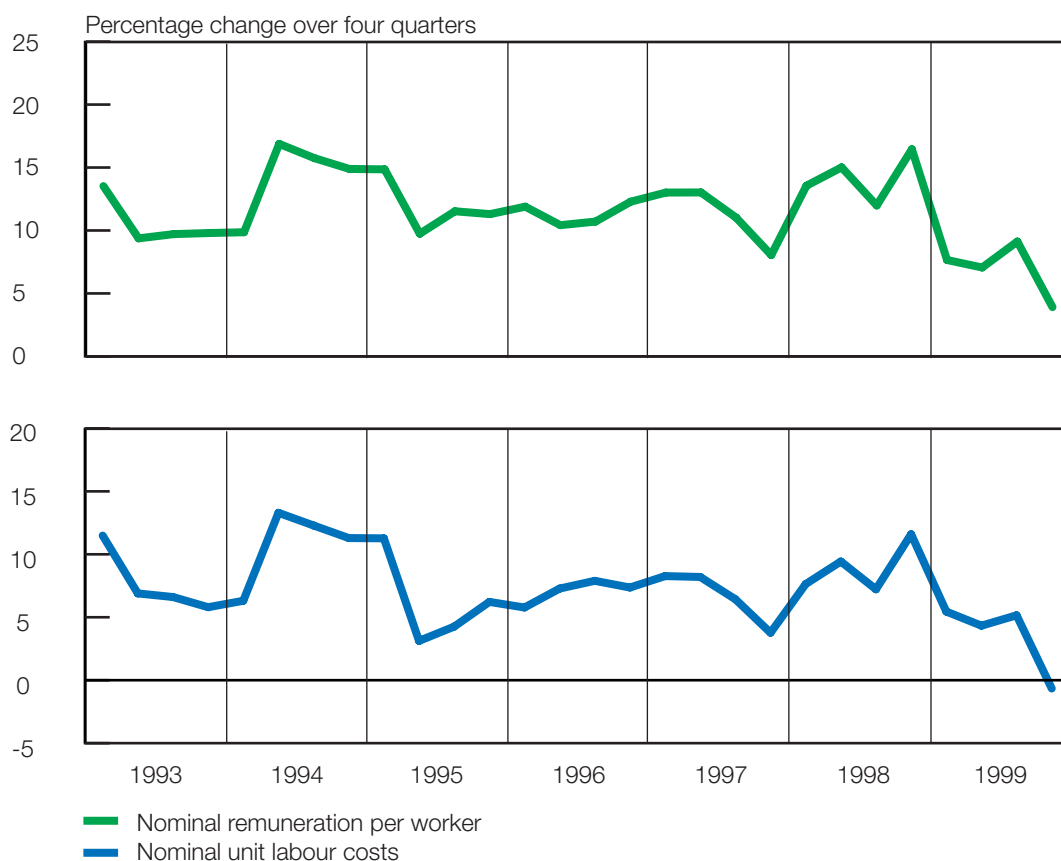
Labour costs and productivity

The growth in the *nominal remuneration per worker in the non-agricultural sectors* of the economy fell back from an average year-on-year rate of 7,9 per cent in the first three quarters of 1999 to 3,9 per cent in the fourth quarter. For 1999 as a whole, the average earnings of workers increased by 6,9 per cent, implying an increase in the *real consumption wage* (nominal remuneration per worker adjusted for consumer price inflation) of 1,7 per cent.

The slowdown in nominal earnings growth was led by the *public sector*. The growth in nominal remuneration per worker in the public sector slowed down from an average year-on-year rate of 5,5 per cent in the first three quarters of 1999 to 0,9 per cent in the fourth quarter. By slowing down the pace of earnings growth in the public sector, government is encouraging an overall slowdown in earnings growth that is consistent with the national objective of curbing inflation.

Salary and wage increases granted by *private-sector* institutions were, on average, more generous than those granted by the public sector during 1999. The year-on-year growth in nominal remuneration per worker slowed down from an average of 9,9 per cent in the first three quarters of 1999 to 6,7 per cent in the fourth quarter, but the average growth for the 1999 calendar year was still at 9,1 per cent, implying a rise of 3,7 per cent in the *real consumption wage of private-sector workers*.

Non-agricultural nominal remuneration per worker and unit labour costs



Nominal remuneration per worker rose marginally faster than output prices (as reflected by the price deflator for value added in the non-agricultural sectors of the economy) during 1999. This resulted in a small increase in the *real product wage* (i.e. nominal wage increases adjusted for output price inflation) of 0,3 per cent in 1999. During 1999, year-on-year growth in the real product wage accelerated from 0,1 per cent in the first quarter to 2,8 per cent in the third quarter, indicating that output price adjustments were increasingly lagging behind nominal wage developments. In the fourth quarter of 1999, the real product wage declined by 2 per cent – indicating that cost increases were still being partially absorbed by domestic producers in an environment of growing competition against external suppliers.

Despite the marked rise in industrial action in 1999, the growth in *real output per worker*, or labour productivity, in the formal non-agricultural sectors of the economy rose continuously from a year-on-year rate of 2,1 per cent in the first quarter of 1999 to 4,6 per cent in the fourth quarter. On average, production per worker increased at a year-to-year rate of 3,3 per cent in 1999. The improvement in labour productivity was not only a consequence of declining employment, but also of the broad-based economic recovery in the second half of 1999 and efficiency gains from the introduction of modern production technologies by South African producers.

Rising labour productivity contributed meaningfully to the containment of the growth in *nominal unit labour costs* (i.e. the ratio of nominal remuneration per worker to output per worker) during 1999. Unit labour costs rose by only 3,5 per cent in 1999, but declined on a year-on-year basis by 0,7 per cent in the fourth quarter. This was when the exceptionally strong increase in the fourth quarter of 1998 became included in the base for the calculation of year-on-year growth rates.

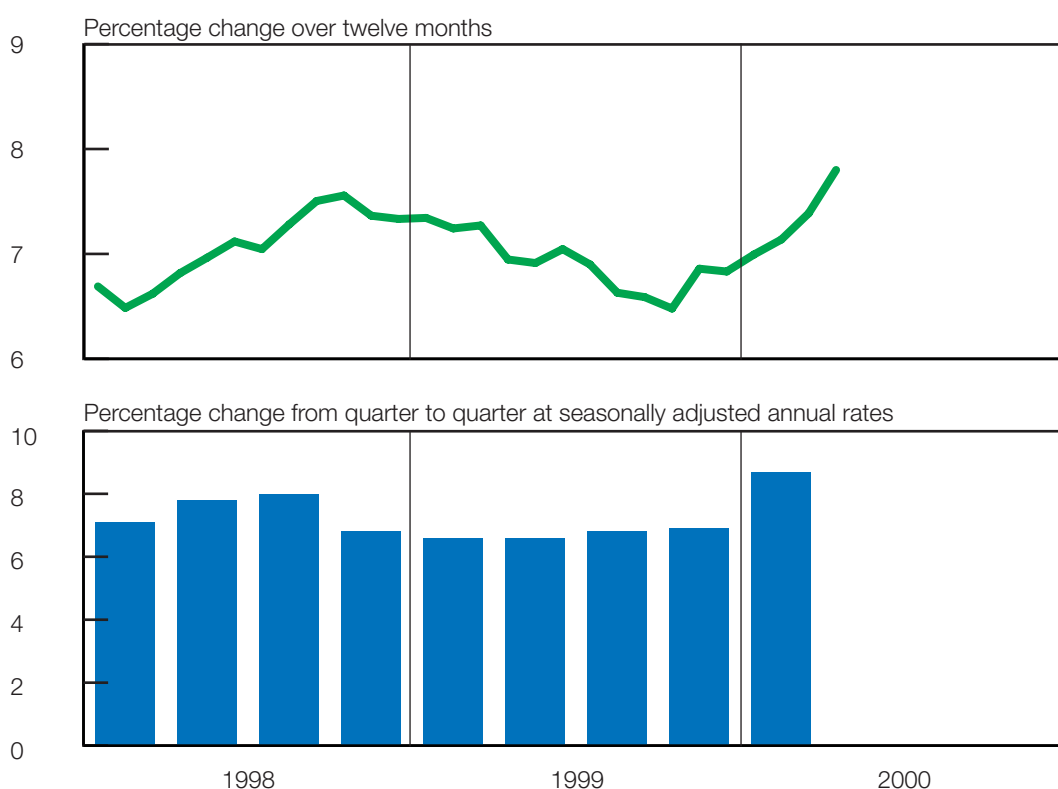
For the containment of price inflation, it remains essential that the growth in labour costs should continue to be moderate and not contribute to inflation expectations. In this way, wage developments would not endanger the sustainability of the current economic recovery and the ultimate reduction in the high level of unemployment. By the same token, production price developments should also not lead to an inappropriate widening of operating margins which could bring the recovery to a premature end.

Inflation

A new monetary policy framework based on the direct targeting of consumer price inflation was formally announced by the Minister of Finance when he presented his Budget proposals for the 2000/2001 fiscal year to Parliament. The inflation target was set as an average increase of between 3 and 6 per cent in 2002 in the overall consumer price index for metropolitan and other urban areas, excluding the influence of mortgage interest costs, or CPIX as it became known. The new approach was preferred to the previously applied "eclectic" approach because of certain advantages, such as

- the enhanced transparency of monetary policy;
- the formal co-ordination of macroeconomic policies to contain inflation in pursuit of the broader economic objective of sustainable high economic growth and employment creation;
- the focusing of monetary policy on a single objective and the enhanced accountability of the Reserve Bank; and
- the provision of an anchor for formulating expectations of future inflation which is expected to have a bearing on price and wage setting.

Consumer price index (CPIX)*



* Overall consumer price index for metropolitan and other urban areas, excluding interest rates on mortgage bonds

Over the past year or so the twelve-month rate of increase in the new benchmark index slowed down from 7,3 per cent in March 1999 to 6,5 per cent in October. CPIX then accelerated to 7,8 per cent in April 2000. Over the same period, the quarter-to-quarter increase in CPIX accelerated from a seasonally adjusted annualised rate of 6,8 per cent in the third quarter of 1999 to 8,7 per cent in the first quarter of 2000 – the highest quarter-to-quarter increase in more than three years.

The year-on-year rate of *overall consumer price inflation* declined from 9,4 per cent in November 1998 to 1,7 per cent in October 1999, mainly because of the steep decline in mortgage bond rates over this period. Subsequently overall consumer price inflation accelerated to 4,5 per cent in April 2000 as inflation in the prices of consumer goods picked up and the low base established by the reduction in mortgage bond rates in 1999 began to enter the calculation of year-on-year inflation.

Measured from quarter to quarter, overall consumer price inflation accelerated from 3,0 per cent in the fourth quarter of 1999 to 6,6 per cent in the first quarter. This acceleration arose mainly from a turnaround in the prices of *consumer services*, which went from a deflation rate of 0,9 per cent in the fourth quarter of 1999 to a rate of increase of 5,3 per cent in the first quarter of 2000. This inflation reversal was essentially related to the waning impact that declines in mortgage bond rates had on overall price changes. Inflation in the prices of consumer goods also accelerated from an annualised rate of 7,3 per cent in the fourth quarter of 1999 to 8,4 per cent in the first quarter of 2000. The persistence of high inflation in the prices of consumer goods was caused by the rising prices of petrol and diesel, food at the retail level, and alcoholic beverages and tobacco. The underlying reasons for these price increases were the rising cost of imported goods following the depreciation of the rand during the early months of 2000, the damage caused to crops and harvests by the recent floods and the impact on certain prices of the increase in excise duties announced in the budget of the National Government.

Paramount among the reasons for the acceleration in CPIX inflation were the rising transport costs associated with the steep rise in the international price of crude oil and higher food prices following extensive damage to crops and harvests caused by the recent torrential rains and flooding in many parts of the country. If the increases in the prices of food, petrol and diesel are excluded, the rise in CPIX from April 1999 to April 2000 could have been 1,7 percentage points lower than the actual measure of inflation.

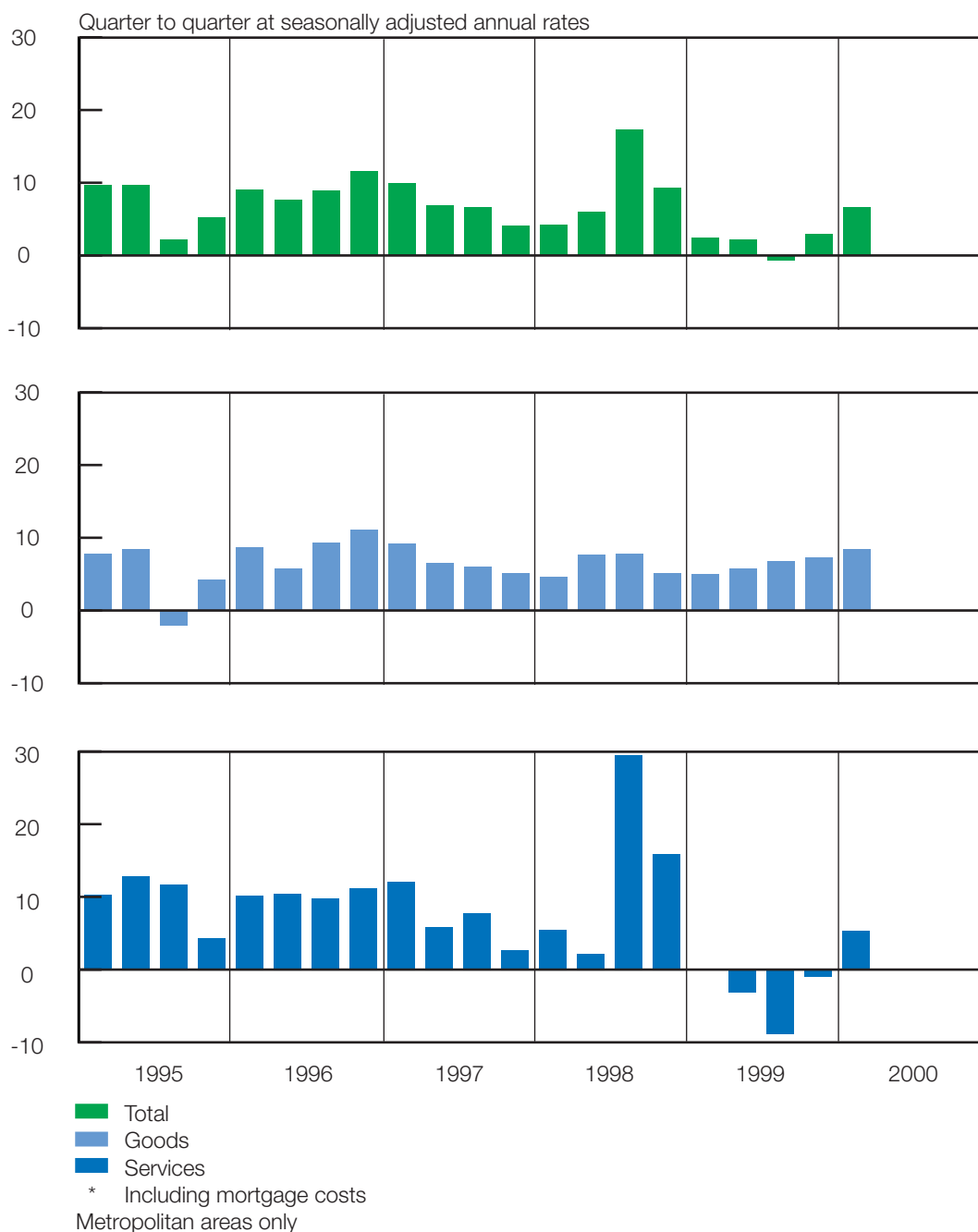
Consumer prices*

Quarter-to-quarter changes at annualised rates

Period	Goods	Services	Overall
1998: Year	6,0	7,9	6,9
1999: 1st qr	5,0	0,1	2,5
2nd qr	5,8	-3,2	2,2
3rd qr	6,8	-8,8	-0,7
4th qr	7,3	-0,9	3,0
Year	6,1	4,2	5,2
2000: 1st qr	8,4	5,3	6,6

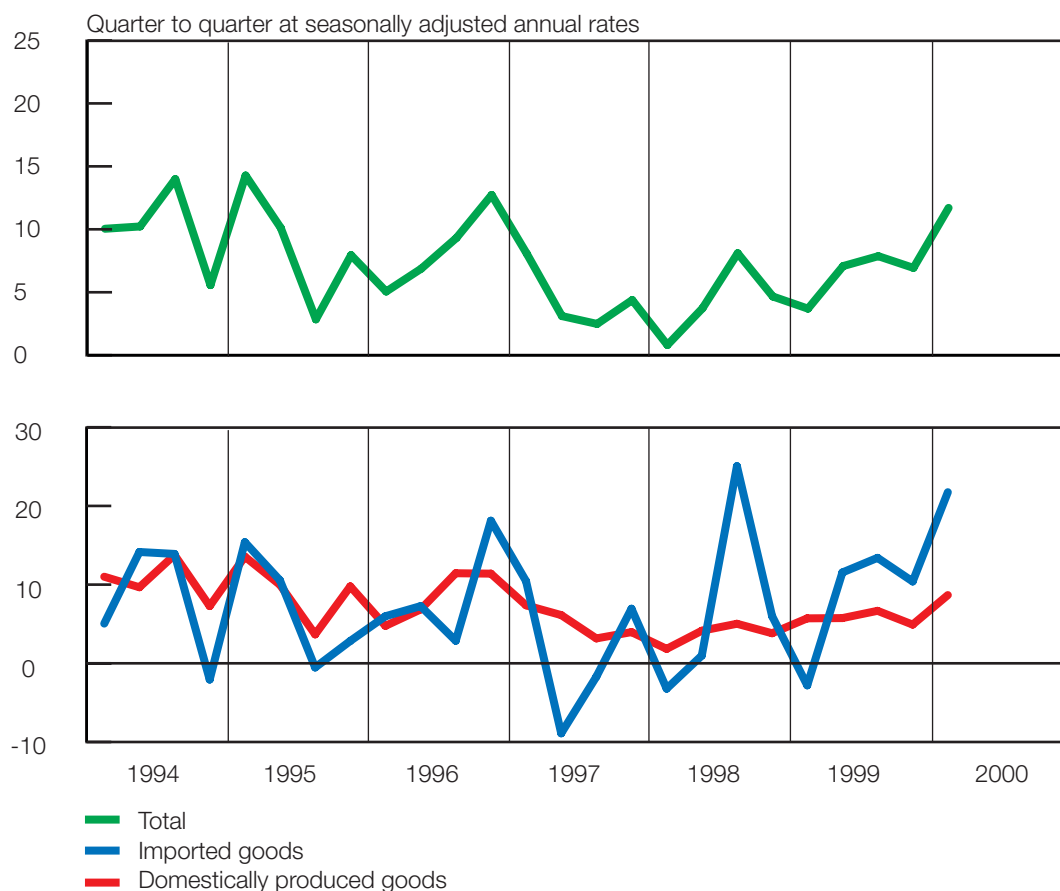
* For metropolitan areas only

Consumer prices*



Inflation in production prices, which usually foreshadows consumer price changes, has risen sharply in recent months. The year-on-year rate of increase in the *all-goods production price index* almost doubled from 4,4 per cent in January 1999 to 8,6 per cent in March 2000 and 10,1 per cent in April. Measured from quarter to quarter, inflation in production prices rose from a seasonally adjusted and annualised rate of 6,9 per cent in the fourth quarter of 1999 to 11,7 per cent in the first quarter of 2000. Higher rates of increase in the prices of both domestically produced goods and imported goods contributed to this acceleration in production price inflation.

Production prices



Inflation in the prices of *domestically produced goods* accelerated from a seasonally adjusted and annualised rate of 4,9 per cent in the fourth quarter of 1999 to 8,7 per cent in the first quarter of 2000. Prices increased steeply over a broad front: petrol and diesel, food, alcoholic beverages and tobacco, textiles, clothing and footwear, electricity, gas and water, and mining products. Measured over periods of twelve months, the prices of domestically produced goods rose by 8,0 per cent in the year to April 2000, considerably more than the year-on-year rise of 3,2 per cent recorded less than two years earlier in June 1998.

Production prices

Quarter-to-quarter changes at annualised rates

Period	All-goods production prices	Domestically produced goods	Imported goods
1998: Year	3,5	3,5	3,1
1999: 1st qr	3,7	5,7	-2,8
2nd qr	7,1	5,7	11,5
3rd qr	7,9	6,7	13,4
4th qr	6,9	4,9	10,4
Year	5,8	5,3	7,8
2000: 1st qr	11,7	8,7	21,7

The quarter-to-quarter increase in the prices of *imported goods* accelerated from 10,4 per cent in the fourth quarter of 1999 to 21,7 per cent in the first quarter of 2000. Over and above the very sharp increase in the international prices of crude oil, the recent weakness of the rand contributed to the acceleration in the prices of imported goods. Sizeable price increases were recorded in a number of categories of imported goods, such as basic metals, chemicals and chemical products, wearing apparel and non-food agricultural products. In April 2000, the aggregate price level of imported goods was 16,2 per cent higher than in April 1999.

Foreign trade and payments

Current account

After having advanced strongly in the fourth quarter of 1999, the rate of increase in merchandise imports slowed down noticeably in the first quarter of 2000. The weaker growth in import demand was most likely related to the slowdown in aggregate domestic demand over this period. In nominal terms, however, increases in the value of merchandise and net gold exports more than offset the higher value of merchandise imports. Despite a slight deterioration in the deficit on the services account, the deficit on the current account of the balance of payments (seasonally adjusted and annualised) accordingly improved from R5,6 billion in the fourth quarter of 1999 to R4,7 billion in the first quarter of 2000. As a ratio of the gross domestic product, the current account deficit was reduced fractionally from 0,7 per cent in the fourth quarter of 1999 to 0,6 per cent in the first quarter of 2000.

Balance of payments on current account

Seasonally adjusted and annualised
R billions

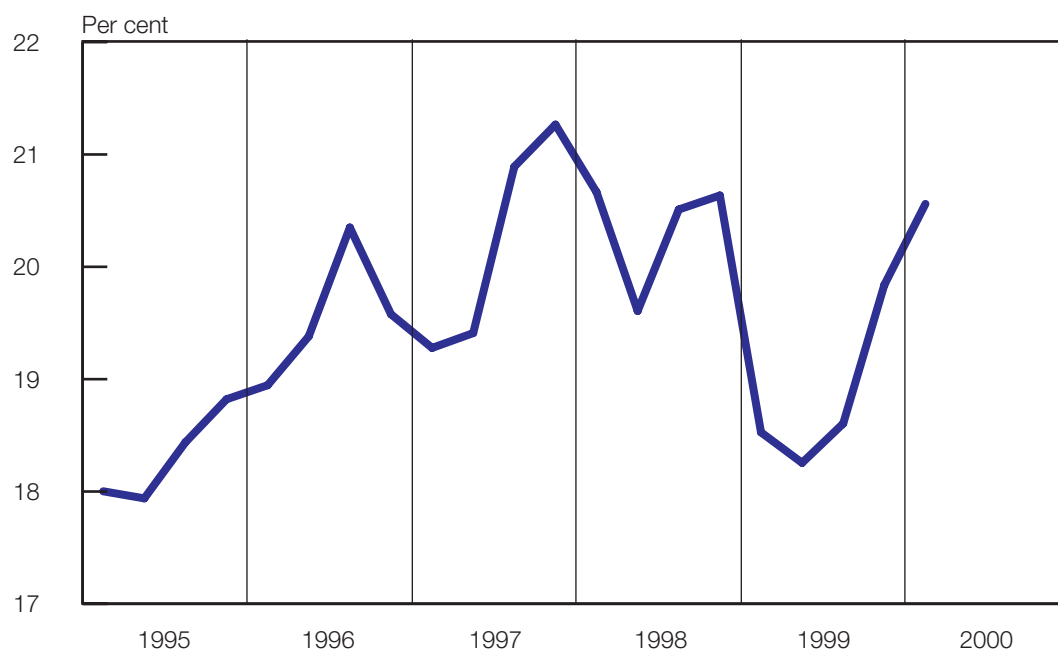
	1999					2000
	1st qr	2nd qr	3rd qr	4th qr	Year	1st qr
Merchandise exports	147,2	139,6	148,2	161,0	149,0	174,7
Net gold exports.....	24,7	23,8	22,9	25,7	24,3	27,0
Merchandise imports	-142,6	-142,5	-149,7	-166,7	-150,4	-180,4
Net service, income and current transfer payments	-26,5	-24,6	-26,3	-25,6	-25,8	-26,0
Balance on current account	2,8	-3,7	-4,9	-5,6	-2,9	-4,7

The *value of merchandise imports* (seasonally adjusted and annualised) which had risen by 11,4 per cent in the fourth quarter of 1999, rose by 8,2 per cent to R180,4 billion in the first quarter of 2000. The higher value of imported goods could mainly be attributed to an increase in the value of manufactured goods. Strong increases were registered, especially in the category for vehicle and transport equipment. The physical volume of oil imports declined, but the impact that this could have had on the value of oil imports was partly neutralised by higher oil prices in the first quarter of 2000.

Despite the lower growth in real gross domestic expenditure and the lower oil imports, *merchandise import volumes* increased by about 4½ per cent in the first quarter of 2000, following growth of almost 8 per cent in the fourth quarter of 1999. This was the fourth consecutive quarter of growing import volumes and it took the portion of real gross domestic demand that is satisfied through imports of goods (i.e. the “import penetration ratio”) from 18½ per cent in the second quarter of 1999 to 20½ per cent in the first quarter of 2000. A slight acceleration in wholesale prices in trading-partner countries and the depreciation of the rand caused the prices of imported goods in rand to rise by 3,8 per cent in the first quarter of 2000.

The seasonally adjusted and annualised *value of merchandise exports* rose by 8½ per cent in the first quarter of 2000 to a level of R174,7 billion. Increases were recorded in all three main categories of merchandise exports, namely mining, agriculture and manufacturing. Exports of base and platinum group metals boosted mining exports, whereas increases in the subcategories for machinery and electrical equipment contributed to the higher value of exports of manufactured goods. The value of exports of agricultural products rose only marginally in the first quarter of 2000.

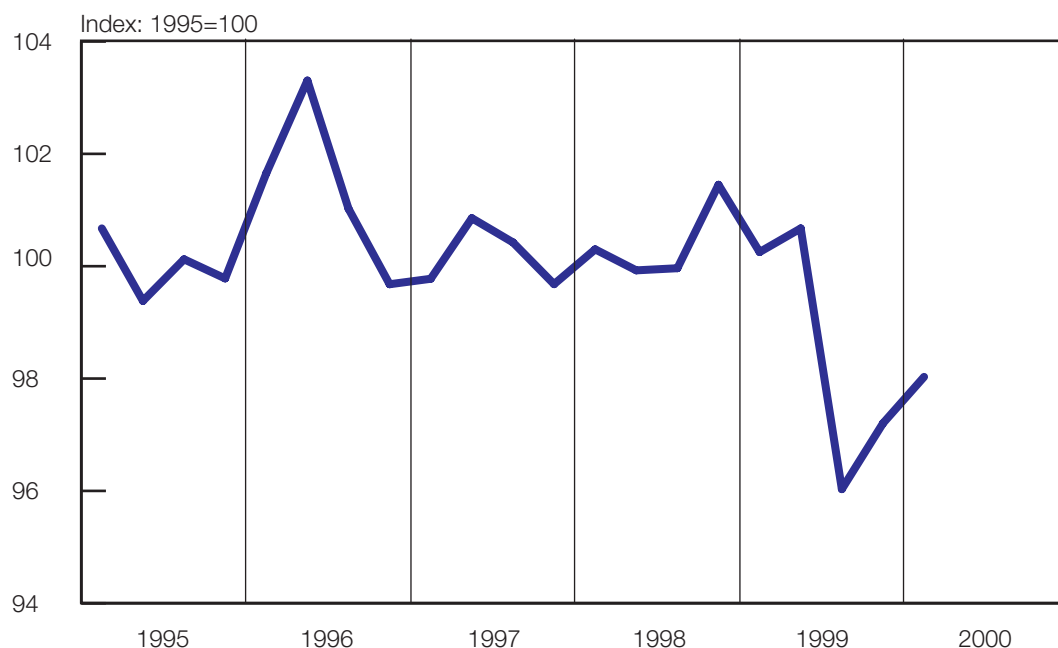
Import penetration ratio



The *prices in rand of merchandise exports* increased by 4 per cent from the fourth quarter of 1999 to the first quarter of 2000. International commodity prices improved slightly, but more important for the increase in export values was the depreciation of the rand against the US dollar. The terms of trade, which had deteriorated sharply in the third quarter of 1999, improved somewhat in the last quarter of 1999 and again in the first quarter of 2000, but still have not fully regained the losses of last year. Merchandise export volumes rose by 4½ per cent in the first quarter of 2000, only slightly slower than the average rate of 5 per cent per quarter attained in the second half of 1999.

The annualised *value of net gold exports* increased further by 5,1 per cent to R27,0 billion in the first quarter of 2000. The volume of gold exported declined somewhat, but the increase in the price per fine ounce was sufficient to secure the increase in nominal value. Assisted by the depreciation of the rand, the average realised gold price firmed from R1 834 per fine ounce in the fourth quarter of 1999 to R1 953 per fine ounce in the first quarter of 2000. In dollars, the fixing price of gold declined from US\$296 per fine ounce to US\$290 per fine ounce over the same period.

Terms of trade including gold



Net service, income and current transfer payments to non-residents rose modestly from a seasonally adjusted and annualised value of R25,6 billion in the fourth quarter of 1999 to R26,0 billion in the first quarter of 2000. This slight deterioration in the deficit on the services account could be attributed to an increase in service payments which outweighed higher service receipts. Although income from dividends and interest rose in the first quarter of 2000, it was neutralised by higher payments to non-resident organisations for transportation and travel services rendered.

Financial account

The balance on the financial account, which had shown inflows of capital at an increasing rate throughout 1999, contracted sharply from the fourth quarter of 1999 to the first quarter of 2000. The surplus on the financial account (including unrecorded transactions, but excluding reserve-related liabilities) declined from R13,8 billion in the fourth quarter of 1999 to R3,2 billion in the first quarter of 2000. Investors' sentiment towards South Africa turned negative in the first quarter as part of a global reassessment of risk-taking in emerging markets and heightened volatility in asset prices. Despite having been assessed as an investment-grade country by the Standard and Poor's rating agency, non-residents sold bonds in large amounts during the first five months of 2000.

International capital flows for the financing of *foreign direct investment* into South Africa increased from R3,2 billion in the fourth quarter of 1999 to R4,5 billion in the first quarter of 2000. The bulk of this inflow came from the acquisition of a domestic information technology company by a United States corporation. Direct outward investment by resident companies changed from an inflow of R2,7 billion in the fourth quarter of 1999 (which resulted mainly from the sale by a South African company of a controlling interest in a United Kingdom listed company to a non-resident) to an outflow of R1,3 billion in the first quarter of 2000. The outflow in the first quarter was essentially direct equity flows from South African residents seeking to diver-

sify their assets into other markets. It should not be seen as a lack of confidence in the future wealth-creating capacity of the South African economy. On a net basis, direct investment capital still flowed into the South African economy in the first quarter of 2000, albeit at R3,2 billion, which is by far less than the inflow of R5,9 billion in the fourth quarter of 1999.

Net financial transactions not related to reserves

R billions

	1999				2000	
	1st qr	2nd qr	3rd qr	4th qr	Year	1st qr
Liabilities						
Direct investment.....	2,0	1,5	1,7	3,2	8,4	4,5
Portfolio investment	10,8	26,2	29,9	15,5	82,4	4,6
Other investment	-2,2	-3,3	-9,1	-4,8	-19,4	3,2
Total liabilities	10,6	24,4	22,5	13,9	71,4	12,3
Assets						
Direct investment.....	-4,5	-3,0	-2,0	2,7	-6,8	-1,3
Portfolio investment	-6,7	-10,9	-6,1	-7,6	-31,3	-11,2
Other investment	-1,5	-0,6	-3,7	-2,4	-8,2	-2,5
Total assets	-12,7	-14,5	-11,8	-7,3	-46,3	-15,0
Total financial transactions*	2,6	4,1	6,8	13,8	27,3	3,2

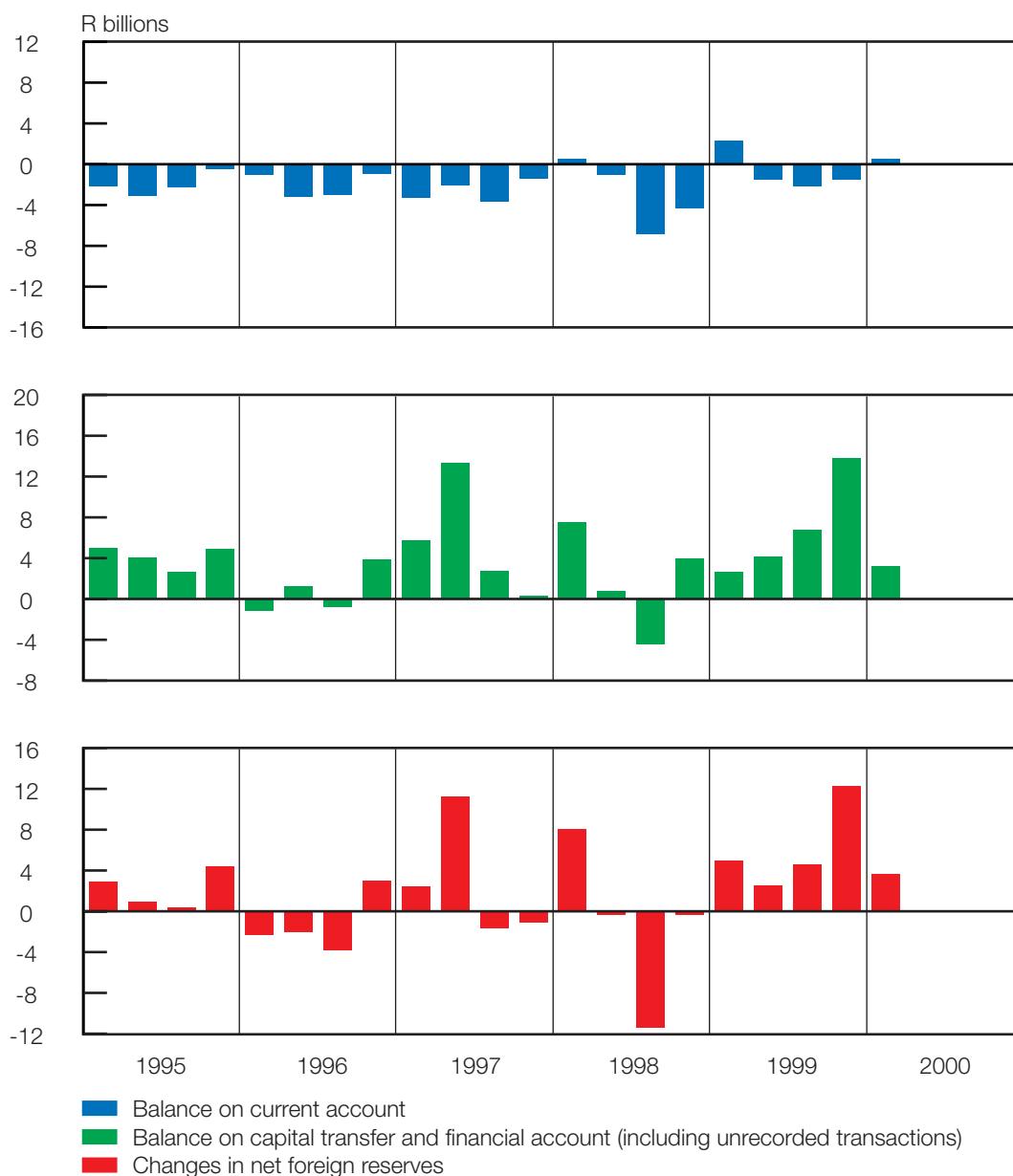
* Including unrecorded transactions

Foreign portfolio investments into South Africa fell from R15,5 billion in the fourth quarter of 1999 to R4,6 billion in the first quarter of 2000 as risk aversion towards emerging market economies mounted. Among other things, non-resident investors sold on a net basis part of their holdings of domestic fixed-interest securities. Offsetting this decline in portfolio investment were international bond issues of US\$750 million by the National Government and €500 million by Telkom. There was also a further inflow of foreign equity portfolio capital, but this was significantly lower than the inflow of the fourth quarter of 2000.

As part of their asset diversification strategies, South African institutional investors and individuals continued to broaden their holdings of foreign assets under the existing exchange control regulations. Resident portfolio outflows accordingly accelerated from R7,6 billion in the fourth quarter of 1999 to R11,2 billion in the first quarter of 2000. A sizeable portion of the outflows in the first quarter of 2000 stemmed from the allocation of shares in a United States corporation to a South African resident in compensation for the acquisition of the information technology company referred to previously. In total, net portfolio investment changed from an inflow of R7,9 billion in the fourth quarter of 1999 to an outflow of R6,6 billion in the first quarter of 2000.

Other inward foreign investment to South Africa turned from an outflow of R4,8 billion in the fourth quarter of 1999 to an inflow of R3,2 billion in the first quarter of 2000. This inflow consisted mainly of capital flows to and from private banks and other private creditors, mainly in the form of changes in outstanding loans, trade finance and bank deposits. As was the case in the fourth quarter of 1999, non-residents reduced their foreign-currency denominated deposits with South African banks in the first quarter of 2000. This outflow was reinforced by scheduled debt repayments to foreign creditor banks. Offsetting these outflows were long-term and short-term borrowing by private-sector companies and public-sector corporations.

Overall balance of payments position

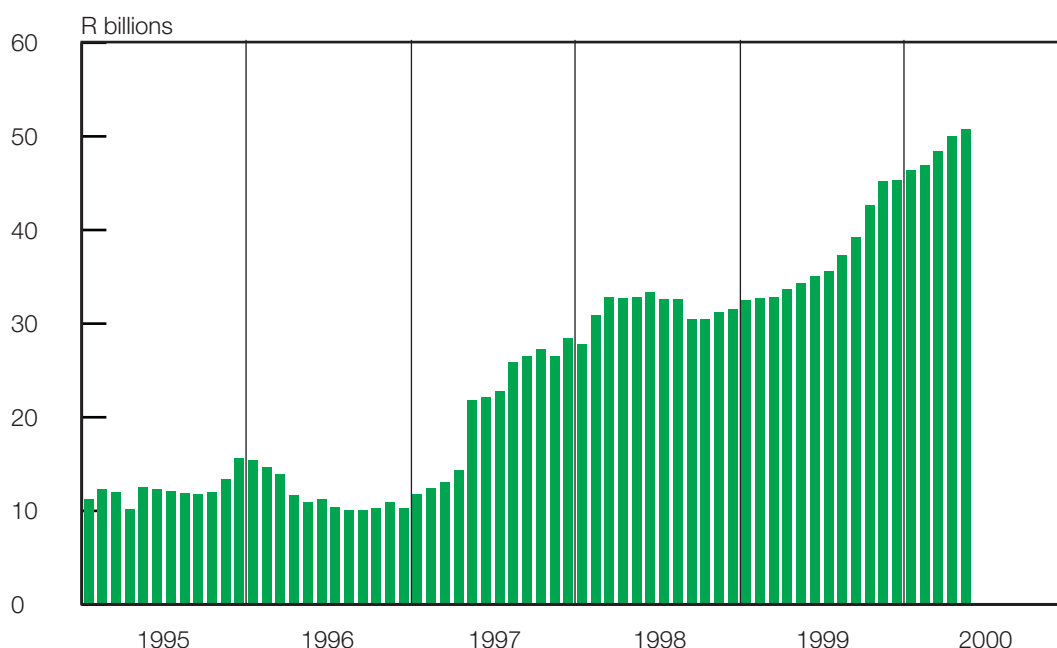


Other outward investment flows from the economy, consisting mainly of changes in foreign assets, such as loans granted, trade finance provided and deposits with non-resident banks, amounted to R2,4 billion in the fourth quarter of 1999 and R2,5 billion in the first quarter of 2000. On a net basis, there was an inflow of R0,7 billion in the first quarter of 2000, compared with an outflow of R7,2 billion in the fourth quarter of 1999.

Foreign reserves

South Africa's overall balance of payments was in surplus to the amount of R3,6 billion in the first quarter of 2000, compared with a surplus of R12,3 billion in the fourth quarter of 1999. Net international reserves were consequently accumulated at a far slower rate than in the fourth quarter of 1999, reflecting essentially the shrinking of net capital inflows into the economy.

Gross foreign reserves of the South African Reserve Bank



The country's *gross gold and other foreign exchange reserves*, which had reached R67,5 billion at the end of December 1999, improved further to R71,4 billion at the end of March 2000. In US-dollar terms, the country's international reserves declined marginally from US\$11,0 billion at the end of December 1999 to US\$10,9 billion at the end of the first quarter of 2000. Import cover, defined as the value of gross international reserves expressed as a ratio of the value of imports of goods and services, remained at about 15 weeks' worth of imports – roughly the same as at the end of December 1999.

The gross international reserves of the Reserve Bank rose steadily in 1999 to a level of R45,4 billion at the end of the year. There was a further improvement to R48,5 billion at the end of March 2000 and R50,8 billion at the end of May. The Reserve Bank also reduced the use of short-term foreign credit lines from R18,8 billion at the end of December 1999 to R16,5 billion at the end of March. However, outstanding short-term foreign credit lines increased again to R17,1 billion at the end of May 2000.

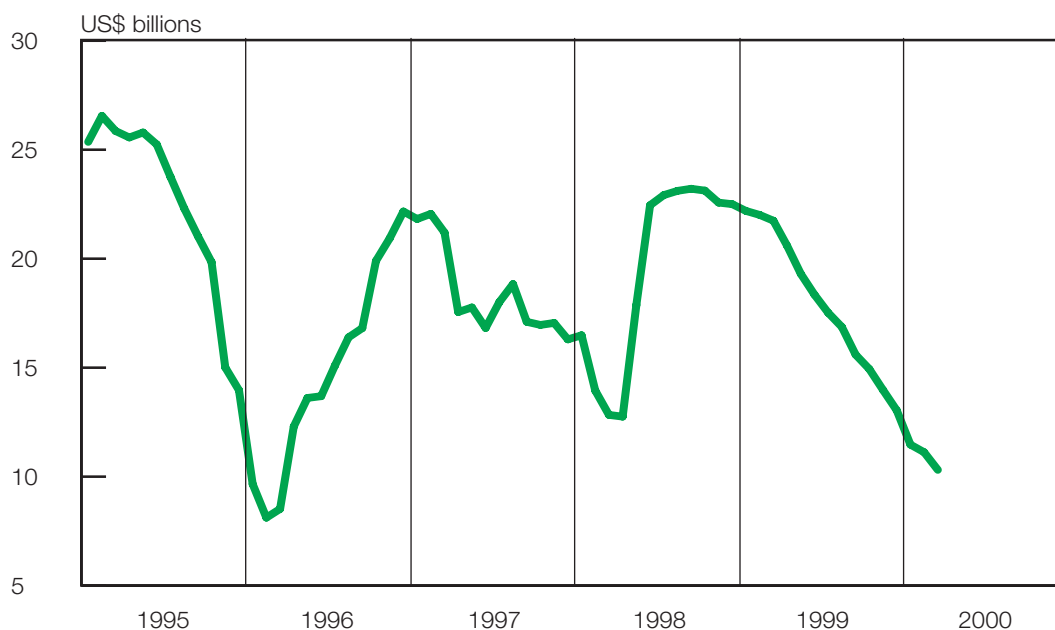
International reserves and net open position of the Reserve Bank

US\$ billions

Period	Amount as at end of period		
	Net reserves	Gross reserves	Net open position
1999: 1st qr	2,4	5,3	-21,7
2nd qr	3,1	5,8	-18,3
3rd qr	3,6	6,5	-15,6
4th qr	4,3	7,4	-13,0
2000: 1st qr	4,9	7,4	-10,3

The improvement in the total international reserves of the Reserve Bank and the reduced utilisation of short-term foreign credit lines, together with the reduction in the oversold forward foreign-exchange book, resulted in a decline in the Bank's net open position in foreign currency from US\$13,0 billion at the end of December 1999 to US\$10,3 billion at the end of March 2000 and US\$10,2 billion at the end of April. This was the lowest level since February 1996 when the net open position briefly declined below US\$10 billion. A major source of the perceived vulnerability of the South African financial situation is gradually being whittled away in this manner.

Net open position in foreign currency*



* Oversold position of the Reserve Bank

Exchange rates

The domestic market for foreign exchange was far more stable in 1999 than in 1998, but was subjected to increased volatility in the first quarter of 2000. Downward pressure on the exchange rate of the rand, partly as a result of the narrowing of the interest rate differential between South Africa and its more important trading partners, was exacerbated by declining asset prices in other emerging and some developed markets during the first quarter of 2000. The announcement of South Africa's elevation to the class of investment-grade countries by the Standard and Poor's credit rating agency could not fully counter the negative investor sentiment.

Exchange rates of the rand

Percentage change

	30 Sep 1999 to 30 Dec 1999	30 Dec 1999 to 31 Mar 2000	31 Mar 2000 to 31 May 2000
Weighted average*	0,1	-4,0	-3,2
Euro.....	4,1	-1,9	-3,1
US dollar	-2,1	-6,6	-5,7
British pound.....	-0,4	-5,2	0,5
Japanese yen	-5,5	-3,9	-3,8

* The weighted exchange-rate index consists of a basket of 14 currencies

The *nominal effective exchange rate* of the rand declined by just 0,8 per cent from the end of December 1999 to the end of January 2000. With the deterioration of investor sentiment, the weighted nominal exchange value of the rand fell further by 3,2 per cent over the remainder of the first quarter of 2000, resulting in an overall depreciation of the rand by 4,0 per cent in the quarter as a whole. Even clear indications of a continued healthy surplus on the overall balance of payments could not stem the tide of negative sentiment towards the rand.

During April and May 2000 events in other parts of sub-Saharan Africa added volatility to the foreign exchange market. This caused the rand to depreciate effectively by another 3,2 per cent from the end of March 2000 to the end of May. Over the first five months of 2000, the rand depreciated against the dollar by as much as 11,9 per cent. To a certain extent, this may have reflected dollar strength rather than rand weakness, given that South Africa's macroeconomic policies remained sound. Growing aversion by international investors towards risk-taking in emerging markets and commodity-producing economies nevertheless caused the rand to depreciate also against most of the other major currencies of the world. However, the rand depreciated far less against the euro and the British pound than against the dollar.

With the heightening of volatility in the foreign exchange market, turnovers which had declined from the second quarter of 1999, jumped from a daily average of US\$8,3 billion in the fourth quarter of 1999 to US\$9,3 billion in the first quarter of 2000. Turnover in the foreign exchange market rose even further to daily average values of US\$9,6 billion in April 2000 and US\$10,4 billion in May.

The effective exchange rate of the rand, adjusted for inflation differentials between South Africa and its most important trading partners, strengthened by about 3 per cent from December 1998 to December 1999. The possible loss of competitiveness implied by this appreciation had most likely been reversed by May 2000.

Nominal effective exchange rate of the rand



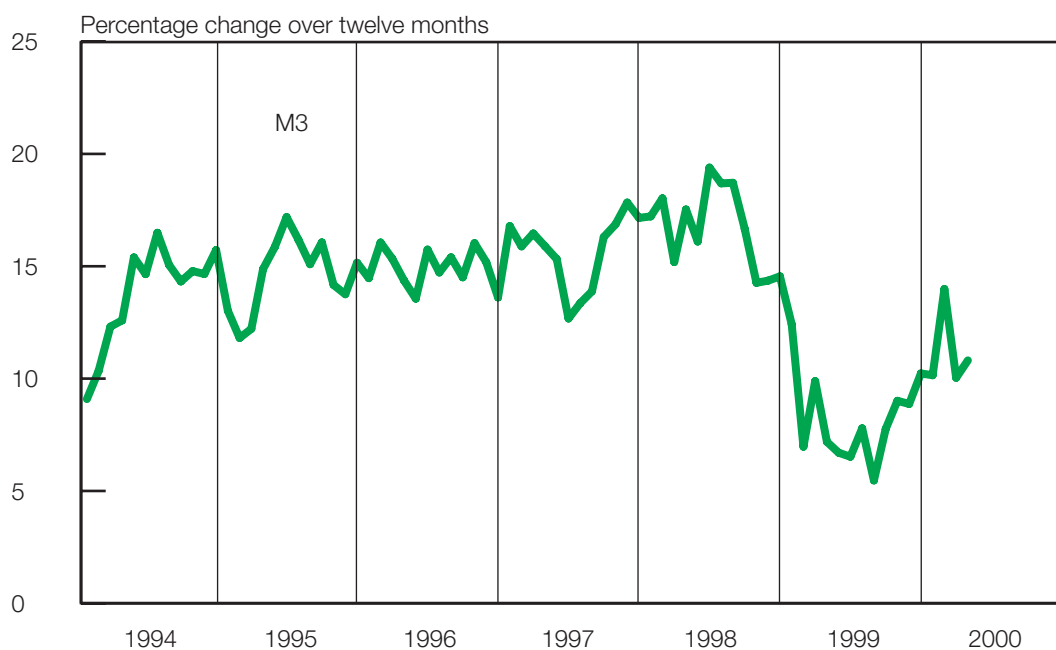
Monetary developments, interest rates and financial markets

Money supply

The acceleration in overall monetary expansion in the second half of 1999 appears to have run its course, since the growth in the aggregate money supply has slowed down again in the first quarter of 2000. The quarter-to-quarter annualised growth rate in the seasonally adjusted *broadly defined money supply* (M3) fell back to 10,4 per cent in the first quarter of 2000, after it had accelerated from around 1 per cent in the first two quarters of 1999 to 16,2 per cent in the third quarter and 19,2 per cent in the fourth quarter. The slower growth in real aggregate output and expenditure and the lower returns on monetary deposits with banks, probably contributed most to the less buoyant demand for money and the slowdown of the growth in M3.

The slower monetary expansion in the first quarter of 2000 was also reflected in fairly subdued rates of increase in M3 over periods of twelve months. The year-on-year growth in M3 accelerated from a low of 5,5 per cent in August 1999 to 14,0 per cent in February 2000, but then declined to 10,0 per cent in March and 10,8 per cent in April. The exceptionally high growth in February 2000 was partly determined by the low base in 1999 for year-on-year growth calculations. In February 1999 the growth in M3 was held back by a substantial build-up of government deposits ahead of large interest payments. Apart from the slowdown in the demand for broad money in the early months of 2000, the year-on-year growth estimates were also scaled down by the higher values of M3 in 1999 being included in the base for year-on-year growth calculations.

Money supply



The twelve-month growth in the *narrow monetary aggregate* M1A was higher and more volatile than that of M3 in the first four months of 2000. The year-on-year growth in M1A accelerated from a low of 3,9 per cent in April 1999 to 29,4 per cent in February 2000, before slowing down to 20,8 per cent in April. Similarly, the year-on-year growth in M1 has consistently outpaced the growth in M3 since October 1999. The faster growth in M1 than in M3 indicated that individuals and other private-sector entities preferred cheque and call deposits to other short-term, medium-term and long-term deposits. Growth in M2 likewise exceeded the growth in M3 from July 1999. This was a consequence of an absolute decline in long-term deposits, which are included in M3 but not in M2.

Twelve-month growth rates in monetary aggregates

Per cent

Period	M1A	M1	M2	M3
1999: Apr.....	3,9	15,8	7,7	7,2
May.....	13,6	15,2	7,4	6,7
Jun.....	14,7	8,4	6,5	6,5
Jul.....	16,9	7,4	8,2	7,8
Aug.....	19,2	3,6	6,3	5,5
Sep.....	20,6	4,2	9,0	7,8
Oct.....	16,1	13,3	12,2	9,0
Nov.....	23,3	18,1	12,2	8,9
Dec.....	26,4	20,7	13,6	10,2
2000: Jan.....	26,0	17,3	13,6	10,1
Feb.....	29,4	25,3	18,3	14,0
Mar.....	18,3	17,0	14,1	10,0
Apr.....	20,8	20,6	13,1	10,8

The growth rate of M3 reached an annualised level in the fourth quarter of 1999 that was 9,0 percentage points higher than the growth in the nominal gross domestic product, and this reduced the *income velocity of circulation* of M3 by 1,9 per cent. In the first quarter of 2000 the margin between the two growth rates narrowed to 2 percentage points. The income velocity of money accordingly declined further from the fourth quarter of 1999 to the first quarter of 2000, but by only 0,5 per cent.

The value of M3 before adjustment for seasonal influences declined by R3,4 billion in the first quarter of 2000. The *main balance sheet counterparts* of this R3,4 billion decline in the M3 money supply were a decline of R9,3 billion in the *net other assets* of the monetary institutions and a decline of R6,3 billion in their *net claims on the government*. “Net other assets” declined, among other things, because of a rise in banks’ capital and reserve funds and an increase in funds received from clients under repurchase transactions. The banks’ net claims on the government sector declined on account of a reduction of R5,0 billion in their gross holdings of government securities. This reduction was reinforced by an increase of R1,3 billion in government deposits with banks.

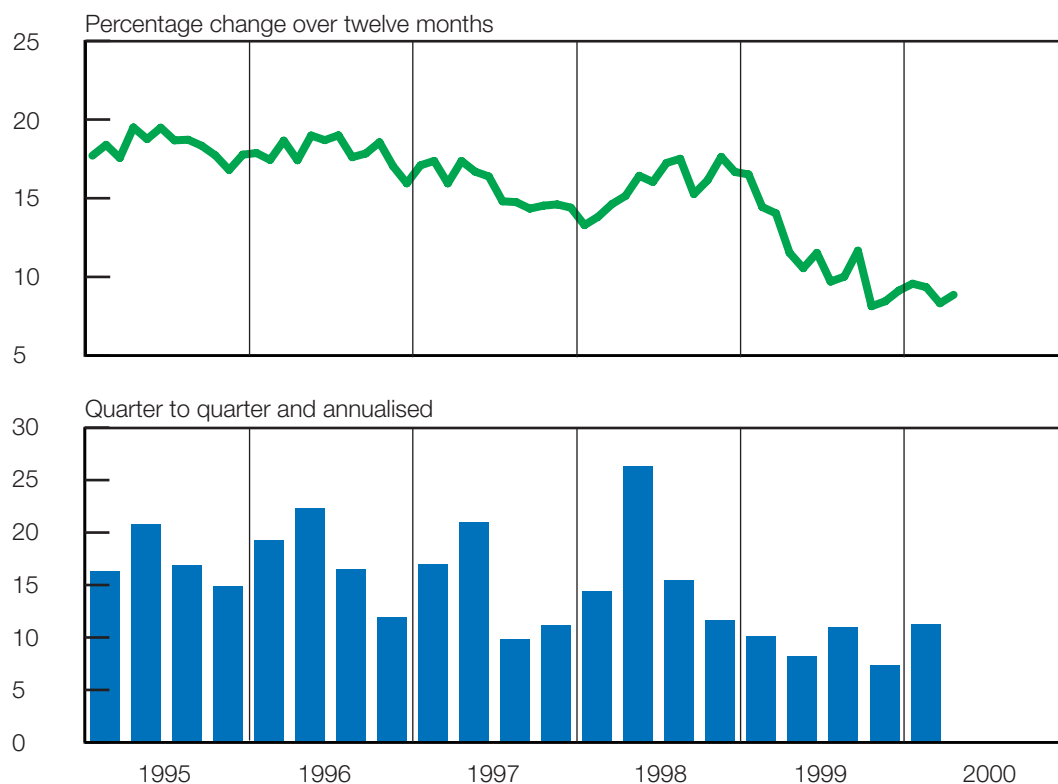
The decrease in “net other assets” and in net claims on the government sector was partially offset by increases of R7,8 billion in the monetary sector’s *claims on the private sector* and of R4,4 billion in *net foreign assets*. Both these balance sheet counterparts increased by smaller amounts than in the fourth quarter of 1999 – banks’ claims on the private sector had increased by R11,0 billion in the fourth quarter and net foreign assets by R16,3 billion.

Credit extension

Credit growth picked up somewhat in the first quarter of 2000. Measured from quarter to quarter and annualised, growth in total bank credit extension (i.e. credit extended to the private sector and net claims of banks on the government sector) accelerated from 4,1 per cent in the fourth quarter of 1999 to 12,7 per cent in the first quarter of 2000 – an acceleration of more than 8 percentage points. The acceleration in credit extension to the private sector was decidedly less impressive; private-sector credit growth accelerated from 7,3 per cent in the fourth quarter of 1999 to 11,3 per cent in the first quarter of 2000 – an acceleration of 4 percentage points.

Despite the acceleration in the first quarter of 2000, private-sector credit growth was still relatively moderate compared with the growth rates recorded in recent years. Measured over twelve months, growth in credit extension to the private sector has remained below 10 per cent since October 1999 – it slowed down from 11,7 per cent in September 1999 to 8,3 per cent in March, before accelerating to 8,9 per cent in April. This relatively moderate growth in private-sector credit over the past 12 months is mainly attributable to households' restraint in financing their purchases of durable goods with bank credit, and by monetary institutions' tighter credit-risk assessment of potential borrowers. The demand for credit by households and firms was also reduced by improved cash flows following the declines in interest rates after the fourth quarter of 1998.

Credit extended to private sector



An analysis of banks' claims on the private sector by *type of credit* shows that the growth in *mortgage advances* has picked up somewhat in recent months; the twelve-month growth rate has accelerated, on balance, from 3,8 per cent in October 1999 to 5,3 per cent in March 2000 and 5,8 per cent in April. Although the year-on-year growth rates were still rather modest, their strengthening reflected a recovery in activity and prices in the real-estate market.

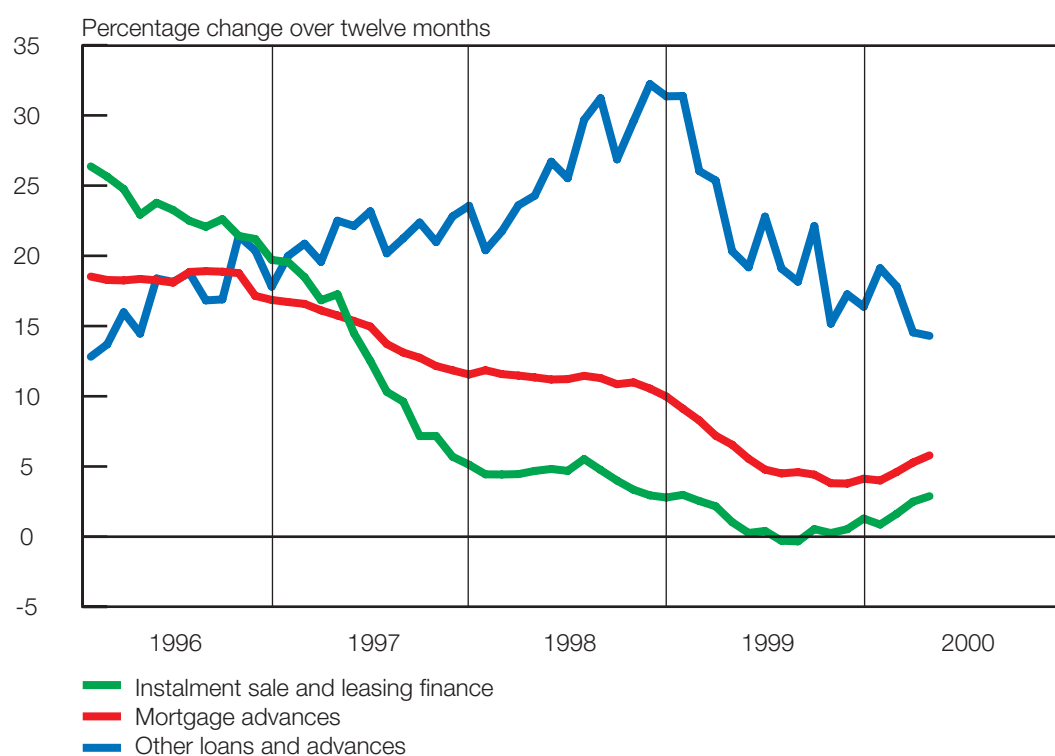
Credit extended to the private sector by main type of credit

Percentage change over twelve months

	Instalment sale and leasing finance	Investments and bills	Mortgages	Other loans and advances	Total
1999: Mar	2,2	26,9	7,2	25,4	14,0
Jun.....	0,4	16,6	4,8	22,8	11,5
Sep.....	0,5	25,8	4,4	22,1	11,7
Dec.....	1,3	14,4	4,1	16,4	9,1
2000: Jan.....	0,9	4,6	4,0	19,1	9,6
Feb.....	1,6	3,4	4,6	17,8	9,3
Mar.....	2,5	0,9	5,3	14,5	8,3
Apr.....	2,9	7,5	5,8	14,3	8,9

Instalment sale credit and leasing finance, which are used mainly for the financing of spending on vehicles and other durable goods, declined from July and August 1998 to July and August 1999. By December 1999, credit extended through instalment sale and leasing finance agreements had risen by just 1,3 per cent, but this growth accelerated to a still very modest 2,5 per cent in March 2000 and 2,9 per cent in April, confirming households' reluctance to accumulate debt imprudently.

Credit extended to private sector by type of credit



The main thrust of growth in credit extension continued to be “other loans and advances”, which is the largest component of private-sector credit. Although well down from the year-on-year growth of 25,4 per cent recorded in March 1999, this credit category was still growing at a twelve-month rate of 14,5 per cent in March 2000 and 14,3 in April, exceeding all of the conventional measures of inflation by a substantial margin. Demand for overdraft facilities was buoyant in the first quarter of 2000. Most of the overdrafts were destined for the corporate sector, which started to replenish inventories that had fallen to low levels in the first half of 1999.

The absolute increase in overall credit extension to the private sector amounted to R7,8 billion in the first quarter of 2000 of which the larger share of R5,8 billion was intended to satisfy the demand for credit by households. Credit extended to the corporate sector increased by just R1,8 billion. Measured over periods of twelve months, the growth in credit extended to the corporate sector slowed down from 16,1 per cent in December 1999 to 12,6 per cent in March 2000, whereas the corresponding growth in credit extended to households accelerated from 2,7 per cent to 4,2 per cent.

Interest rates and yields

The *monthly average yield on long-term government bonds* fell by about 180 basis points from September 1999 to January and February 2000 against a backdrop of waning inflation expectations, the relaxation of monetary policy, a shrinking of the public-sector borrowing requirement and expectations of an upgrading of the country's international credit rating. From March 2000 sentiment in the market has changed and bond yields have generally tended to rise – the increase in the monthly average yield between February 2000 and May has been about 129 basis points. The recent deterioration in sentiment may be linked to

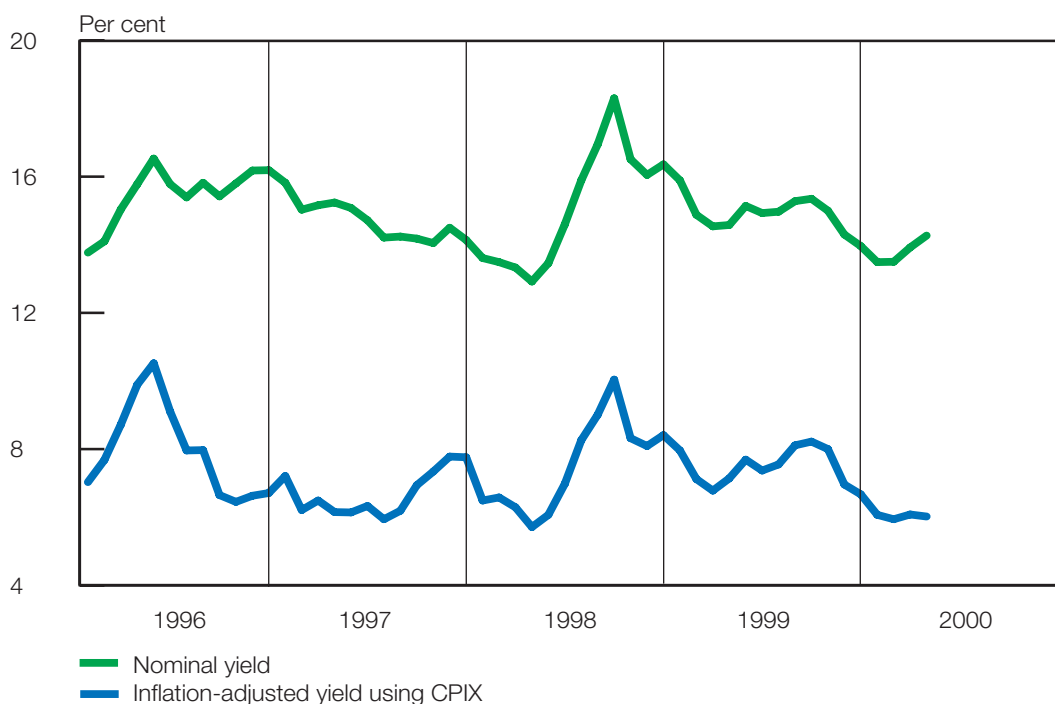
- mounting inflationary pressures in the international and the domestic markets;
- rising bond yields and short-term interest rates in the major international financial centres;
- the weakness of the rand against the dollar and the reversal of international portfolio investment inflows; and
- developments in neighbouring countries which contributed to higher risk premiums on South African assets.

The *daily average yield on long-term government bonds* moved in a tight range around an average level of 13,5 per cent in January and February 2000. After the National Budget proposals had been presented to Parliament, bonds consolidated somewhat before the depreciation of the rand and selling by non-residents put downward pressure on bond prices. This caused yields to break out of their narrow trading range and to move above 14 per cent on 7 March 2000 and above 15 per cent on 9 May. The daily average yield moved as high as 15,21 per cent on 10 May – its highest level since late September 1999 and 206 basis points higher than the most recent low of 13,15 per cent on 18 January 2000.

Using year-on-year CPIX inflation to measure the rise in the general level of prices, the *inflation-adjusted yield on long-term government bonds* declined from 8,2 per cent in September 1999 to 5,9 per cent in February 2000 – its lowest level since April 1998. The rise in nominal yields then raised the real yield to 6,0 per cent in April 2000. The *inflation-linked bond* that is structured around changes in the overall consumer price index for metropolitan areas only, was issued at a “real” yield of 6,5 per cent and last traded at 6,28 per cent on 17 May.

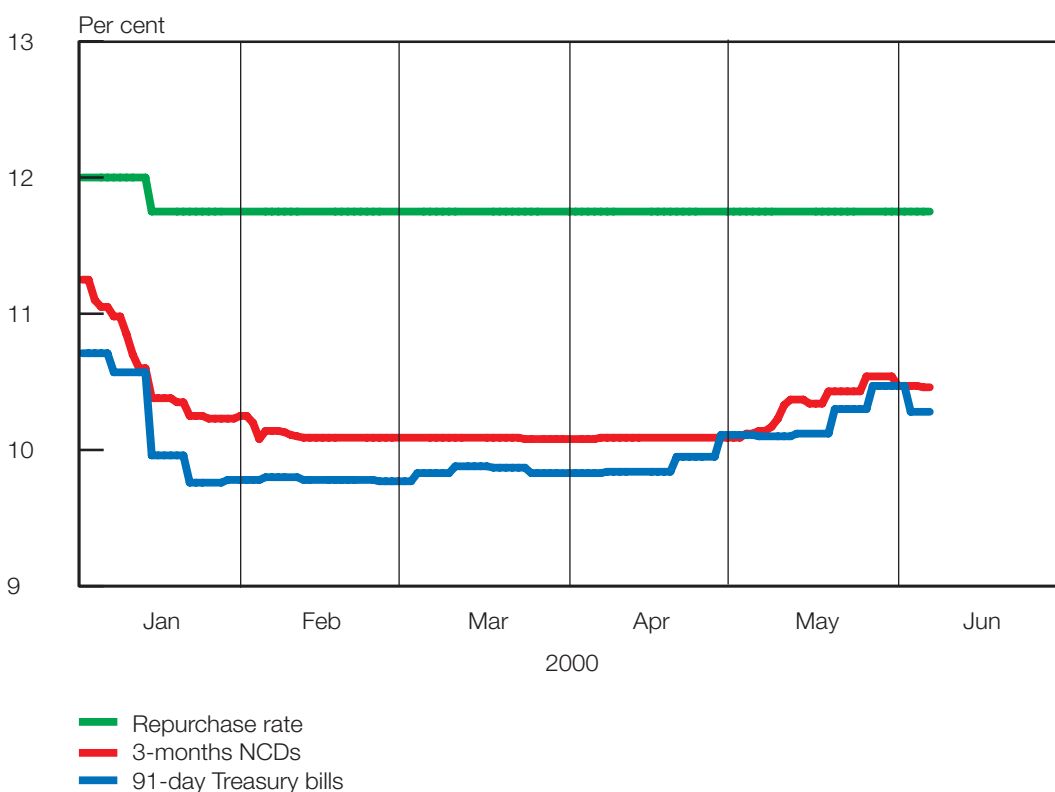
The *repurchase rate* of the Reserve Bank has been stable at 11,75 per cent since 14 January 2000. This was after the Monetary Policy Committee of the Reserve Bank concluded that a reduction of 25 basis points in the repurchase rate from

Nominal and inflation-adjusted yield on long-term government bonds



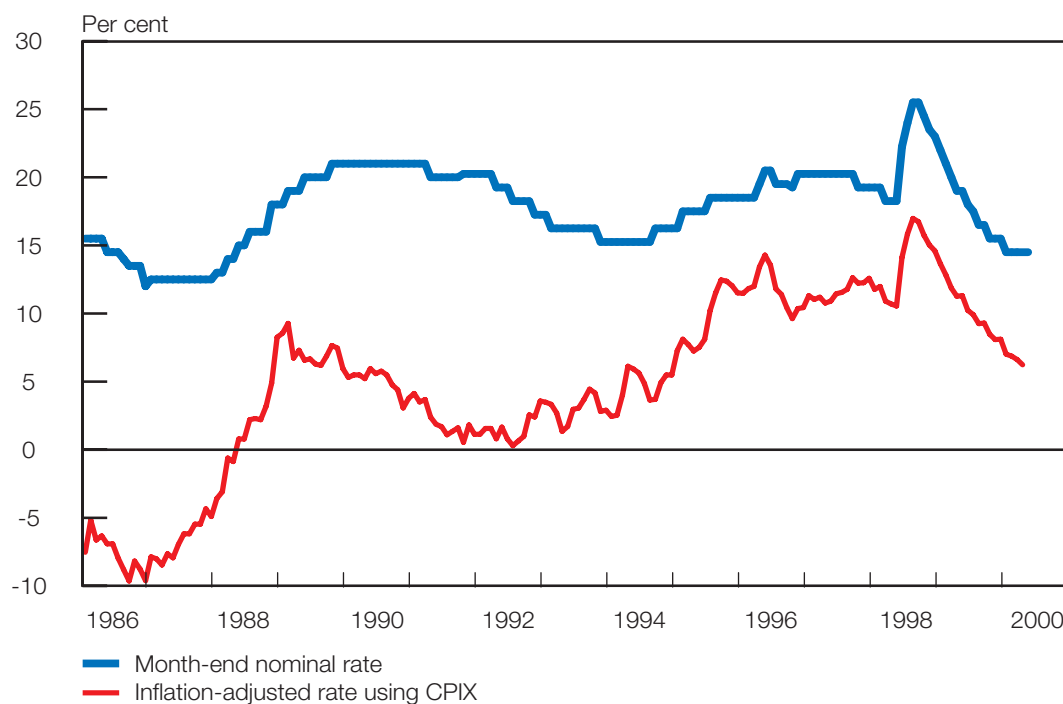
12,00 per cent to 11,75 per cent was appropriate. The committee indicated that the daily liquidity requirement of banks would be managed in a way that would keep the repurchase rate at or around 11,75 per cent. This cautious monetary policy stance was reiterated at subsequent meetings of the Monetary Policy Committee.

Money-market interest rates



Following the January meeting of the Monetary Policy Committee, the private banks reduced their prime overdraft and predominant mortgage bond rates by 1 percentage point to 14,50 per cent. The prime overdraft rate is now at its lowest level since 1988, having fallen below the nadir of mid-1994 when it briefly levelled out at 15,25 per cent. By contrast, the inflation-adjusted prime overdraft rate of 6,2 per cent in April 2000 was still 4,8 percentage points higher than its average level in 1988.

Nominal and inflation-adjusted prime overdraft rate



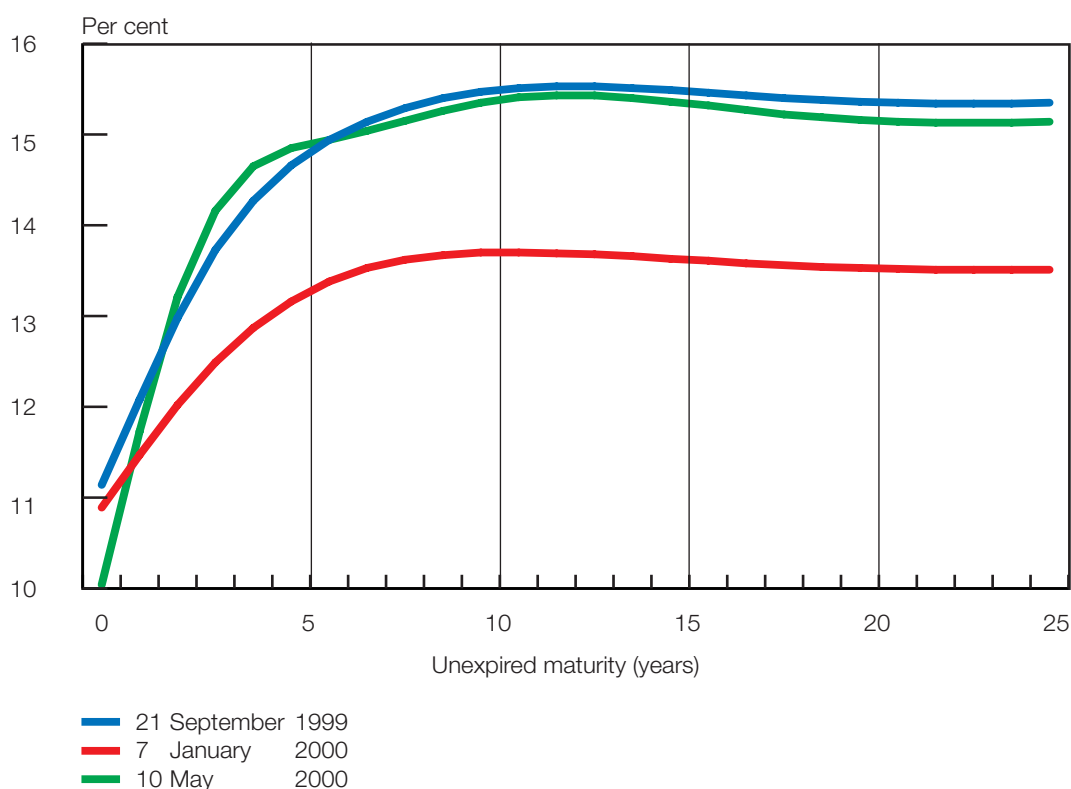
Most money-market interest rates followed the downward movement in the repurchase rate in January, and emulated its steady behaviour in the ensuing months. For instance, the rate on bankers' acceptances with a maturity of three months declined by 110 basis points from 10,93 per cent on 3 January 2000 to 9,83 per cent on 22 February 2000. Up to 5 May 2000, the rate on bankers' acceptances fluctuated in a narrow range between 9,83 per cent and 9,89 per cent. The tender rate on 91-day Treasury bills fell by 80 basis points from 10,56 per cent on 7 January 2000 to 9,76 per cent on 21 January 2000 and remained around 9,80 per cent until 19 April 2000. The rate on interbank call funds declined from 10,0 per cent to 9,5 per cent on 21 January 2000 and remained at this lower level in the four-month period up to the end of May 2000.

Towards the end of April 2000 money-market rates started to move slightly higher, partly in response to rising short-term interest rates in most of the advanced economies. The weakening of the rand, and the expectation of some future increase in official short-term interest rates may also have contributed to the upward movement in money-market rates. The tender rate on 91-day Treasury bills increased by 27 basis points in two weeks to 10,11 per cent on 28 April 2000 – partly assisted by an increase in the amount of the tender by R800 million to R2 billion on 20 April. At the end of May the Treasury bill tender rate stood at 10,47 per cent. During the course of May the rates on negotiable certificates of deposit of three, six and twelve months rose by 45, 84 and 92 basis points respectively. Following the rise in the

Treasury bill rate, the rate on three-month bankers' acceptances rose from 9,83 per cent on 28 April to 10,25 per cent on 29 May 2000.

The upward-sloping *yield curve* drifted downwards from 21 September 1999 to 7 January 2000. The curve also flattened as yields on bonds with long unexpired maturities declined more than yields on short-dated securities. The gradient of the curve steepened from 7 January 2000 to 10 May because of the divergent movements of yields on long-term and short-term securities. From 10 May 2000, the yields on short-term securities increased whereas yields on long-term securities declined somewhat, thus flattening the shape of the curve.

Yield curves



Along with the decline in the prime overdraft rate, the banks also lowered the *predominant retail rate on twelve-month fixed deposits* from 9,5 per cent in January 2000 to 8,5 per cent in February. The *standard interest rate* applicable to loans granted from the State Revenue Fund was increased in three steps from 13,5 per cent in February 2000 to 14,5 per cent in May. The *maximum permissible finance charges rates* laid down in terms of the Usury Act, which had remained unchanged from October 1999 at 24 per cent in respect of money lending, credit and leasing transactions of more than R6 000 but less than R500 000 and 27 per cent for amounts up to R6 000, were lowered to 22 per cent and 25 per cent, respectively, in March 2000.

Money market

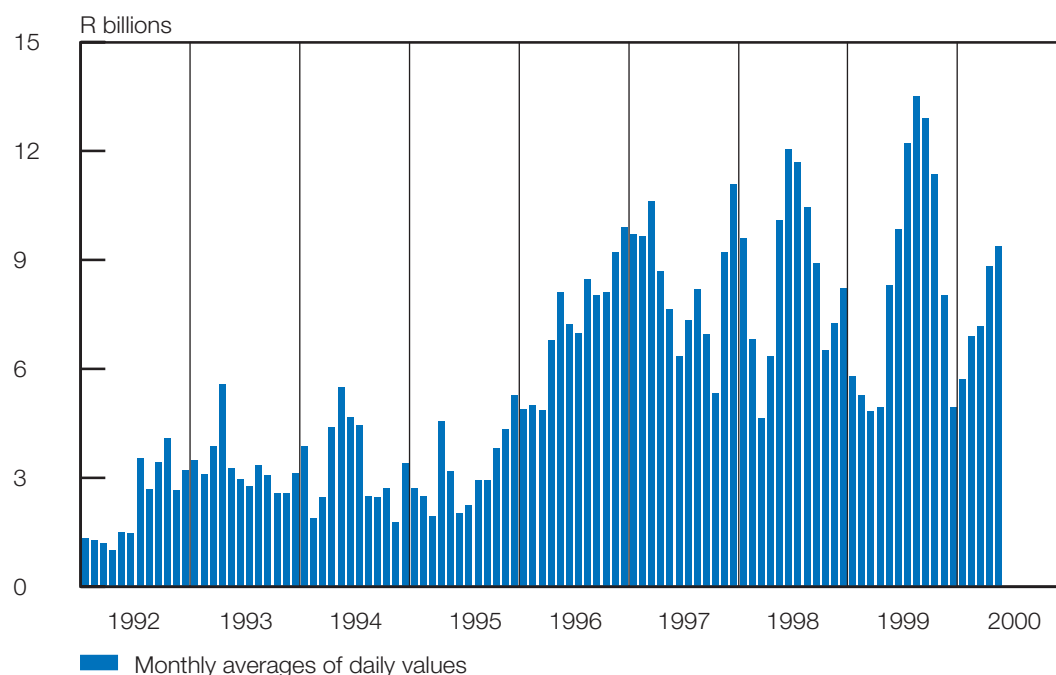
The Reserve Bank deliberately eased money-market conditions during the fourth quarter of 1999 in order to allay fears of major disruptions in the financial markets at the date changeover to 2000. The average daily liquidity requirement of the private banks accordingly shrank from R13,5 billion in August 1999 to R4,9 billion in December.

After the year-end and the smooth transition to the new millennium, the Reserve Bank once more started liquidity-draining operations to raise the private banks' dependence on central bank funding. The average daily liquidity requirement of banks consequently increased to R7,2 billion in March 2000, R8,8 billion in April and R9,4 billion in May.

During the first five months of 2000, money-market conditions were tightened mainly through the deliberate liquidity-draining operations of the Reserve Bank. Among other things, the Reserve Bank entered into foreign exchange swap transactions with private banks. The outstanding amounts of these swaps increased from R4,3 billion at the end of December 1999 to a high of R15,7 billion in February 2000 before declining to R9,8 billion at the end of March. It increased again to R10,9 billion at the end of May 2000.

As a further measure to mop up liquidity, the Bank increased the amount of its outstanding debentures from R1,0 billion at the beginning of the year to R3,0 billion at the end of March 2000 and R4,0 billion at the end of May. This was reinforced when the Bank stepped up its reverse repurchase transactions in government securities with private-sector parties from R1,0 billion at the end of December 1999 to R3,0 billion by the end of March 2000 and R4,0 billion by the end of May.

Total liquidity provided



During the first quarter of 2000, surpluses arising from the Reserve Bank's involvement in forward foreign exchange transactions drained some liquidity from the money market. Following the recent depreciation of the rand during April, deficits were once again realised on forward foreign exchange transactions and this added liquidity to the market. Further liquidity was added by a reduction in notes and coin in circulation outside the Reserve Bank from R32,7 billion at the end of December 1999 to R27,8 billion at the end of May 2000, and an increase in the Bank's net foreign assets of R7,1 billion over the same period.

These liquidity additions were totally counteracted by the mopping-up operations of the Reserve Bank. The Bank provided liquidity to the full extent of the private banks' needs throughout the first five months of 1999 as a signal that the prevailing repurchase rate was appropriate.

Bond market

Largely reflecting the reduction in the public-sector borrowing requirement, *net issues of fixed interest securities* by the *public sector* in the *domestic primary bond market* declined to R4,9 billion in fiscal 1999/2000 from R13,1 billion in fiscal 1998/99. The quarterly amount of debt issued by public-sector entities changed from net redemptions of R5,2 billion in the fourth quarter of 1999 to net issues of R1,7 billion in the first quarter of 2000.

Public-sector borrowers raised R9,5 billion in the *international primary bond market* through *foreign-currency denominated bond issues* in 1999, and R8,1 billion in March 2000. In February 2000, the National Government projected that foreign borrowing would amount to US\$1,0 billion for the fiscal year 2000/01. Government reopened its offshore borrowing programme in March 2000 when an amount of US\$750 million was raised by increasing an existing global bond issue maturing in May 2009 from US\$0,5 billion to US\$1,25 billion. The spread of 275 basis points over US Treasuries of this issue compared favourably with the original spread of 370 basis points in May 1999. At the end of March, Telkom followed with a €500 million five-year bond issue priced at 220 basis points above comparable German bonds. The significant disparity in spread between these two issues could be attributed partly to the difference in the outstanding term to maturity, i.e. five years in the case of Telkom and nine years in the case of government, and inherent differences between euro and dollar issues.

The lull in *private sector issues of fixed-interest securities* dissipated somewhat and a prominent bank issued South Africa's first domestic callable bond in February 2000. This bond was issued in the amount of R750 million. The bond matures in ten years, but is callable in five years and was priced at a spread of 195 basis points over the benchmark R150 government bond. The *outstanding nominal value of private-sector loan stock* listed on the Bond Exchange of South Africa accordingly increased, on balance, from an average of R2,8 billion in the first eleven months of 1999 to R3,8 billion in December 1999 and to R4,7 billion at the end of April 2000. Private-sector companies listed on the Johannesburg Stock Exchange made no *rights issues of preference shares and debentures* in the first four months of 2000.

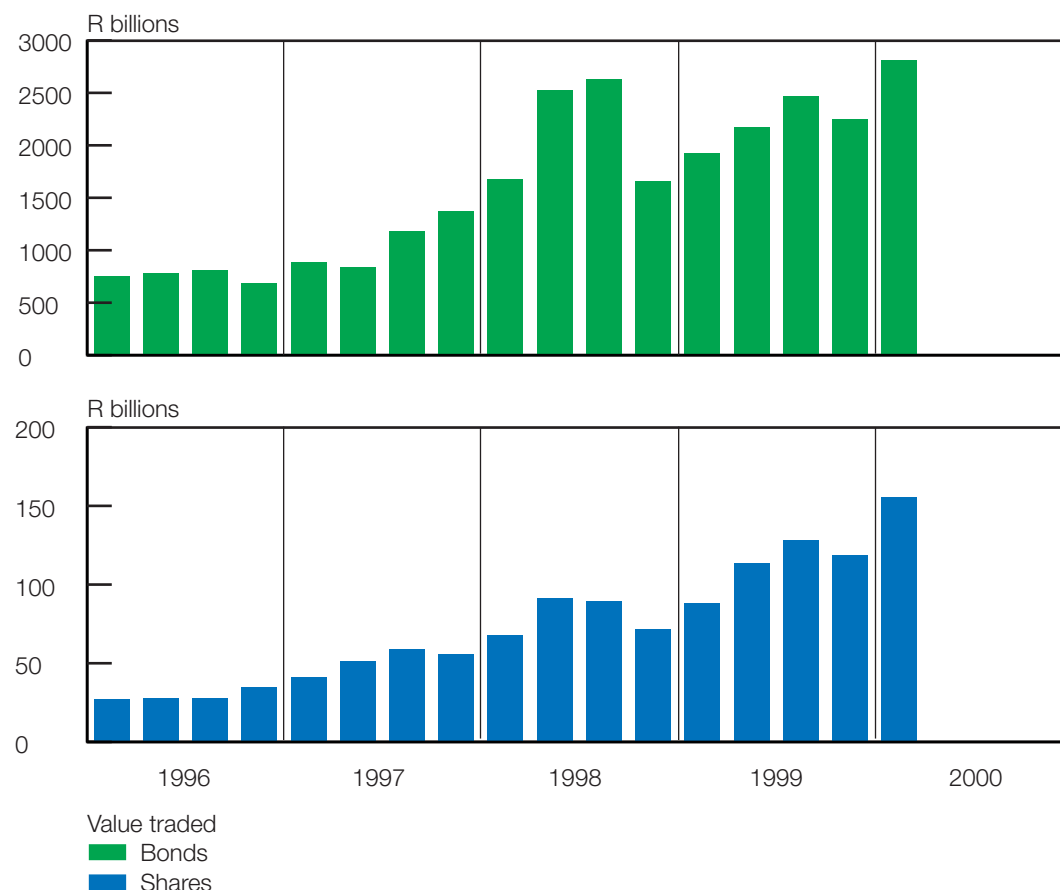
In sharp contrast to the interest shown by foreign investors in the market for South African foreign-currency denominated debt, *non-resident investors* sold some of their holdings of *rand-denominated bonds*. As a result of this obvious lack of interest, South African issuers have refrained from issuing *rand-denominated bonds* in the eurorand market since the last issue in March 1999.

In the *eurorand market* the net proceeds of rand-denominated bonds issued by non-resident entities changed to net redemptions of R0,8 billion in the first four months of 2000. In the domestic bond market non-resident investors purchased a net R6,1 billion worth of bonds in the fourth quarter of 1999 but sold bonds to a net value of R5,6 billion in the first quarter of 2000. Net sales by non-resident investors persisted into the second quarter of 2000 at a net amount of R3,9 billion in April and R5,6 billion in May.

The value of bonds traded on the Bond Exchange of South Africa receded from R2,5 trillion in the third quarter of 1999 to R2,2 trillion in the fourth quarter. The subsequent increase and heightened volatility in bond yields were accompanied by an increase in

turnover in the *secondary bond market*, reaching an all-time high of R2,8 trillion in the first quarter of 2000. The value of transactions subsequently decreased from a monthly average of R937 billion in the first quarter of 2000 to R783 billion in April, essentially due to the bunching of public holidays in that month. The value of bonds traded increased to R1,1 trillion in May.

Turnover in the secondary capital markets



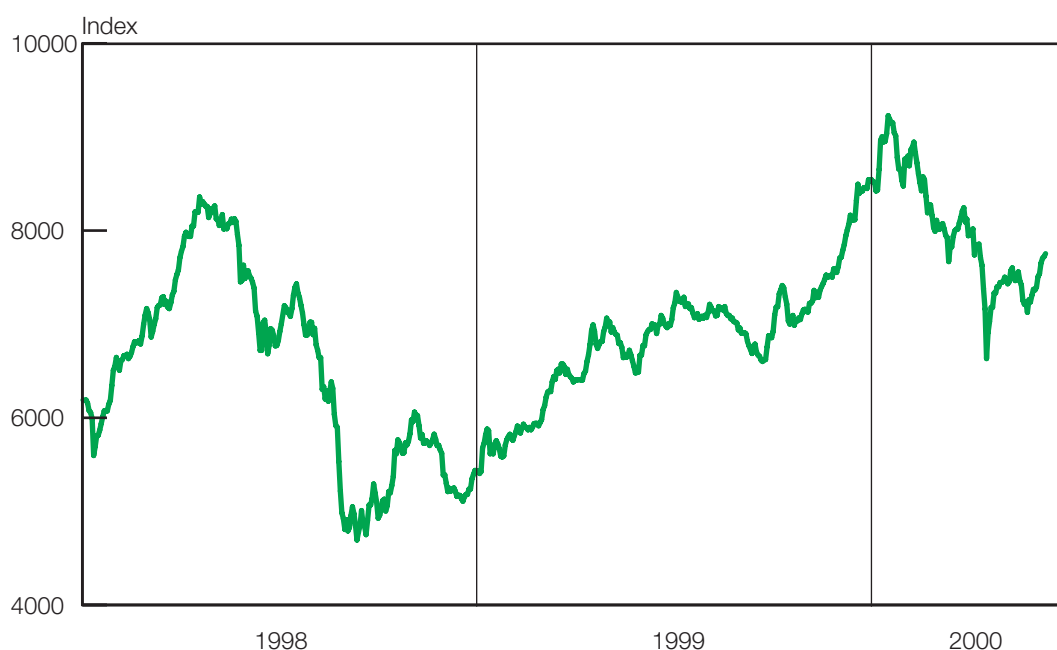
Share market

The share market, which rebounded strongly from September 1999 to January 2000, faltered in the ensuing months. Towards the end of 1999 the all-share price index rose strongly against a background of buoyant economic activity and declining interest rates which together hinted at rising corporate earnings. However, a number of factors have combined to adversely affect investors' confidence in the first five months of 2000. These are, among other things:

- market concerns that the interest rate decline could have come to an end;
- abrupt corrections on major international share markets;
- increased volatility on global currency markets;
- negative sentiment among international investors towards commodity-based economies;
- waning international portfolio investment flows;
- the weaker gold price; and
- concern that problems in other parts of sub-Saharan Africa could adversely affect stability in South Africa.

The recent weakness in the market was reflected in a decline of 15 per cent from an all-time high in January 2000 to April in the *monthly average price level of all classes of shares*. In terms of US dollars the decline amounted to 22 per cent. The *daily* all-share price index fell by 28 per cent from an all-time high on 17 January 2000 to 17 April when it reached its lowest level since September 1999. Share prices then rose on average by 11 per cent to the end of May 2000.

All shares

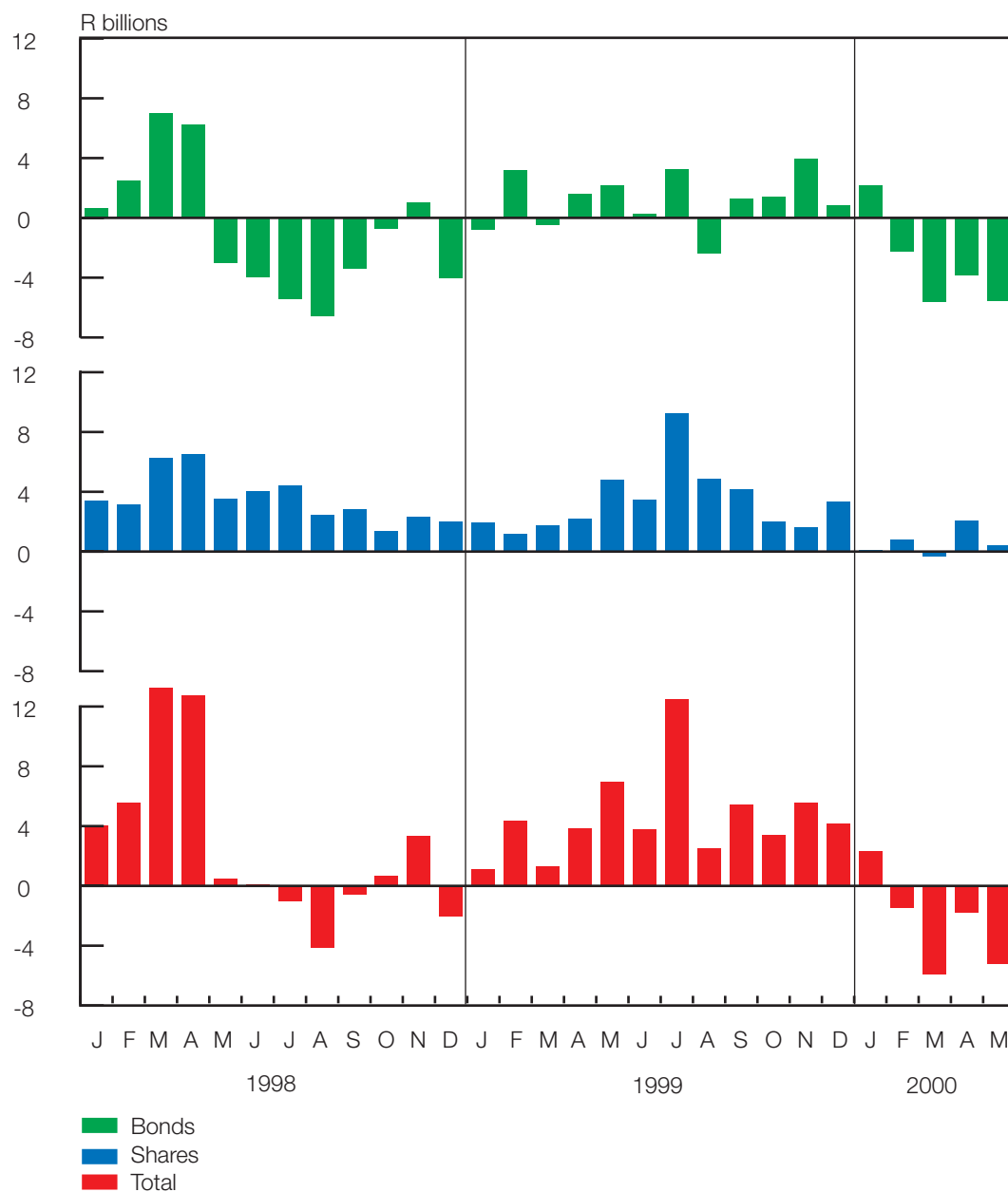


The movements of gold-mining share prices were highly volatile in the first five months of 2000. The monthly average value of the gold index rose by almost 10 per cent from December 1999 to February 2000, but when the gold price fell below US\$300 per fine ounce, gold shares declined on average by 20 per cent from February 2000 to May.

The decline in the overall index was driven by decreases in the financial and mining-resources sectors from mid-January 2000. Meanwhile, industrial share prices declined too, but initially at a slower pace than the financial and mining-resources sectors. Strong rises in the information technology sector underpinned the industrial sector up to mid-March, but from the second half of March the technology sector has weakened considerably.

Non-resident portfolio capital flows weakened in the first quarter of 2000 and in March the share market recorded a monthly net sell-off by non-resident investors for the first time since January 1997. On the whole, the net purchases of shares by non-residents on the Johannesburg Stock Exchange have now fallen back from R18,2 billion in the third quarter of 1999 to R6,9 billion in the fourth quarter and only R0,6 billion in the first quarter of 2000. There were net purchases of shares to the value of approximately R2,4 billion in total in April and May 2000, suggesting that non-resident interest in South African equities may have been strengthening again.

Non-residents' net transactions in the secondary capital markets



Overall share-market turnover declined from R128 billion in the third quarter of 1999 to R119 billion in the fourth quarter, but picked up and totalled R155 billion in the first quarter of 2000 when the sudden price correction and heightened volatility encouraged the buying and selling of shares. Market liquidity, measured as turnover as a percentage of market capitalisation, continued to rise from 28 per cent in December 1999 to 44 per cent in March 2000. The small number of trading days caused the turnover to fall back to R34 billion in April, from a monthly average of R52 billion in the first quarter. The value of shares traded amounted to R40 billion in May.

The quarterly value of *share capital raised* in the *primary share market* by companies listed on the Johannesburg Stock Exchange decreased from R14,8 billion in the second quarter of 1999 to R7,3 billion in the fourth quarter of 1999. The value of capital raised subsequently increased to R16,7 billion in the first quarter of 2000.

Included in the first-quarter statistics were shares issued for the *acquisition of unlisted assets* to the value of R11,9 billion. Equity financing in the primary share market amounted to R10,7 billion in April.

The declines in share prices from their high levels in January 2000 were reflected in the rise in the *monthly average dividend yield on all classes of shares* from 1,9 per cent in January to 2,6 per cent in May. The *monthly average earnings yield* (gold-mining shares excluded) increased similarly from 6,1 per cent in January 2000 to 7,8 per cent in May. The *monthly average price-earnings ratio* of all classes of shares, apart from gold-mining shares, mirrored the movement in the earnings yield, and decreased from 16,4 in January 2000 to 12,9 in May.

Market for derivatives

Price volatility in the domestic financial markets and non-resident participation on the South African Futures Exchange supported trading activity in the *formal derivatives market*. The combined number of *futures and options on futures contracts* traded on the South African Futures Exchange increased from 4,3 million in the fourth quarter of 1999 to 4,8 million in the first quarter of 2000. The number of these contracts traded subsequently decreased from a monthly average of 1,6 million in the first quarter of 2000 to 1,0 million in April and then increased to 1,7 million in May.

Trading in *commodity futures contracts and options* on such contracts on the South African Futures Exchange increased from a high of 81 400 in the fourth quarter of 1999 to a new record high of 94 600 in the first quarter of 2000, as the number of these contracts peaked at 39 800 in February 2000. The monthly average number of commodity contracts traded subsequently decreased from about 31 500 in the first quarter of 2000 to 23 700 in April and then increased to 37 800 in May.

The number of *warrants* traded on the Johannesburg Stock Exchange increased from a quarterly high of 1,5 billion in the fourth quarter of 1999 to an all-time high of 2,1 billion in the first quarter of 2000. Trading decreased from a monthly average number of 715 million warrants in the first quarter of 2000 to 538 million in April and increased to 633 million in May.

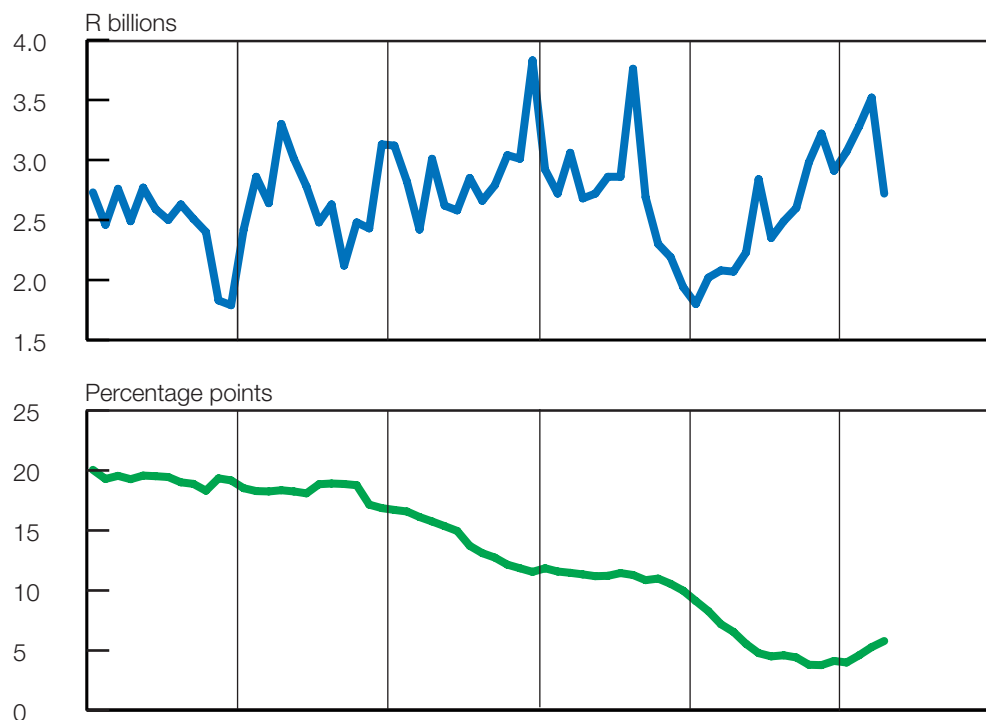
Real-estate market

Activity in the *real-estate market* returned to relatively high levels in late 1999 and early 2000 as the market became increasingly buoyant in reaction to the decline in mortgage bond rates. The rising turnovers in the real-estate market were also reflected in the *home loan market* where the rate of increase over twelve months in banks' mortgage loans outstanding accelerated somewhat from a low 3,8 per cent in November 1999 to 5,8 per cent in April 2000.

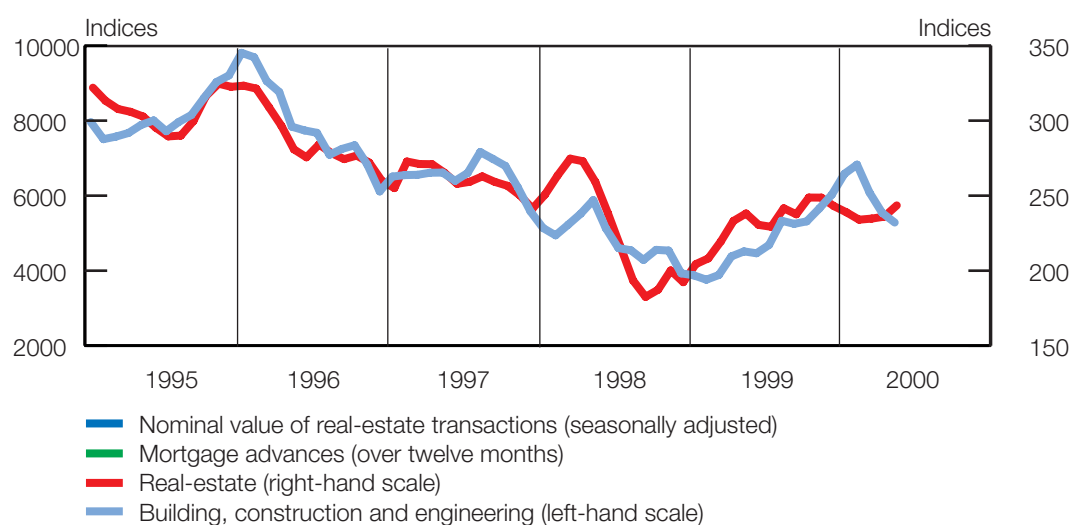
The total *value* of real-estate transactions increased from R5,9 billion in the first quarter of 1999 to R9,1 billion in the fourth quarter and R9,8 billion in the first quarter of 2000. Real-estate transactions to the value of R2,7 billion were recorded in April. The *number* of real-estate transactions increased from April 1999 to November but fell back somewhat to January 2000 before increasing further to March. The upward movement in the number of real-estate transactions was once again interrupted in April 2000. The *monthly average nominal value per real-estate transaction* increased strongly in the first four months of 2000 to a level that was about 7,1 per cent higher than in the fourth quarter of 1999.

The movement in the *share prices* of companies listed in the real-estate and building, construction and engineering sectors of the Johannesburg Stock Exchange reflected the improvement in the real-estate market and respectively recorded increases of 26 per cent and 53 per cent from December 1998 to December 1999. In the first five months of 2000 these indices faltered, along with the general correction in share prices.

Home loans and real-estate market



Share prices

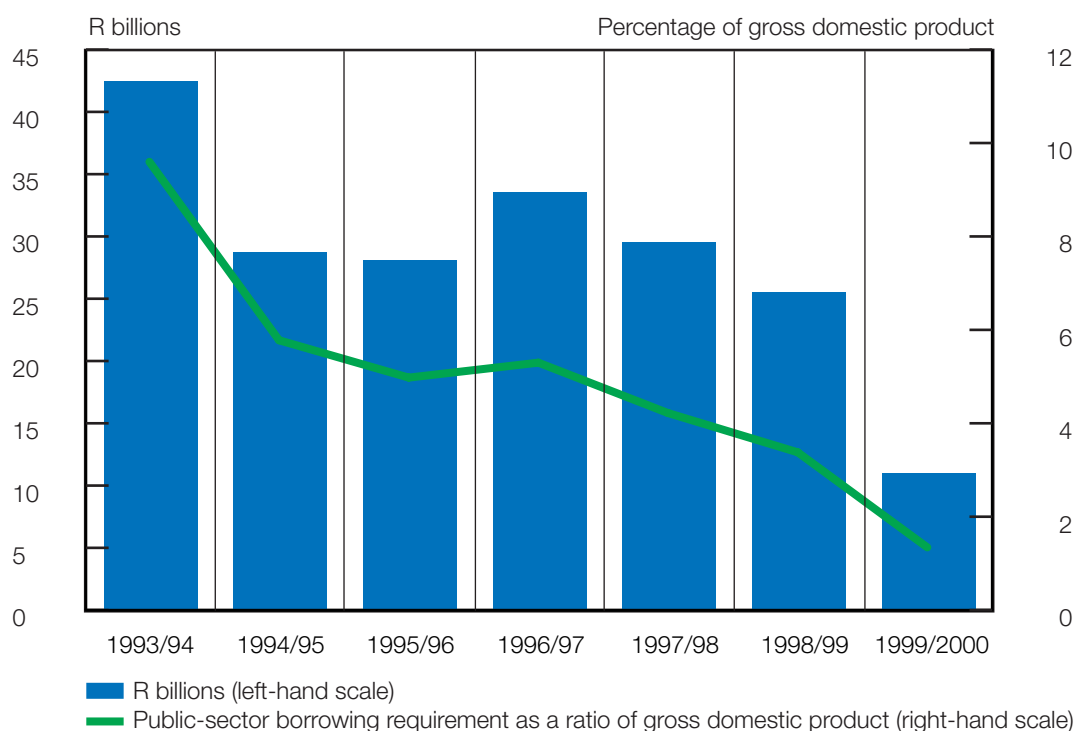


Public finance

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 R1,8 billion in the January-March quarter of 2000, which brought the public-sector borrowing requirement for the whole of fiscal 1999/2000 to R11,0 billion. This can be compared with the R25,6 billion recorded in fiscal 1998/99. As a ratio of gross domestic product, the public-sector borrowing requirement declined from 3,4 per cent in fiscal 1998/99 to 1,3 per cent in fiscal 1999/2000.

Public-sector borrowing requirement



The decline in the borrowing requirement of the public sector can be attributed to substantial improvements in the financial position of general government and the non-financial public enterprises and corporations. The accounts of the *non-financial public enterprises and corporations* reflect a borrowing requirement of R2,4 billion in fiscal 1999/2000 compared with a borrowing requirement of R8,4 billion in the previous fiscal year. The decline in the borrowing requirement was the result of a decline in investment spending in 1999/2000, following heavy spending by companies such as Eskom, Telkom and Transnet during fiscal 1998/99.

The deficit of *general government* amounted to R1,2 billion in the January-March quarter of 2000, bringing the deficit for the whole of fiscal 1999/2000 to R8,6 billion.

This deficit is the lowest since fiscal 1989/90 and is significantly less than the deficit of R17,2 billion recorded in fiscal 1998/99.

Total revenue and grants received by general government increased at a rate of 11,0 per cent in fiscal 1999/2000. Tax revenue increased by 7,9 per cent and non-tax revenue even more strongly by 35,8 per cent owing to the restructuring of the South African Special Risks Insurance Association (Sasria). *Total expenditure and net lending* by general government rose at a rate of 6,6 per cent in fiscal 1999/2000 compared with an increase of 5,4 per cent in fiscal 1998/99. Interest payments increased at a rate of only 3,4 per cent, while spending on goods and services increased by 3,6 per cent in fiscal 1999/2000.

The financial position of general government improved mainly because of a significant strengthening of the finances of the consolidated central government. By contrast, the results of the consolidated accounts of provincial governments indicated a smaller surplus in fiscal 1999/2000 than in fiscal 1998/99. The borrowing requirement of local governments in fiscal 1999/2000 remained virtually unchanged at the levels recorded in the previous fiscal year.

Provincial governments recorded a surplus of R0,6 billion in the January-March quarter of 2000, which took their aggregated financial balances to a surplus of R3,0 billion in fiscal 1999/2000. This surplus is lower than the surplus of R3,2 billion recorded in the previous fiscal year and is partly explained by the condition attached to a transfer of R1,4 billion from the national government to provincial governments. The condition stipulated that the funds be used to reduce outstanding debts and that it should not be applied against recurrent expenditures. Bank credit extended to provincial governments increased from R0,9 billion at the end of March 1999 to R1,4 billion at the end of March 2000, while the bank deposits of provincial governments increased from R2,7 billion to R4,4 billion over the same period.

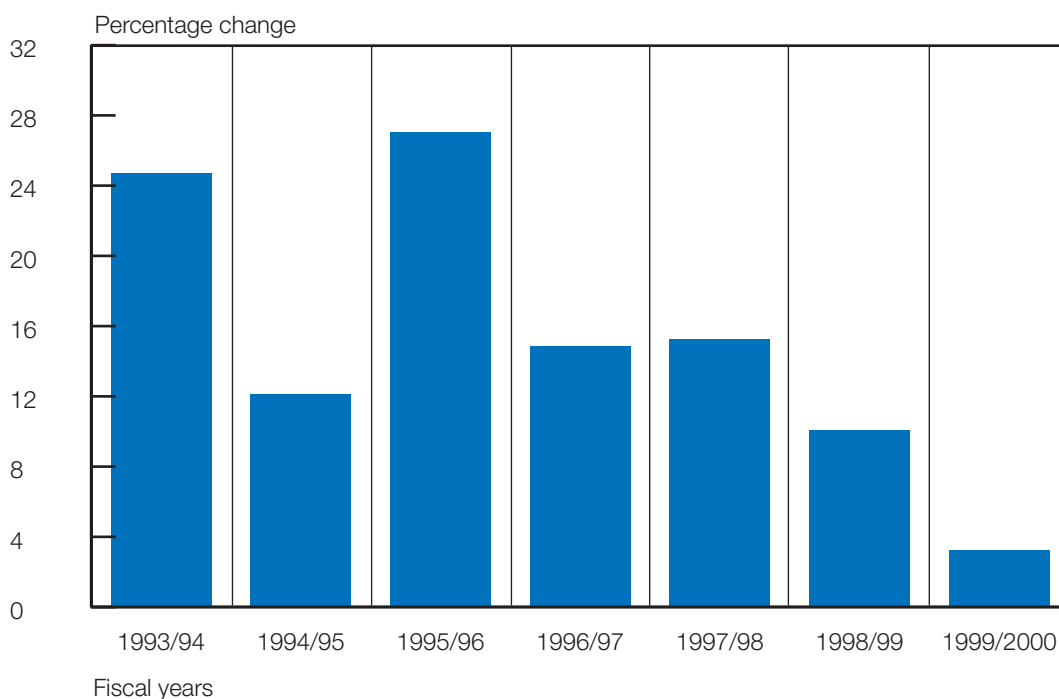
The improvement in the financial position of the consolidated central government resulted essentially from a decrease in the borrowing requirement of the national government. This improvement was complemented by improvements in the financial positions of extra-budgetary institutions and social security funds, following the inclusion of the Road Accident Fund in this category of public-sector institutions. The transformed Multilateral Motor Vehicle Accident Fund now performs all the typical functions of a social security fund and should therefore no longer be classified as a public-sector insurance agency.

National government finance

The preliminary outcome of national government finances indicates that *national government expenditure* (including R2,0 billion for the revaluation of maturing foreign loans and R0,9 billion as a transfer to the Umsobomvu Fund) in fiscal 1999/2000 amounted to R218,4 billion – R1,6 billion higher than the original budgetary provision. This brought the year-on-year rate of increase in government expenditure to 6,7 per cent in fiscal 1999/2000 which exceeded the rate of 5,9 per cent set in the original budget proposals. However, this increase was significantly lower than the increase of 7,9 per cent recorded in the previous fiscal year and well down from an average growth rate of 11,0 per cent recorded in the five preceding fiscal years. Interest payments by national government increased to R44,0 billion or by only 3,2 per cent in fiscal 1999/2000. This can be compared

with an average rate of increase of 15,9 per cent in the five preceding fiscal years. The slowdown is consistent with the objective to reduce government interest cost to more sustainable levels.

Interest on national government debt



As a ratio of gross domestic product, national government expenditure amounted to 26,8 per cent in fiscal 1999/2000, which was just below the 27,1 per cent recorded in the preceding fiscal year. After allowing for cash-flow adjustments, such as funds requested and allocated to the departments but not yet spent and late departmental requests, national government expenditure amounted to R219,0 billion or 5,9 per cent more than in the previous fiscal year.

National government revenue by type of income in fiscal 1999/2000

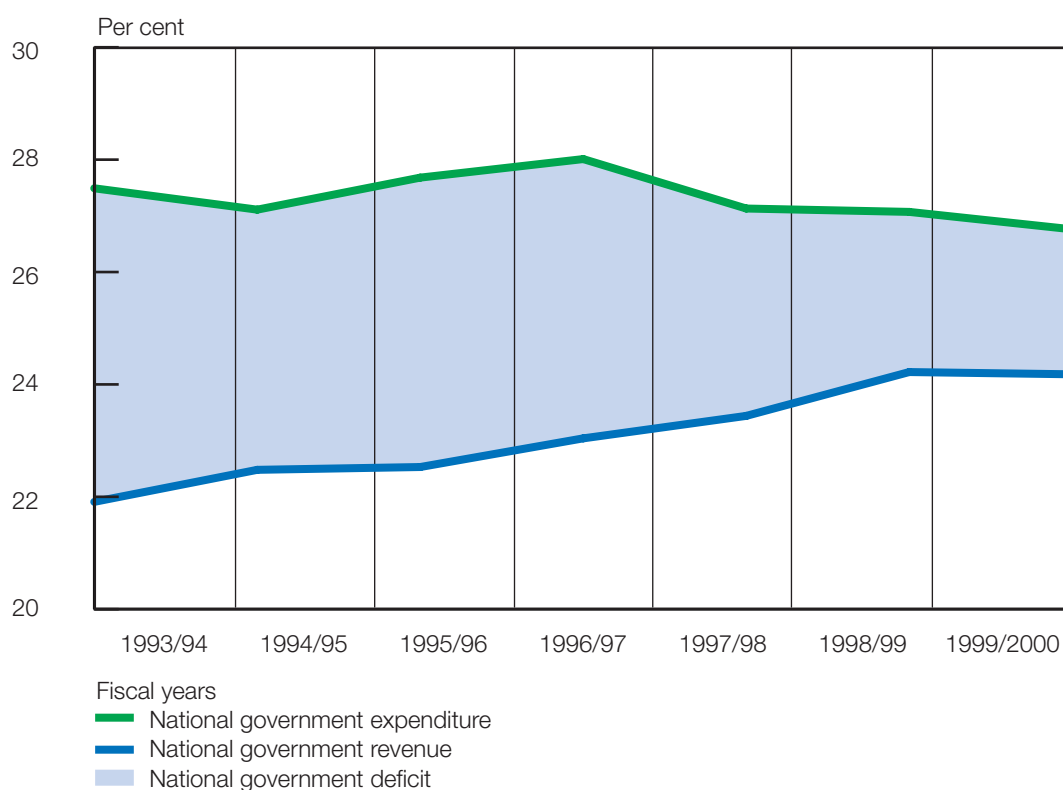
Percentage change*

Type of revenue	Budgeted	Actual
Income tax	3,4	7,3
Value-added tax	7,7	10,1
Customs duty	10,4	8,9
Fuel levy	5,9	4,8
Other excise duties	9,1	10,4
Total revenue	4,6	7,8

* Based on the actual outcome of the previous year

The preliminary Exchequer Account indicated that national government revenue amounted to R197,4 billion in fiscal 1999/2000. This represented an increase of 7,8 per cent for the fiscal year compared with an originally budgeted increase of 4,6 per cent. As shown in the accompanying table, the higher-than-budgeted rate of increase was primarily due to a strong growth in income tax and value-added tax collections. Revenue from customs duties and the fuel levy fell short of the original projections, but income from other excise duties comfortably exceeded the budget targets.

National government revenue and expenditure as a ratio of gross domestic product



As a ratio of gross domestic product, national government revenue amounted to 24,2 per cent in fiscal 1999/2000, compared with government's stated longer-term objective of 25,0 per cent. After allowing for cash-flow adjustments resulting from surrenders and other receipts, national government revenue amounted to R200,2 billion in fiscal 1999/2000. This represented an increase of 7,7 per cent over the previous fiscal year.

The higher-than-expected expenditure and revenue resulted in a *national government deficit before borrowing and debt repayment* of R21,0 billion for fiscal 1999/2000, which was clearly lower than the originally budgeted deficit of R25,1 billion. As a ratio of gross domestic product, the deficit amounted to 2,6 per cent in fiscal 1999/2000, compared with a ratio of 2,8 per cent recorded in the preceding fiscal year. National government also succeeded in maintaining the primary surplus (i.e. the difference between revenue and expenditure recalculated by excluding interest payments from total expenditure) at 2,8 per cent of gross domestic product in fiscal 1999/2000.

The Minister of Finance announced that, in keeping with international practice, the cost of the revaluation of maturing foreign loans would in future be excluded from government expenditure. If such revaluations are excluded in fiscal 1999/2000, the deficit would be R19,3 billion or 2,4 per cent of gross domestic product.

The deficit before borrowing and debt repayment, adjusted for cash flows, amounted to R18,8 billion in fiscal 1999/2000. This came to 2,3 per cent of gross domestic product, compared with 2,8 per cent in fiscal 1998/99. This was financed by means of government securities issued in the domestic and foreign markets and from the proceeds of the restructuring of government assets, as shown in the accompanying table.

Financing of national government deficit in fiscal 1999/2000

Financial instruments	R millions
Domestic primary capital market	
Government bonds (including discount)	6 997
Less: Discount on government bonds	3 686
Net receipts from government bonds issued	3 311
Treasury bills	1 884
Extraordinary receipts	
Restructuring of government assets	7 145
International Monetary Fund	8
Extraordinary payments	
Transnet Pension Fund	-1 333
Closed Pension Fund	-152
Other	-8
Foreign loans	10 496
Redemption of Namibian debt	-272
Redemption of Section 239-debt*	-181
Non-marketable securities	-5
Increase(-) in available cash balances	-2 120
Total net financing	18 773

* Debt of the former Transkei, Bophuthatswana, Venda and Ciskei and self-governing territories

As indicated in the table, new funds obtained through domestic government bond issues amounted to approximately R3,3 billion. Bonds to the value of R1,3 billion were also issued to Transnet in accordance with the burden-sharing agreement regarding the Transnet Pension Fund shortfall, attributable to South African Airways.

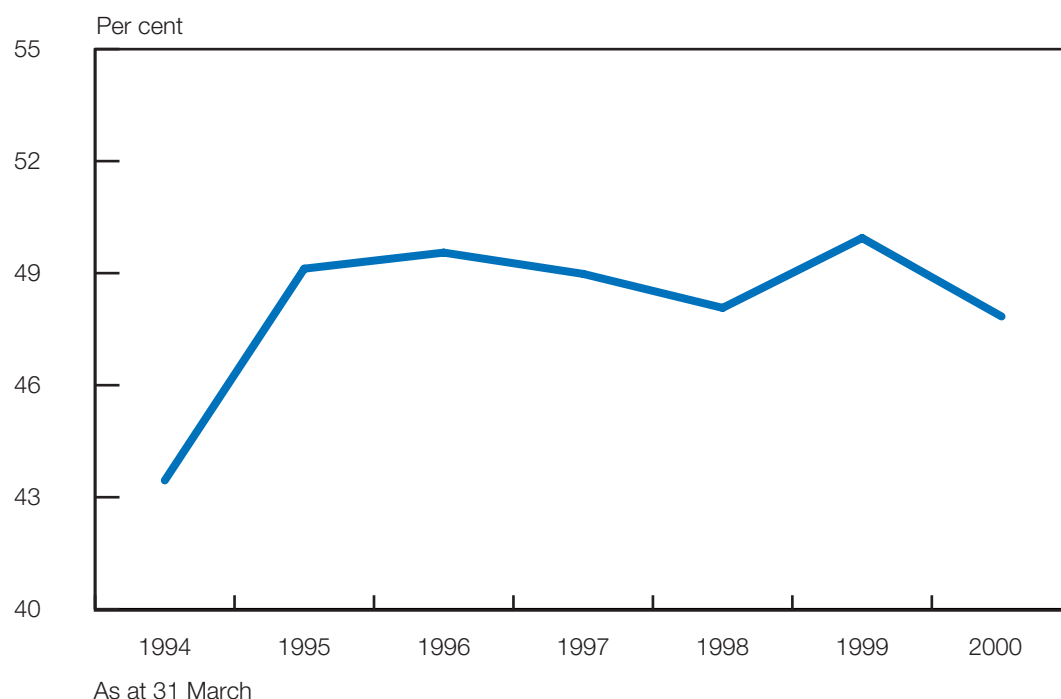
Government also successfully reopened the 9,125 per cent Global Dollar Bond with a further issue of US\$750 million. This issue was allotted at 275 basis points over the rate on 10-year United States Treasury Bonds and yielded R4,9 billion to the Exchequer Account in March 2000. This issue lengthened the average outstanding maturity of government foreign debt from 90 months at the end of December 1999 to 92 months at the end of March 2000. Subsequent to this issue, a downward revision was announced regarding the expected foreign financing in fiscal 2000/01, from R6,5 billion to R2,0 billion.

The proceeds from the restructuring of government assets made a significant contribution to the financing of the deficit of national government in fiscal 1999/2000. Receipts from this source included R6,3 billion from the restructuring of the South African Special Risks Insurance Association (Sasria), R44 million from the partial sale of the Airports Company of South Africa (ACSA), R625 million from Transnet for the partial sale of South African Airways and R165 million from the outsourcing of the motorcar financing scheme for senior government officials.

Long-term funding was obtained at an average rate of 13,8 per cent per annum and short-term debt instruments were sold at an average rate of 11,1 per cent per annum during fiscal 1999/2000. These rates compare with an initial budget assumption of 14,0 per cent.

Total *national government debt* rose from R377,7 billion at the end of March 1999 to R390,5 billion at the end of March 2000. The increases in outstanding securitised debt were offset to some extent by the lower balance on the Gold and Foreign Exchange Contingency Reserve Account, which fell from R14,4 billion at the end of March 1999 to R9,2 billion at the end of March 2000. As a ratio of gross domestic product, government debt decreased from 49,9 per cent at the end of March 1999 to 47,8 per cent at the end of March 2000.

National government debt as a ratio of gross domestic product



National government finance in April 2000

In April 2000 national government expenditure amounted to R23,2 billion or 14,0 per cent more than in April 1999. After allowing for cash-flow adjustments, expenditure amounted to R22,1 billion, which was 16,8 per cent higher than the corresponding amount a year earlier. The Budget envisaged an increase of 7,2 per cent in fiscal 2000/01. Revenue received by national government amounted to R12,4 billion in April 2000 or 15,1 per cent more than in April 1999. After allowing for cash-flow adjustments, revenue amounted to R12,4 billion. The net result of these changes in revenue and expenditure in April 2000 was a deficit before borrowing and debt repayment of R10,8 billion.

Statement after the first Monetary Policy Forum

20 March 2000

Issued by Mr T T Mboweni, Governor of the South African Reserve Bank

The Monetary Policy Forum (MPF) met for the first time today, 20 March 2000, in the South African Reserve Bank Head Office in Pretoria. The MPF is a mechanism for interaction and communication between the Bank and outside stakeholders who take interest in the economic and financial developments locally and internationally. In his opening remarks, Mr Tito Mboweni, Governor of the South African Reserve Bank, outlined the objectives of the Forum as follows:

- To enhance transparency in the decision-making process around monetary policy
- To open an avenue for constant discussions on monetary policy and general economic developments here and abroad
- To ensure that the views of organised entities are taken into account in the determination of monetary policy
- To ensure a healthy, ongoing debate and mutual exchange of views on macro-economic policy.

In attendance were various organised entities, including business, the trade union movement, community organisations, private sector economic analysts, the chairpersons of the Finance Committee in the National Council of Provinces and the National Assembly. Also present were Reserve Bank deputy governors, senior managers and other staff members.

A wide-ranging discussion was held on recent monetary policy developments as well as general economic developments. Overall, the local economy is expected to continue growing. The Forum made the following observations:

- South Africa is experiencing recovery both in the agricultural and non-agricultural sectors of the economy
- The past three quarters were characterised by a decline in interest rates. This is one of the developments that spurred economic recovery
- The gold and foreign exchange reserves grew substantially in the past few quarters
- The net open foreign currency position has been reduced significantly in the past year and now stands at 11.1 billion American dollars
- The fiscal discipline of the general government has resulted in a significantly lower budget deficit as a percentage of the gross domestic product
- Wages and salaries per worker exceeded the inflation rate, but the impact was neutralised somewhat by high productivity
- The high recorded surplus on the financial account of the balance of payments more than offset the negative effects of a deficit on the current account.

The Forum observed that the increase in the deficit on the current account of the balance of payments during the last six months of 1999 was primarily attributable to the country's deteriorating terms of trade with the rest of the world.

Furthermore the Forum looked at the international economic situation. The main conclusions in this regard were

- the global economy is expected to grow by 3.5 per cent in the years 2000 to 2001;
- Japan's negative growth in the last six months of 1999 is expected to improve over the next year;
- Africa should expect high positive economic growth in the coming year;
- Asia is showing signs of a rebound in the wake of the turbulences of 1998; and
- although the world is currently experiencing an acceleration in the growth rate of inflation, there are signs that Africa should record a healthy reduction in the overall inflation rate.

The Monetary Policy Forum also considered the Reserve Bank's ongoing process of developing simpler but effective econometric models. The Forum took note of the fact that although models are not enough in themselves to enhance the chances of meeting the inflation targets, they are nevertheless an important tool in ensuring that the future path of inflation is measured with a certain degree of certainty.

The Monetary Policy Forum will meet twice a year and more stakeholders will be invited in future.

Statement of the Monetary Policy Committee

6 April 2000

Issued by Mr T T Mboweni, Governor of the South African Reserve Bank, at a meeting of the Monetary Policy Committee in Pretoria

The Monetary Policy Committee discussed in some detail recent international and domestic economic developments and the current monetary policy stance. The main conclusions of the committee are summarised in this statement.

International economic developments

Since the last meeting of the Monetary Policy Committee the growth prospects for the world economy have remained positive. The unexpectedly high annualised growth of around 7 per cent in the real gross domestic product of the United States in the fourth quarter of 1999 resulted in a further increase in official interest rates during March. Continued upward pressure on official interest rates is likely to remain the norm as US policy makers seek to dampen inflationary pressures.

The growth performance in the euro area has been robust and is expected to improve further over the current year. Inflationary pressures induced by higher oil prices and a weaker euro exchange rate brought about a further interest rate increase by the European Central Bank. In contrast to these developments, the Bank of England did not raise its rates in March. In Japan interest rates are being maintained at exceptionally low levels in view of the fact that the country is experiencing negative growth and deflationary tendencies. There are, however, promising signs that the Japanese economy could start recovering during the current year.

Economic growth prospects in the developing countries in Africa and Latin America remain good, but growth in Asia slowed down during the second half of 1999. Growth in the aggregate production of the developing countries in Asia is nevertheless expected to average a high rate of 6 per cent in 2000. Inflationary pressures in Africa, Latin America and in the countries in transition seem to be subsiding or remaining constant.

The pressure on world inflation induced by higher oil prices was reduced somewhat by the decision of OPEC in March to relax production quotas. This had the effect of reducing oil prices from above US\$30 to around US\$24 per barrel. The gold price weakened in March and averaged US\$286,56 per fine ounce for the month. On 6 April the gold price stood at US\$278,85.

Domestic real economic developments

Information available about economic activity in the current year indicates a continuation of the broad-based economic recovery of the second half of 1999. Export growth remained healthy and world prices of internationally traded primary commodities rose strongly in the first three months of 2000. Domestic non-gold mining output remained at a high level, manufacturing output growth maintained momentum and the rate of increase in motor car sales accelerated in the first few months of 2000.

Despite these indications of economic recovery, there were still no signs of any pick-up in the formal demand for labour by the end of 1999. According to the *Survey of Total Employment and Earnings* by Statistics South Africa, there was a loss of more

than 43 000 jobs in the formal non-agricultural sectors of the economy in the last quarter of 1999. The Monetary Policy Committee is concerned about the high unemployment in South Africa, but remains convinced that the best contribution that monetary policy can make in creating an environment conducive to economic development and employment creation is bringing about and maintaining financial stability.

The underutilisation of labour resources apparently slowed down the growth in the earnings of workers during 1999. The year-on-year growth in nominal salaries and wages per worker declined sharply from 7,1 per cent in the first quarter to 3,9 per cent in the fourth quarter of that year. This decline together with productivity increases caused the change in nominal unit labour costs measured over a period of twelve months to turn around from a positive rate of 5,5 per cent in the first quarter of 1999 to a negative rate of 0,7 per cent in the fourth quarter. On average, nominal unit labour costs increased at a rate of 3,5 per cent in 1999.

Domestic monetary and financial conditions

The slowdown in the growth of labour costs has been neutralised by other price increases. Rising costs of imported crude oil, increases in the prices of transport equipment and increases in food prices partly related to the recent floods, caused an upward movement in production prices. The rate of increase in the overall consumer price index in metropolitan and other urban areas, excluding mortgage bond costs, rose from 6,5 per cent in October 1999 to 7,1 per cent in February 2000.

The twelve-month growth in the broadly defined money supply (M3) accelerated from single-digit levels during 1999 to 10,2 per cent in January and 13,9 per cent in February 2000. The latter rate was, however, influenced by an exceptionally low base value in the previous year. In contrast, the seasonally adjusted month-to-month growth in M3 was subdued in the first two months of 2000, following brisk rates of expansion in the second half of 1999.

Total domestic credit extension continued to expand firmly in the first two months of 2000. The growth rate in this aggregate measured over twelve months accelerated from 6,9 per cent in October 1999 to 11,5 per cent in February 2000. Although the growth in credit extension to the private sector weakened in February, its lack of buoyancy was countered by an increase in the net claims on the government sector by the monetary institutions.

Domestic money and capital markets

Early indications are that conditions in the real-estate market strengthened further in the first quarter of 2000, with increases in property prices and rental values being recorded. Share market turnovers also remained at a high level, but share prices declined somewhat. From an all-time high on 17 January 2000, share prices declined by 17 per cent until 13 March. Subsequently they regained some lost ground, rising by 7,5 per cent until 27 March 2000, but then declined again by 6,1 per cent until 5 April.

Bond prices were more volatile in a market with record turnovers. Yields generally shifted upwards in the first three months of 2000 because of a shift of funds away from commodity-based countries to high-tech and manufacturing-oriented economies. Moreover, sustained buoyant market conditions in the United States contributed to this shift in funds. As a consequence, non-residents were net sellers

of bonds to the amount of R5,6 billion in the first three months of 2000. Money market interest rates have remained more or less unchanged since the last meeting of the Monetary Policy Committee. The stable money market rates were related to the daily liquidity requirement of banks which was managed in a way to ensure that the repo rate would remain at or around the level of 11,75 per cent. Through various operational procedures the Reserve Bank steered the daily liquidity requirement to a level of between R7 billion and R8 billion during March and the beginning of April, and continued to provide fully in the estimated liquidity requirements at the daily repo auctions.

These developments in interest rates were reflected in a change in the shape of the yield curve. The upward-sloping short end of the yield curve steepened slightly, partly as a result of a shortage of suitable liquid assets which the banks could hold for prudential purposes. The longer end of the yield curve shifted parallel upwards based on higher inflation expectations, international increases in longer-term interest rates and large net sales of South African bonds by non-residents.

Balance of payments and foreign exchange market

The good export performance in the first two months of 2000 neutralised the effect of the rise in oil prices and increases in the volume of imports. As a consequence, the trade balance in the first two months of 2000 was in surplus. The seasonally adjusted and annualised average monthly value of the surplus amounted to R23,1 billion in January and February 2000, compared with R20,0 billion in the fourth quarter of 1999. This indicates that the deficit on the current account of the balance of payments could have declined somewhat, provided there was no significant increase in net service and transfer payments to the rest of the world.

Judging by the net sales of fixed-interest securities and equities by non-residents in the domestic capital markets, there is a strong possibility that the external financial account deteriorated in the first three months of 2000. The gross gold and other foreign reserves of the Reserve Bank accordingly increased by just R3,1 billion from the end of December 1999 to the end of March 2000; in the fourth quarter of 1999 an increase of R6,2 billion was recorded. Despite this slowdown in the increase in foreign reserves, the net open foreign currency position of the Reserve Bank declined by US\$1,9 billion in the first three months of 2000 to a level of US\$10,3 billion at the end of March, owing largely to the proceeds of a US\$750 million bond issue by the government.

The external value of the rand against both the US dollar and a basket of currencies continued to decline during March. After stabilising around R6,30 to the US dollar in February, the rand depreciated to an average level of R6,45 in March. At the beginning of April the rand along with other emerging-market currencies came under pressure and depreciated further to R6,60 against the dollar on 5 April 2000. Against a basket of currencies, the rand fell by some 3,8 per cent from the end of 1999 to 5 April 2000. International stock exchanges and exchange rates have been more volatile in recent weeks. For example, the euro depreciated to all-time low levels against the US dollar, the Australian dollar has depreciated by more against the US dollar than the rand and the NASDAQ composite index weakened by 16 per cent in just 8 days.

The recent net sales of South African securities by non-residents were accommodated in an orderly fashion. The South African markets have reacted in a mature manner to these changes, thereby avoiding large price swings while reflecting underlying market conditions.

Stability in the financial sector

Conditions in the banking sector remained stable during the first three months of 2000. Profitability was healthy, but the margin between interest rates paid on loans and advances and the funding of the banking sector declined from 3,92 percentage points in December 1999 to 3,37 percentage points in February 2000. The anticipated short-term liquidity mismatch, i.e. the difference between liabilities maturing in the next 31 days and assets maturing during the same period, decreased from 14,0 per cent of total liabilities in December 1999 to 12,6 per cent in February 2000.

Monetary policy

Recent changes in price indices continued to reflect some inflationary pressures in the South African economy. The secondary effects of oil price increases, rising food prices and a projected increase in domestic demand during 2000, are expected to result in higher inflationary pressures over the short term. The twelve-month growth in money supply also accelerated in the second half of 1999 and reached relatively high levels in the first two months of 2000. However, the high year-on-year growth of money supply in February 2000 was mainly due to technical factors. The month-on-month increases in money supply in the first two months of 2000 actually slowed down significantly. The oil and food price increases are the result of particular events that are not expected to have a permanent effect on the inflation rate. In fact, the oil price started to decline in late March because of a decision by OPEC to increase production by 1,7 million barrels per day.

Over the medium to longer term the outlook for inflation still seems to be very promising. In particular, the recent subdued movements in nominal unit labour cost should have a dampening effect on general price increases. Fiscal discipline continues to be applied, and the public-sector borrowing requirement, i.e. the deficit before borrowing of the central government, provincial governments, local authorities, non-financial public enterprises and public corporations, averaged 1,7 per cent of gross domestic product in the first nine months of fiscal 1999/2000. Prudent monetary discipline will continue to be pursued. Moreover, there is still excess production capacity in the economy. These factors should, over the medium term, contain inflationary pressures.

In view of the above circumstances the Monetary Policy Committee has decided that the current level of the repurchase rate of the Reserve Bank should be maintained.

Inflation targeting

There still seems to be uncertainty about the application of inflation targeting in South Africa despite the explanations given by the Department of Finance and the Reserve Bank. The Monetary Policy Committee therefore decided to append to this statement a more detailed explanation of the new monetary policy framework.

A new monetary policy framework

Appendix to the statement issued by Mr T T Mboweni, Governor of the South African Reserve Bank, on 6 April 2000

Introduction

On 23 February 2000 the Minister of Finance announced in the Budget Speech that the government had decided to set an inflation target range of 3 to 6 per cent for the year 2002. The Reserve Bank has therefore formally adopted an inflation-targeting monetary policy framework. This means that the monetary authorities are now targeting the rate of inflation directly instead of following the previously applied “eclectic” monetary policy approach in which intermediate objectives still played a prominent role. In this statement the new monetary policy framework is explained in more detail.

Primary objective of monetary policy

The primary objective of monetary policy is to protect the value of the currency in order to obtain balanced and sustainable economic growth in the country. This objective is articulated in both the Constitution of the Republic of South Africa and in the South African Reserve Bank Act, No 90 of 1989. It requires the achievement of financial stability, i.e. price stability as well as stable conditions in the financial sector as a whole.

Price stability is achieved when changes in the general price level do not materially affect the economic decision-making processes. Although relative price movements will still have an impact on production, consumption, saving and investment, the rate of inflation or deflation would be so low that it would no longer be an important factor in economic decision making.

Stable conditions in the financial sector are achieved when there is a high degree of confidence that the financial institutions and financial markets are able to meet contractual obligations without interruption or recourse to outside assistance. Such stable conditions do not preclude the failure of individual financial institutions. A financial institution may fail and be allowed to fail even under stable financial conditions. It is only when the whole, or an important part, of the financial sector is at risk, that the situation can be described as financially unstable.

The two elements of financial stability, i.e. price stability and the stability of the financial sector, are closely related. Failure to maintain one of these elements provides an uncertain operating environment for the other, with causality running in both directions. For example, high inflation could lead to tighter monetary policy, higher interest rates, an increase in the non-performing loans of banks and a fall in asset and collateral values, which could precipitate bank and other failures in the financial sector. Conversely, disruptions in the financial system will make the transmission of monetary policy less effective and could materially affect changes in the general price level.

Financial stability is not an end in itself, but is regarded as an important precondition for sustainable high growth and employment creation. By establishing and maintaining financial stability the monetary authorities make their unique contribution to general economic development in South Africa. If financial institutions and markets are uncertain or unstable it is difficult to produce, consume and invest, and therefore to increase employment. The recent emerging-market financial crisis in 1997 and

1998 has also clearly illustrated that foreign investment can be withdrawn easily and in large amounts from countries that investors perceive as high-risk destinations. Moreover, it is difficult for a country with a high rate of inflation to remain competitive in a global environment where more and more countries have already successfully reduced inflation to low levels.

Inflation has many other disadvantages, such as:

- distorting the allocation of resources and often directing the efforts of entrepreneurs and investors into hedging operations instead of productive activity;
- discouraging saving: people spend money now rather than save for investment and future consumption if the expected value is much less;
- discriminating against fixed salaried workers, pensioners and low-income earners who cannot protect themselves against the impact of inflation; and
- usually leading to an even more unequal distribution of income and wealth.

The new inflation-targeting monetary policy framework is primarily concerned with one element of financial stability, i.e. price stability. For overall financial stability it is important that the Reserve Bank

- ensures the availability of high-quality currency in circulation in various denominations to serve as a reliable means to execute financial transactions in the economy;
- facilitates the development and maintenance of an efficient national payment, clearing and settlement system;
- encourages the development and efficient functioning of the money, capital and foreign exchange markets;
- monitors the financial risks of banks and supports the development of sound and well-managed banking institutions; and
- where appropriate, acts as lender of last resort providing assistance to solvent banks to safeguard the system from systemic risks arising from temporary liquidity shortages.

Inflation targeting

The government decided to set an inflation target as part of a new approach to monetary policy and price stabilisation because of certain advantages that such a framework is expected to have, such as:

- making the objective of monetary policy clear and thereby improving planning in the private and public sectors;
- forming part of a formalised co-ordinated effort to contain inflation in pursuit of the broader economic objective of sustainable high economic growth and employment creation;

- helping to focus monetary policy and enhancing the accountability of the central bank to the public; and
- providing an anchor for expectations of future inflation which should influence price and wage setting.

Inflation targeting is a monetary policy framework characterised by an announcement of a numerical target for the inflation rate that is intended to be achieved over a specific time period. In this definition it is important to note that inflation targeting is a framework not a rule, that the numerical rate is made public and that a definite time horizon is specified.

Although the achievement of the target becomes the overriding objective of monetary policy in an inflation-targeting framework, the adoption of the new framework does not mean that the central bank must apply rigid rules and is left without any discretion. Exclusive emphasis on inflation goals without a careful analysis of economic conditions can lead to serious distortions in the economy which could result in higher inflation over the long term. A rigorously applied rule deprives the central bank of its ability to deal with unusual or unforeseen circumstances.

In the application of inflation targeting in South Africa allowance will be made for serious supply shocks. Some discretion must be applied in order to avoid costly losses in terms of output and jobs. The Reserve Bank will have to monitor economic developments closely to determine the origin and likely impact of such supply shocks. It is not possible to specify in advance all the economic shocks that could affect monetary policy. Such shocks could include developments affecting the terms of trade of the country or large disruptive international capital flows. They could also arise from natural disasters. If such developments do occur, the public will be duly informed of the likely consequences for attainment of the monetary policy objective.

It is, however, also important that the inherent discipline of inflation targeting should not be foregone by applying discretion. The objective of the exercise is, after all, to achieve the target range. An inflation-targeting monetary policy framework can only be successful if the public is convinced that the central bank is serious about containing inflation. The benefits of inflation targeting depend on whether wage and price setting are responsive to the inflation target of the authorities. Public buy-in is essential to obtain low inflation and its consequent benefits for all. This requires a national effort, anchoring expectations around the inflation range. The challenge that the Reserve Bank faces is to apply this monetary policy framework without becoming too inflexible in its approach.

The numerical inflation target becomes the ultimate objective of inflation targeting. The immediate focus on intermediate targets such as the growth in money supply and bank credit extension falls away because an intermediate target can only be responded to when it is the dominating factor determining inflation within the specified time frame.

The growth in money supply and bank credit extension will, however, still be monitored closely, together with other economic indicators. These include the level of international interest rates, the shape and position of the yield curve, changes in nominal and real salaries and wages, changes in employment, nominal unit labour costs, the gap between potential and actual national output, general money-market conditions, changes in asset prices, the overall balance of payments position, the

terms of trade, exchange rate developments and the public sector borrowing requirement.

The numerical inflation target is announced explicitly to the public to indicate clearly what the Reserve Bank should be held accountable for and to make the application of this framework as transparent as possible. The announcement of the target makes the intentions of monetary policy explicit. If targets are not met, the central bank has to explain what went wrong. Regular reporting on the stance of monetary policy, as is the case internationally, will be made to Parliament.

The monetary policy stance will also be communicated regularly to the public. This is already done by means of a monetary policy statement after the completion of every meeting of the Monetary Policy Committee. A Monetary Policy Forum has also been established to open an avenue for ongoing discussions on monetary policy and general economic developments and to ensure that the views of interested parties are taken into account in the determination of monetary policy. The Monetary Policy Forum will meet twice a year in the major centres of South Africa to allow as many stakeholders as possible to participate in these discussions.

The Reserve Bank will also publish twice a year a Monetary Policy Review to increase transparency in the application of monetary policy. This Monetary Policy Review will attempt to describe in more detail the decisions taken by the central bank and will analyse developments in South Africa and the rest of the world that could affect inflation.

These reporting mechanisms should lead to a better understanding on the part of the public of the basis on which monetary policy decisions are made.

The fact that a definite time horizon is specified in inflation targeting makes it important that the central bank has a reliable forecasting framework. Although South Africa has experienced major structural changes in recent years, inflation still appears to be relatively predictable. The Reserve Bank currently makes regular inflation forecasts using a large, multipurpose, econometric model. However, this model is not suitable for inflation targeting. With the assistance of a number of central banks, the Reserve Bank is in the process of completing the development of a new core model specifically for the forecasting of inflation. In addition to this core model, Philips-curve models, other small-scale macroeconomic models, vector autoregressive models and indicator models are being developed.

Although these models are important tools for forecasting the future path of inflation, of course they cannot provide the ultimate answer. In determining the monetary policy stance, the predicted inflation rate of these models cannot be followed blindly. A careful analysis is also needed of underlying economic conditions which could affect the predicted outcome of the models. The Reserve Bank has, in addition, initiated a survey of inflation expectations to be undertaken by the Bureau of Economic Research of the Stellenbosch University. This should further enhance the information available for our forecasting framework.

Specification of the inflation target

The inflation target has been specified as achieving an average rate of increase in the overall consumer price index, excluding mortgage interest cost, (called the CPIX) of between 3 and 6 per cent for the year 2002.

The authorities opted for a variant of the consumer price index because the headline or overall consumer price index is influenced directly by changes in the Reserve Bank's repo rate through its effect on interest rates. A reduction in the repo rate or a relaxation of monetary policy leads, with a short lag, to a decrease in the consumer price index signalling lower inflation, while an increase in the repo rate or a more stringent monetary policy stance leads, with a short lag as well, to an increase in the consumer price index signalling higher inflation. To overcome this problem, it was decided to exclude mortgage interest cost from the consumer price index for inflation targeting purposes.

The authorities also decided against using the core inflation rate (i.e. the change in the overall consumer price index excluding the prices of certain food products, interest rates on mortgage bonds, overdrafts and personal loans, value-added tax and property taxes) for inflation-targeting purposes, despite certain advantages that the use of this index could have had. The measurement of core inflation has the advantage that it excludes prices directly affected by policy measures as well as some prices over which policy has no direct control and which could lead to misleading signals when these prices are affected by economic shocks. However, it does not exclude the impact of all of these kinds of prices, such as changes in oil prices. The measurement of core inflation has further disadvantages in that it does not comprehensively reflect the cost of living, is difficult for the public to understand and is less credible than headline inflation.

The Bank in agreement with the Department of Finance therefore opted to target the overall consumer price index excluding mortgage interest cost as measured for metropolitan and other urban areas, CPIX(mu)¹. Using the consumer price index for only the metropolitan areas would have restricted the measurement of inflation to 14 metropolitan areas. By opting for this more comprehensive measure of inflation, price changes in 53 metropolitan and other urban areas covering approximately 75 per cent of all consumption expenditure are taken into consideration in the inflation target. If in due course Statistics South Africa were to broaden the calculations to include the rural areas in measuring the consumer price index, excluding mortgage interest cost, this measure of inflation should be used for inflation targeting purposes.

¹ *M = metropolitan and
u = other urban*

The inflation target has been specified as a range or band because it affords the central bank some discretion in taking decisions on the monetary policy stance, and allows for a degree of uncertainty and statistical variability inherent in all economic processes. The range indicates that the Reserve Bank will have been successful in its pursuit of the target if the average annual rate in the stated measure of inflation lies somewhere within 3 to 6 per cent range in the calendar year 2002. It does not imply that the measured rate must be at the midpoint of this range. If it was required that the inflation rate should be at a specific level, a single point target would have been set.

The time horizon over which the target must be reached, has been determined as the average rate of increase in the defined index in the year 2002. It will therefore be calculated as the average annual increase in the relevant price index for the year 2002 as a whole. It was decided to use this medium-term target in view of the long lags between monetary policy steps and their impact on inflation. Changes in interest rates in South Africa generally take from 18 to 24 months to have a material influence on the underlying rate of inflation.

Monetary policy operational procedures

The application of an inflation-targeting monetary policy framework in South Africa will not directly affect the monetary policy operational procedures of the Reserve Bank. As in the past, the Reserve Bank's operations will be aimed at influencing the overall lending policies of banks, and also the demand for money and credit in the economy indirectly through changes in bank liquidity and interest rates in the money market.

The regular repurchase transactions between the Reserve Bank and banks will remain the main apparatus to regulate liquidity in the market. Fine-tuning measures will also be utilised to neutralise temporary fluctuations in bank liquidity and to steer money-market interest rates and yields in the desired direction. The instruments that will be used for fine-tuning will consist of additional repurchase or reverse-repurchase transactions, sales or purchases of short-term Treasury bills, Reserve Bank debentures, adjustments in the asset portfolio of the Corporation for Public Deposits, the transferring of government funds between Tax and Loan Accounts at private banks and the Exchequer Account at the Reserve Bank, and foreign currency swaps.

At times longer-run adjustments may be needed due to structural changes in the liquidity needs of the money market, or because of changes in the monetary policy stance. These adjustments are usually made to increase or decrease the private banks' need for central bank money on a lasting or longer-term basis. In addition to repurchase transactions, outright sales or purchases of domestic securities and variable cash reserve requirements are being and will still be applied to adjust the structural liquidity needs of banks.

Conclusion

The adoption of an inflation-targeting monetary policy framework provides the Reserve Bank with an explicit anchor or ultimate objective for monetary policy. At the same time it enhances the transparency of monetary policy and the accountability of the central bank. With this framework it should be clearer why interest rate or other policy changes are made. By achieving the target in the year 2002 the Reserve Bank will have taken a further significant step in the achievement of price stability in the country.

The monetary policy stance

19 April 2000

Statement issued by Mr T T Mboweni, Governor of the South African Reserve Bank, at a meeting of the Portfolio Committee on Finance, Cape Town

Introduction

The primary objective of the Reserve Bank is to achieve and maintain financial stability in South Africa, i.e. price stability as well as stability in the financial sector. Price stability is achieved when changes in the general price level do not materially affect the economic decision-making process. Stability in the financial sector is achieved when there is a high degree of confidence in the ability of the financial infrastructure to meet the requirements of market participants.

In this statement the current monetary policy stance to achieve financial stability is described in some detail, with reference to

- stability in the financial sector;
- recent developments in domestic prices;
- the inflation outlook;
- the monetary policy measures applied;
- the monetary policy decision-making process; and
- the transparency of monetary policy.

Stability in the financial sector

In contrast to many other emerging-market economies, the South African banking sector proved to be remarkably resilient during the global financial turmoil of 1997 and 1998. The banking sector's thorough preparations to avoid the possible effects of the transition to the year 2000, were also very effective. With the exception of a few minor disruptions which generally were not Y2K related, normal operations were reported by the banks during the change to the new millennium. The positive spin-offs of large-scale technology renewal, the rationalisation of systems and processes, the improvement of human resources and closer co-operation in the sector, should enhance efficiency.

Although the non-performing loans of banks have increased during the financial crisis and in 1999, increased provisions were made for bad and doubtful debts. As a ratio of total loans and advances, gross overdues in the banking sector increased from 4,6 per cent in the second quarter of 1999 to 4,9 per cent in the fourth quarter. However, provisions for doubtful debts were also increased and amounted to 57,5 per cent of total overdues in the fourth quarter of 1999. This is much more conservative than the international norm of 40 per cent.

The banks in South Africa are well capitalised and other sound banking principles are being applied. In particular, the anticipated short-term liquidity mismatch of banks, i.e. the difference between liabilities maturing within the next 31 days and assets maturing during the same period, decreased from 14,0 per cent of total liabilities in December 1999 to 12,6 per cent in February 2000.

All the other statistical information available to the Reserve Bank shows that conditions in the banking sector are stable and that profitability improved during 1999.

Although some of the smaller banks experienced a temporary liquidity squeeze towards the end of 1999 and the beginning of 2000 due to the reduction of whole-sale deposits, these problems were dealt with quickly and efficiently.

Recent developments in domestic prices

The annual average rate of increase in the consumer price index for metropolitan and other urban areas, excluding interest on mortgage bonds, declined marginally from 7,1 per cent in 1998 to 6,9 per cent in 1999. However, the year-on-year increase in this index picked up somewhat from a low of 6,5 per cent in October 1999 to 7,1 per cent in February 2000. This rising trend in consumer prices could mainly be attributed to increases in the prices of petrol and diesel, transport equipment and food.

The decline in interest rates on mortgage bonds brought overall consumer price inflation down from a year-on-year rate of 9,4 per cent in November 1998 to 1,7 per cent in October 1999. The rate of increase in this index then accelerated to 2,4 per cent in February 2000. The annual average increase in the overall consumer price index amounted to 5,2 per cent in 1999, compared with 6,9 per cent in 1998 and 13,9 per cent in 1992.

By contrast, production prices have risen sharply in recent months, mainly on account of the rise in international crude oil prices. Increases in international oil prices are reflected with a short lag in imported prices when contract prices are adjusted to reflect auction prices on international markets. The year-on-year change in the prices of imported goods rose from 5,9 per cent in December 1998 to 14,4 per cent in February 2000. The year-on-year inflation in the prices of domestically produced goods rose from 3,7 per cent to 6,5 per cent over the same period. As a result of these developments, the annual average increase in the total production price index accelerated from 3,5 per cent in 1998 to 5,8 per cent in 1999.

Inflation outlook

The recent acceleration in the increase in the all-goods production price index indicates that consumer prices will rise more rapidly over the coming months. The second-wave effects of the increase in international oil prices and domestic food prices will probably contribute to sharper increases in consumer prices over the short term. However, oil prices have started to decline since late March from levels in excess of US\$30 per barrel to current levels of around US\$22 per barrel because of a decision by OPEC to increase oil production by 1,7 million barrels per day. The favourable agricultural conditions experienced over the past six months should also have a positive spin-off on food prices. It is, therefore, expected that the acceleration in price inflation will peter out.

Various other developments reinforce this positive inflation outlook over the medium to longer term. The rate of increase in nominal unit labour costs in the non-agricultural formal sectors of the economy, for instance, has declined from nearly 11 per cent in 1994 to 3,5 per cent in 1999. A slowdown in the growth of earnings of workers was partly responsible for this development. The growth in nominal salaries and wages per worker declined from levels around 14 per cent in 1994 to about 7 per cent in 1999. In addition, labour productivity continued to rise sharply in the past five years. The average annual increase in productivity came to nearly 4½ per cent from 1995 to 1999. In view of the underutilisation of labour resources it seems likely that the growth in nominal unit labour costs will be contained in the next few years,

although a shortage of skilled workers could arise with a prolonged pick-up in economic activity.

There are no signs of excessive increases of domestic demand in the next three years. More rapid growth in economic activity is projected, but this growth is not expected to lead to unduly large deficits on the current account of the balance of payments. Favourable international conditions could lead to continued high growth in the exports of South Africa, which should partly offset increases in imports emanating from higher capital investment and a rise in domestic demand during the expected economic upswing.

South Africa should not experience any difficulty in financing the deficits on the current account of the balance of payments, provided that large disruptive international capital outflows do not occur. From 1994 to 1999, a net inflow of capital of about R78 billion has been recorded, of which R38 billion consisted of direct investment by non-residents in South African companies. The planned further restructuring of government assets should promote an even larger inflow of direct investment capital in the next three years. The total foreign debt of the country at a ratio below 30 per cent of gross domestic product is comparatively low. This allows some scope for foreign borrowing if the need should arise.

Conditions therefore seem favourable for the exchange rate of the rand. Inflation differentials between South Africa and its main international trading partners and competitors, however, could at times lead to a systematic and contained depreciation of the rand, which could affect the prices of imported goods. The planned further reduction in import duties and South Africa's trade agreement with the European Union will probably restrain the growth in imported prices and, through increased competition, the increase in domestic prices.

In addition, there are indications that inflation is rising in many of the advanced economies, which could narrow inflation differentials between South Africa and these economies. Price increases in advanced economies, however, are expected to be relatively moderate and should not have any significant impact on the prices of imported goods. These pressures on imported prices could also be alleviated by an expected sharp reduction in the inflation rates of developing countries and of the so-called countries in transition.

A prudent monetary policy will be pursued by the Reserve Bank to control the growth in money supply and bank credit extension. Inflation is a monetary phenomenon and cannot occur without more rapid increases in the quantity of money than in output, provided that changes in the velocity of circulation of money do not offset the growth in money supply. The Reserve Bank will continue to influence the growth in money supply and bank credit extension carefully by managing overall liquidity in the banking sector and the total demand for money. Considerable success has recently been achieved in this regard, and the growth rates in both money supply and bank credit extension have subsided to relatively low levels.

A further factor pointing to a decline in the inflation rate over the medium to long term is the fiscal discipline applied by the government. The public-sector borrowing requirement has been brought down from a level of nearly 6 per cent in the fiscal year 1994/95 to only 1,7 per cent in the first nine months of the fiscal year 1999/2000. In the Medium Term Expenditure Framework the government has indicated that it intends to keep a tight rein on expenditure over the next three years.

Considerable success has also been achieved in improving the collection of government revenue.

Monetary policy measures

Taking account of the favourable inflationary outlook and the generally more stable international economic conditions, the repurchase rate of the Reserve Bank was reduced considerably during 1999. At the height of the international financial crisis, when the Russian government declared a moratorium on the repayment of debt, the repurchase rate of the Reserve Bank rose to 21,86 per cent on 28 August 1998. The repo rate was held steady at this level until there was clear evidence that the crisis was over. From 13 October 1998 the repo rate was gradually reduced to 11,75 per cent on 14 January 2000, or by just more than 10 percentage points.

The marginal lending rate was also reduced during 1999. The marginal lending rate was initially introduced at one percentage point above the repo rate. This rate was then increased to a level of 20 percentage points above the repo rate during the global financial crisis. As a result of the more stable conditions internationally, the marginal lending rate was then reduced in steps to 5 percentage points above the repo rate from 25 November 1999.

In view of the pressures on domestic prices which arose during the last few months of 1999 and the projected developments in the inflation rate, the Reserve Bank managed the daily liquidity requirement of the banks in such a way that the repo rate has remained at a level of 11,75 per cent from the middle of January 2000. In making this decision the Bank not only took note of domestic economic developments, but also of the fact that official interest rates in many of the advanced economies have been raised from the second half of 1999 and that it is generally expected that they could increase further in the near future. Long-term interest rates and yields have also increased in these economies and the spread between yields on South African securities and those of the advanced economies narrowed considerably.

Obviously capital flows to and from South Africa can be affected by changes in interest rate differentials. In determining the level of official interest rates it is important to avoid any unnecessary fluctuations in interest rate levels. This is not always possible because of unforeseen developments. Likely domestic and international developments, however, have to be carefully taken into account when determining the monetary policy stance.

Greater stability in domestic interest rates also seemed warranted on account of the heightened volatility in many financial markets. These gyrations were to a large extent sparked off by volatility in the share prices of companies in the information technology sector in the United States. This was the first time in the past two years that developments in emerging markets were not responsible for global volatility. The uncertain conditions nevertheless led to increased risk aversion and affected portfolio flows to South Africa. In March 2000, non-residents were net sellers of bonds and shares to the tune of R5,9 billion. In April these net sales seem to have come to an end. The stability in domestic short-term interest rates contributed to an orderly adjustment in the external value of the rand.

The present level of interest rates in South Africa does not seem to be out of line with international interest rates. The real repo rate in South Africa at the end of February 2000 amounted to 4,3 per cent, compared with 2,5 per cent in the United States, 3,6 per cent in the United Kingdom and Australia, 6,3 per cent in Mexico and

more than 10 per cent in Brazil and Argentina. The real yield to maturity on domestic long-term government bonds at 6 per cent at the end of February 2000 was also not much higher than the 3,6 per cent in the United States and 4,7 per cent in Australia. In evaluating the level of long-term interest rates and yields in South Africa, some allowance must be made for currency and country risk.

The Reserve Bank's liquidity management during 1999 was aimed at increasing the private banks' dependence on central bank funding in order to create a more effective and efficient functioning of the daily auction of repurchase agreements. The operations of the Bank to withdraw liquidity from the market included increases in the issue of Reserve Bank debentures, reverse-repurchase transactions and foreign currency swaps with private banks.

Towards the end of 1999 the Reserve Bank actively engineered a sharp decline in the private banks' liquidity requirement to alleviate possible Y2K problems. The liquidity requirement of banks accordingly declined from R11,3 billion at the end of September 1999 to R2,4 billion at the end of December 1999. Subsequently, the Bank has again increased the liquidity requirement to approximately R8 billion at the beginning of April 2000.

The monetary policy decision-making process

The decision-making process in the conduct of monetary policy was changed considerably with the establishment of a Monetary Policy Committee. The Monetary Policy Committee consists of the Governor and deputy governors as voting members and senior officials of the Bank as non-voting members. It held its first meeting on 13 October 1999. Since its establishment the Monetary Policy Committee has now convened five times. This committee has proven to be of great value in the formulation of monetary policy. International and domestic economic developments are analysed in depth and the committee has made consensus decisions at each meeting about the policy stance to be pursued.

Monetary policy is always forward-looking because of the long lags from 18 to 24 months between monetary policy steps and their impact on inflation. Considerable use is therefore made of econometric models to forecast the likely path of inflation and other related variables. This does not imply that the results of models can be followed blindly. The Reserve Bank realises that econometric models have serious limitations, but they are nevertheless useful instruments to aid decision making.

The Reserve Bank currently uses a large, multi-purpose econometric model to assist the Monetary Policy Committee in reaching decisions. This model has 169 equations, of which 88 are stochastic behavioural equations. Although this model has been carefully constructed and maintained, it is not primarily focused on inflation targeting and therefore of limited use in this regard. Internationally, inflation-targeting countries prefer more simplified and smaller models, because the maintenance of larger models is cumbersome.

With the assistance of a number of central banks, the Reserve Bank is busy with the development of a suite of models which should be invaluable in the decision-making process. In particular, a core model is being developed which will be supplemented by a number of other models when forecasts of inflation are prepared.

The aim is to keep the core model concise so as to focus on key economic variables influencing inflation. The framework of the core model will consist of about 40 equa-

tions, of which about half will be stochastic behavioural equations. These stochastic structural equations are being estimated with co-integration and calibration techniques. In addition to the core model, a small-scale macroeconomic model of five equations, Philips-curve models and vector auto-regression models will be developed.

Transparency

For the effective application of monetary policy and greater credibility of the central bank, transparency is regarded as an important precondition. In the past year the Reserve Bank has made a major effort to enhance the transparency of its policy stance and operations without becoming counter-productive. The adoption of the inflation-targeting monetary policy framework has further assisted in making monetary policy transparent. The announcement of a numerical inflation target makes the intentions of monetary policy clear and precise. If targets are not met, the central bank will have to explain what went wrong.

The monetary policy stance is now communicated regularly to the public. This is done by means of a monetary policy statement after every meeting of the Monetary Policy Committee. A Monetary Policy Forum has also been established to open an avenue for ongoing discussions on monetary policy and general economic developments and to ensure that the views of interested parties are taken into account in the determination of monetary policy. The Monetary Policy Forum will meet twice a year in the major centres of South Africa to allow as many stakeholders as possible to participate in these discussions.

The Reserve Bank also plans to publish twice a year a Monetary Policy Review to increase transparency in the application of monetary policy. This Monetary Policy Review will attempt to describe in more detail the decisions taken by the central bank and will analyse developments in South Africa and the rest of the world that could affect inflation. In addition, the Bank already publishes a *Quarterly Bulletin*, *Annual Economic Report*, the *Annual Report* of the Bank Supervision Department and the *Governor's Address* at the Ordinary General Meeting of Shareholders. These publications and addresses of the governors are also made available on the website of the Bank.

Conclusion

By striving for financial stability and carefully analysing underlying economic conditions before adopting a specific monetary policy stance, the Reserve Bank believes that it is making its contribution to economic development in South Africa. Although financial stability will not automatically lead to higher employment-creating economic growth, it will contribute significantly to that end and is an important precondition for the improvement of the living conditions of all the people of South Africa.

Statement of the Monetary Policy Committee

19 May 2000

Issued by Mr T T Mboweni, Governor of the South African Reserve Bank, at a meeting of the Monetary Policy Committee in Pretoria

The Monetary Policy Committee meeting over two days made a detailed assessment of recent economic and financial market developments. The main conclusions of the committee are summarised in this statement.

International economic developments

International economic indicators that have become available since the last meeting of the Monetary Policy Committee confirm that a strong recovery is taking place in the world economy. According to the latest forecast of the International Monetary Fund, world economic growth is projected to rise from 3,3 per cent in 1999 to 4,2 per cent in 2000. This is expected to be accompanied by a decline in world inflation, despite an acceleration in the average inflation rate of advanced economies.

In the United States the first quarter growth rate amounted to a robust 5,4 per cent, the labour market remained tight, and rising labour costs fed through to higher inflation rates. The year-on-year consumer price inflation was in excess of 3 per cent in recent months, putting upward pressure on interest rates. On 16 May the Fed funds rate was therefore increased by a further 50 basis points to 6,5 per cent. The rising interest rates continue to attract significant capital flows into the United States, with a consequent loss of capital in other developed and developing economies. In addition, the volatility and generally downward tendency in United States share prices impacted negatively on other stock exchanges, particularly those in the emerging-market economies.

Good growth prospects in the euro area did not prevent the euro from depreciating to record low levels against the dollar and sterling. The weaker euro, combined with strong credit demand, increased pressures on prices and caused the European Central Bank to raise its benchmark interest rate by 25 basis points on four occasions since August 1999 to 3,75 per cent. On 11 May 2000 the Bank, however, decided to keep its rate unchanged.

The Bank of England has maintained an unchanged repo rate since the beginning of February 2000, as the impact of the strong exchange rate is expected to offset inflation pressures emanating from domestic demand growth and the tight labour market. Deflationary conditions continued in Japan with further decreases in consumer prices in the beginning of 2000. Japanese credit demand is weak and businesses are reducing debts as part of balance-sheet restructuring.

Economic growth prospects in Asia and Latin America remain good, although their stock markets were hit hard by the Wall Street correction. Inflation pressures in emerging-market economies have subsided. In the first few months of this year, economic conditions in sub-Saharan Africa were influenced to a large extent by political events in some of these countries.

Oil prices recorded a new six-week high on 19 May 2000 amid a combination of bullish fundamentals and speculative buying. Since the beginning of April, gold has traded within a range of \$270 to \$285 per fine ounce.

Domestic real economic developments

Initial indications are that the growth in real gross domestic production seemed to have slowed down in the first quarter of 2000. This development in the economic recovery process occurred despite further growth in the tertiary sectors. Agricultural output probably declined and the growth of manufacturing production may have levelled off. Real domestic expenditure was affected by a decline in real consumption expenditure of general government, but nevertheless appears to have expanded further because of increases in household consumption expenditure, fixed capital formation and inventories.

The Monetary Policy Committee noted the release of comprehensive labour statistics by Statistics South Africa, which indicates that total employment rose over the period 1996 to 1998. Little new information on the labour market has become available which would give reason to believe that formal-sector employment increased in the first four months of 2000.

Domestic monetary and financial conditions

The slowdown in the growth of labour costs during 1999 was neutralised by other price increases. As a result, the twelve-month rate of increase in the consumer price index for metropolitan and other urban areas, excluding interest rates on mortgage bonds, (CPIXmu) continued to rise from 6,5 per cent in October 1999 to 7,8 per cent in April 2000. Rising oil and food prices were the main driving forces behind this acceleration in inflation. Measured from quarter to quarter, the annualised rate of increase in this index also rose from 6,4 per cent in the third quarter of 1999 to 8,7 per cent in the first quarter of 2000.

The twelve-month rate of increase in the broadly defined money supply (M3) increased from a low of 5,5 per cent in August 1999 to 13,9 per cent in February 2000, before declining to 10,0 per cent in March. The quarter-to-quarter seasonally adjusted and annualised growth rate in M3 slowed down from 19,1 per cent in the fourth quarter of 1999 to 10,5 per cent in the first quarter of 2000.

The year-on-year growth in bank credit extended to the private sector receded from 9,6 per cent in January 2000 to 8,3 per cent in March. Mortgages, instalment sales and leasing finance picked up during the first quarter of 2000. In contrast to the pattern of the preceding three years, the increase in credit extension to the private sector in the first quarter of 2000 was concentrated in the household rather than the corporate sector.

Domestic financial markets

Financial market activity generally remained buoyant in the first 4½ months of 2000, but share market turnover per trading day receded somewhat in April and the first half of May. Share prices fell by 28 per cent from a peak on 17 January 2000 to a low on 17 April, but on balance strengthened again by 12 per cent up to 18 May. Prices and turnover in the property market firmed appreciably during the first quarter of 2000.

Capital-raising activity in the primary capital markets was rather subdued in the first quarter of 2000, owing mainly to the substantial reduction in the public-sector borrowing requirement.

The secondary market in bonds continued to suffer from selling pressures which started in mid-April. Regional events, adjustments in US security markets and higher international interest rates weighed heavily on the bond market and led to large net sales of securities by non-residents. Having been net investors in South African bonds to the amount of R16,5 billion from the beginning of 1999 until the end of January 2000, non-residents became net sellers and their sales totalled R17,0 billion up to 18 May 2000. Although these net sales by foreigners impacted negatively on bond yields, the weakening of approximately 115 basis points from the beginning of March was muted when compared with the magnitude of swings in bond yields over the past decade.

The adverse developments in the bond market were reflected in a change of the shape of the yield curve. The level of the yield curve shifted higher across the full maturity spectrum, while a more pronounced upward movement at the longer end led to a steepening of the curve. Despite this upward movement in rates, the inflation-adjusted yield on long-term bonds rose only marginally.

Money-market rates remained stable throughout April, but moderate increases in the rates of some money-market instruments, such as negotiable certificates of deposit, bankers' acceptances and forward rate agreements, became apparent in early May. Through operations such as foreign exchange swaps, reverse repurchase transactions and the issuing of debentures, the Reserve Bank steered the daily liquidity requirement of banks to a level of between R7,1 billion and R9,1 billion during April and the first half of May, and continued to provide fully in the estimated liquidity requirements at the daily repo auctions.

Balance of payments and foreign exchange market

The overall balance of payments position remained healthy in the first quarter of 2000. Trade figures indicate that the current account deficit probably decreased somewhat. A substantial increase in the value of imports was offset by a strong export performance. The increase in exports was mainly the result of higher export values of mining and manufactured products. A decline in the volume of oil imports was neutralised by an increase in international oil prices, leaving the value of oil imports at more or less the level of the second half of 1999. The rise in imports during the first quarter of 2000 was mainly due to imports of manufactured goods.

On the financial account of the balance of payments the already mentioned large net sales of bonds by non-residents were more than offset by net purchases of South African equities and other capital inflows. This enabled the Reserve Bank to reduce its net open foreign currency position by US\$2,8 billion in the first four months of 2000 to a level of US\$10,2 billion at the end of April.

Despite the fundamentally sound overall balance of payments, the exchange rate of the rand together with currencies in Europe, Australia, New Zealand and a large number of emerging-market economies in Asia and Latin America, came under considerable pressure. From the beginning of the year the rand depreciated against the US dollar from a level of R6,15 to the dollar to more than R7,00 to the dollar from the first week of May 2000. The rand also depreciated somewhat against the United Kingdom pound and Japanese yen, but fared better against the euro. The weighted average value of the rand accordingly declined by about 7½ per cent from 31 December 1999 to 18 May 2000. This decline in the rand was largely related to the strength of the US dollar and perceptions about the effect of developments in some sub-Saharan countries.

Stability in the financial sector

Conditions in the banking sector remained stable during the first quarter of 2000. Improvements in the efficiency of banks and their short-term liquidity mismatch, slightly higher returns on assets and equities, as well as a lower dependency of banks on wholesale deposits for funding, contributed to overall stability. In addition, total gross overdues of banks decreased from R29,2 billion in the fourth quarter of 1999 to R28,7 billion in the first quarter of 2000, or by 1,7 per cent. The quarterly decrease recorded in total overdues was evident in all three types of overdue accounts, i.e. in mortgages, instalment credit and other loans and advances.

Provisioning by banks for bad and doubtful loans and advances remained adequate. Total provisions as a percentage of gross overdues rose from 58,6 per cent from the fourth quarter of 1999 to 60,2 per cent in the first quarter of 2000. International best practice suggests that the ratio of total provisions to total gross overdues of 40 per cent is adequate. The South African situation clearly indicates that our position is solid and sound.

The problems experienced by FBC Fidelity Bank have been resolved in a manner that is good for depositors and for the banking sector as a whole. FBC Fidelity Bank was placed under curatorship in October 1999 when it experienced a liquidity crunch. Nedcor's takeover demonstrates that a bank can successfully be taken out of curatorship.

Monetary policy

The immediate upside risk for inflation in South Africa has increased as a result of the recent volatility in currency markets, the depreciation of the rand and a renewed increase in the oil price. The secondary effects of oil price increases, the higher rand values of imports and rising food prices during 2000, are expected to result in inflation pressures over the short term which will be monitored meticulously by the Reserve Bank.

Domestic economic conditions, however, remain sound and indications are at present that the inflation rate will be in the targeted band set for the year 2002. The recent depreciation of the rand, despite a healthy overall balance of payments position, could be followed by a correction in the trade-weighted value of the rand over the coming months, especially if a reversal should occur in portfolio outflows.

There are a number of other factors that bode well for the medium to longer-term outlook for inflation. These include relatively modest increases in nominal unit labour costs, the discipline applied by government in expenditure allocations and the progress made with revenue collections. The excess production capacity in the economy and modest growth in money supply and bank credit extension in the first quarter of 2000 are also very important. Moreover, a prudent monetary policy will continue to be pursued by the authorities in the coming months. If signs appear that stronger inflationary pressures are building up in the economy, the Reserve Bank will not hesitate to take appropriate measures.

Taking all the above circumstances into consideration, the Monetary Policy Committee has decided to maintain its current policy stance.

Long-term bond yields and future inflation in South Africa: a vector error-correction analysis

by G R Wesso¹

It is widely believed that bond yields contain useful information about expected inflation. This article takes the Fisher hypothesis as a long run relationship. Evidence is provided on the predictive content of the bond yield for future inflation, using cointegration and error-correction modelling techniques. South African quarterly data from 1985 to 1999 are used, and the results indicate that long-term bond yield movements are largely driven by expected inflation. An increase in expected inflation therefore leads to a steepening in the yield curve, but the results show that a steeper yield curve does not necessarily signal a rise in actual future inflation. The findings support the idea that steep long-term yield movements can therefore be interpreted as partly indicative of shifts in the credibility of the central bank's commitment to low inflation.

Key words: Monetary policy, future inflation, bond yield, cointegration, vector error-correction.

Introduction

In recent years, central banks in many countries have increasingly focused on the goal of price stability. In pursuing this goal, central banks need information about the degree of inflationary pressures in the economy, and a natural place to look for this information is the term structure of interest rates, or the yield curve.

The term structure of interest rates has long been of interest to monetary policy makers and their advisers. The market determines different yields on investments of different maturities; of considerable importance is the gap between interest rates on short-dated investments and those with longer maturities. If these interest rates are plotted against unexpired maturity, the result is the yield curve, and of importance is its slope (which is the difference between nominal interest rates on longer-dated bonds and shorter-dated securities).

The transmission of monetary policy is conventionally viewed as running from short-term interest rates managed by central banks to the longer-term rates that influence aggregate demand. A central bank's influence over longer-term interest rates comes from the fact that the market determines these as the average expected level of short-term rates over the relevant horizon (abstracting from a term and default risk premium). Working in the other direction, the long-term bond yield contains a premium for expected inflation, and thus serves as an indicator of the credibility of a central bank's commitment to low inflation. That alone merits the attention of central bankers to significant bond yield movements.

A related but separate issue is the extent to which bond yields actually have proven to be a good forecaster of future inflation trends. Accurate projections of inflation are a key element in the conduct of monetary policy, and it is useful to extract the information content of the yield curve. In 1998, when the slope of the South African yield curve was inverted, some analysts argued that the curve was signalling a sharp slowdown in economic activity. Towards the end of 1999, when the yield curve was positive and steep, some economists were predicting a significant acceleration in economic activity. It is sometimes difficult to read unambiguous signals from these changes in the shape of the yield curve. In this regard, the Governor of the South African Reserve Bank, Mr T T Mboweni (1999), pointed out that one should keep in

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mind that expected inflation is only one factor determining nominal interest rates. An increase in expected inflation should lead to a steepening of the yield curve, but a steeper yield curve does not necessarily signal a rise in expected inflation.

This paper relies essentially on the expectations theory in which long-term interest rates are affected by long-term inflationary expectations (which in turn are affected by the commitment of the central bank to price stability). Based on this approach, the four variables used in the analysis are the nominal yield on 10-year South African government bonds, inflation (excluding changes in food and energy prices), the nominal securities repurchase rate of the Reserve Bank, and the output gap, indicating the extent of capacity utilisation in the economy. Theoretically, other determinants might also explain the term structure. An important one is short run movements in the real interest rate that affect the bond yield, without a change in expected inflation.

In this study, the Fisher (1930) relation between the inflation rate and the nominal bond yield is empirically investigated, using cointegration and error-correction modelling techniques. The objective is to extract from the yield curve information about future inflation. The methodology is based on the Johansen procedure to determine the existence of a cointegration relationship. Using South African data from the first quarter of 1985 to the second quarter of 1999, this article attempts to extend the existing literature by presenting a more rigorous econometric analysis of the information about future inflation contained in the term structure of interest rates. The cointegration relationship is estimated and tested over all four variables implied by the approach developed by Mehra (1998) instead of employing the usual bivariate approach used in other studies.

Prior research

It is widely believed that bond yields contain useful information about expected inflation. Many have empirically investigated this issue by examining whether the slope of the term structure has any predictive content in forecasting future inflation. That research, however, has produced diverse results. In a series of papers, Mishkin (1990, 1991) and Jorion and Mishkin (1991) report evidence indicating the slope has predictive content at long horizons, but not at short horizons. By contrast, Engsted (1995) investigated whether the difference between the long-term rate and the lagged inflation rate would predict future inflation. He found that although this difference helped predict future inflation for a number of countries, it did not do so for the United States.

The empirical evidence on the topic of cointegration in this regard is mixed. Mishkin (1992) used the two-step approach proposed by Engle and Granger (1987) and found only tentative support for cointegration. Also, the multi-country results presented by Engsted (1995) did not provide a consistent picture of the long run relationship between the two variables. However, Crowder and Hoffman (1996) as well as Wallace and Warner (1993) who used the multivariate approach of Johansen (1988) concluded that a long run relationship between inflation and interest rates cannot be rejected. The same conclusion was reached by Evans and Lewis (1995) who used a modified least-squares estimator and observed cointegration in their data. Mehra (1998) concluded that in the long run, permanent movements in actual inflation have been associated with permanent movements in the bond yield. He also examined whether the predictive content of the bond yield had changed over time, and found conflicting results for the various subperiods. Consequently, the question whether these variables are cointegrated is still moot.

Movements in bond yields since 1985

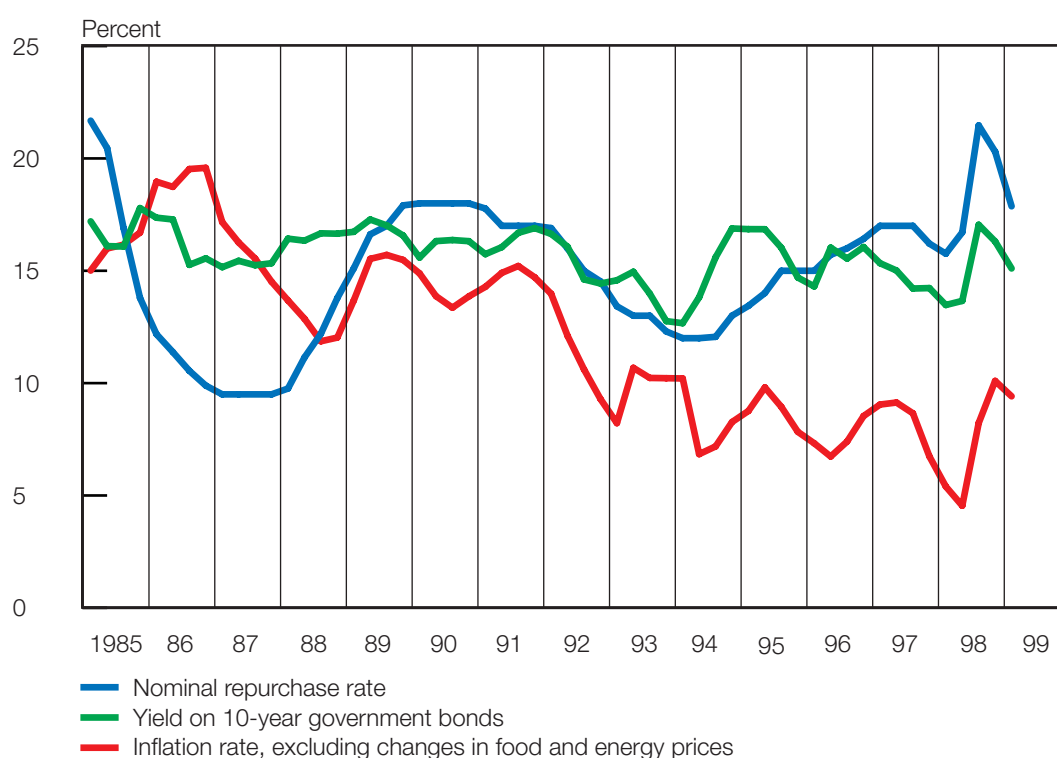
In South Africa, bond prices and *ex post* real returns became increasingly variable during the period of high and fluctuating inflation and inflation expectations after 1985. The variability of returns was due in part to the increased range of short-term rates that the central bank influenced in its attempt to bring rising inflation under control. When inflation moved above 18 per cent per year in 1986, long-term bond yields were almost double and bond prices were about half of what they had been in the mid-1970s.

Since 1993, the shape of the South African yield curve has been subject to fairly significant changes. After the 1993 yield curve normalisation, the yield on long-term government bonds, which had already fallen from 17 per cent to 14 per cent, fell another 200 basis points to around 12 per cent in January 1994. From mid-April to August 1998, when South Africa was affected by the global crisis in emerging markets, the slope of the yield curve was negative; it changed from a slight to a fairly steep inversion. Tight monetary conditions caused yields on short-dated bonds to rise more than yields on long-dated bonds. The overall level of the curve rose, reflecting heightened uncertainties about the future direction of financial policies, nervousness about investment in emerging markets and an upward adjustment of expectations about future inflation. The financial markets gradually settled down in the last three months of 1998 and yields declined when monetary conditions eased as the exchange rate of the rand stabilised. From March 1999, short-term yields declined to levels below those of long-term yields and the yield curve assumed a positive slope which subsequently steepened.

The graph illustrates these movements in the yield on 10-year government bonds (*BR*), the inflation rate, excluding changes in food and energy prices (*PX*), and the nominal repurchase rate (*REPO*²) of the Reserve Bank.

2 The repo rate has been used as a proxy for the Bank rate since March 1998

The bond yield, repo rate and inflation rate



This graph indicates that inflation declined to about 7 per cent by 1996, and since then has declined to a lower level in 1999. Long-term bond yields continued to be sensitive to new information that indicated potentially higher future inflation and likely central bank action on short-term rates to head it off.

Time lags between changes in inflation and bond yields

One of the most important lessons learned by central bankers in recent decades is that credibility for low inflation is the foundation of effective monetary policy. The Reserve Bank has gained credibility since the early 1990s by consistently taking policy actions to hold inflation in check. Experience shows that the guiding principle for monetary policy is to pre-empt rising inflation. The go-stop policy experience of the 1970s and 1980s taught that waiting until the public acknowledged that inflation was a problem, would mean waiting for too long. At that point the higher inflation would become entrenched and would have to be counteracted by corrective policy actions more likely to depress economic activity (see Goodfriend, 1998).

It is generally recognised that a pre-emptive monetary policy strategy should be directed at combating inflation rather than influencing short run changes in unemployment. That puts a premium on a forward-looking indicator, especially one that embodies a direct measure of inflation expectations, such as long-term bond yields. Goodfriend (1998) points out that the bond yield has not been a particularly good forecaster of changes in trend inflation, and so it certainly needs to be used in conjunction with other economic indicators. Yet there is evidence that the long-term nominal bond yield moves primarily as a result of inflation expectations. Steep bond yield movements ought to be taken as evidence of worsening or improving the credibility of fighting inflation, as the case may be, and taken into account in making decisions on short-term policy.

It is difficult for policy makers to know when, and how much, to change short-term interest rates in order to curb inflation or to resist a recession. In practice a central bank moves short-term rates in steps so that it can observe the consequences of its actions and assess sequentially the need for each incremental rate change. Policy makers know that it takes some months for the economy to feel the effects of a given change in rates. As tightening proceeds, for example, central bankers become more cautious about taking further actions for fear of overdoing it and creating a recession. Of course, the converse risk is that excessive caution might allow inflation to rise.

If a central bank has credibility as an inflation fighter, then markets may guess correctly that an initial increase in the short-term rate is likely to be followed by further increases. The expected future path of short-term rates will immediately be built into the term structure of interest rates (see Dahlquist and Lars, 1996).

Empirical investigation

Data sources

The empirical work examines, among other things, the dynamic interaction between the bond yield and the inflation rate. It uses quarterly data that span the period 1985 to 1999. The economic variables that enter the analysis are the yield on long-term government bonds, the actual inflation rate, the repurchase rate, and the output gap that measures the utilisation of productive resources. The bond yield is the nominal

yield on 10-year South African government bonds (*BR*). Inflation is measured by changes in the consumer price index, excluding changes in food and energy prices (*PX*). The indicator of the monetary policy stance is the nominal repurchase rate (*REPO*), and the output gap (*GAP*) is the natural log of real GDP minus the natural log of potential GDP.³

3 The potential GDP was estimated using Cobb-Douglas production function and Hodrick-Prescott (1997) filter technique on the technology variable

Cointegration analysis and vector error-correction modelling

A group of non-stationary time series is cointegrated if some of them have a linear combination that is stationary; that is, the combination does not have a stochastic trend. The linear combination is called the cointegrating equation. Its normal interpretation is as a long run equilibrium relationship. One can test hypotheses about cointegration within a framework established by Johansen (1991).

The vector error-correction (VEC) model is a restricted vector autoregression (VAR) designed for use with nonstationary series that are known to be cointegrated. The VEC specification restricts the long run behaviour of the endogenous variables to converge to their cointegrating relationships while allowing a wide range of short run dynamics. Estimation of a VEC model proceeds by first determining one or more cointegrating equations using the Johansen (1991) procedure. The first difference of each endogenous variable is then regressed on a one-period lag of the cointegrating equation(s) and the lagged first differences of all of the endogenous variables in the system.

The specification of exogenous intercepts and trends should be made by choosing from a set of assumptions provided in the Johansen (1991) procedure. In this study it is assumed that the data have a linear deterministic trend and an intercept (but no trend) in the cointegrating equation. This choice is based on the proposition that long run equilibrium conditions (such as the relationship between the bond yield and the inflation rate) probably do not have trends. In choosing a final VEC model of the data, one should be guided by both economic theory and statistical criteria. The normalised cointegrating equations should confirm one's beliefs about long run relationships among the variables.

In the Fisher relation for interest rates, the bond yield is related to expectations of future inflation and the real interest rate. If one assumes that those expectations can be proxied by distributed lags on current and past values of actual inflation and other fundamental economic determinants, then the Fisher relation implies the following regression for the bond yield (*BR*) at time *t*:

$$BR_t = a + \sum_{s=0}^k b_s PX_{t-s} + \sum_{s=0}^k c_s X_{t-s} + u_t \quad (1)$$

where PX_t is the actual inflation rate as defined above, X_t is the vector containing other economic determinants of the real rate (such as *GAP* and *REPO*), and u_t is the disturbance term. The presence of the disturbance term reflects the assumption that distributed lags on actual values of economic determinants may be good proxies for their anticipated values in the long run but not necessarily in the short run.

If levels of the empirical measures of these economic determinants, including the bond yield, are unit root nonstationary, then the bond yield may be cointegrated with these variables as in Engle and Granger (1987).

Under those assumptions, Equation 1 can be formulated as:

$$BR_t = d_0 + d_1 PX_t + d_2 X_t + e_t \quad (2)$$

Equation 2 is the cointegration regression. The coefficients that appear on PX_t and X_t measure the long run responses of the bond yield to inflation and other real rate determinants, respectively. The question whether the bond yield incorporates expectations of future inflation is investigated by testing whether the bond yield is cointegrated with the actual inflation rate. The analysis therefore views the positive relationship between the bond yield and actual inflation as a long run phenomenon.

If the bond yield rises above its long run equilibrium value, then either the bond yield should fall or the economic determinants, including inflation, should adjust in the direction needed to correct the disequilibrium, or both. These short run dynamic adjustments are examined by building a vector error-correction model that consists of short run inflation and bond yield equations. The behaviour of the error-correction variable, defined below, provides information about the ways that the bond yield and inflation adjust in the short run. Therefore, if the error-correction term is positive and statistically significant in the short run inflation equation, then that evidence can be interpreted to mean that the bond yield signals future inflation. The cointegrating relations are defined as:

$$BR_t = a_0 + a_1 PX_t + u_{1t} \quad (3)$$

$$REPO_t = b_0 + b_1 PX_t + u_{2t} \quad (4)$$

where the u_1 and u_2 are stationary disturbance terms. Equation 4 can be interpreted as a policy reaction function. The behaviour of the error-correction term $u_{1t} = BR_t - a_0 - a_1 PX_t$ is examined in the short run equations of the form:

$$\begin{aligned} \Delta BR_t = & b_0 + \sum_{s=1}^{k1} b_{1s} \Delta BR_{t-s} + \sum_{s=1}^{k2} b_{2s} \Delta PX_{t-s} + \sum_{s=1}^{k3} b_{3s} \Delta REPO_{t-s} + \sum_{s=1}^{k4} b_{4s} GAP_{t-s} \\ & + \lambda_1 u_{1,t-1} + \delta_1 u_{2,t-1} \end{aligned} \quad (5)$$

and

$$\begin{aligned} \Delta PX_t = & c_0 + \sum_{s=1}^{k1} c_{1s} \Delta BR_{t-s} + \sum_{s=1}^{k2} c_{2s} \Delta PX_{t-s} + \sum_{s=1}^{k3} c_{3s} \Delta REPO_{t-s} + \sum_{s=1}^{k4} c_{4s} GAP_{t-s} \\ & + \lambda_2 u_{1,t-1} + \delta_2 u_{2,t-1} \end{aligned} \quad (6)$$

where all variables are defined as before. The short run equations include first differences of the bond yield, inflation, the repo rate and level of the output gap. The last two variables do not enter the long run bond yield in Equation 3. Equations 5 and 6 include an approximation of the real bond yield (u_1), and the current stance of short run monetary policy measured by an approximation of the real repo rate (u_2). These variables capture the short run impacts that monetary policy and the state of the

economy have on the bond yield and the inflation rate, respectively. The parameters of interest are λ_1 , λ_2 , and the expected signs of these parameters for the error-correction term (u) are positive for ΔP and negative for ΔBR . Thus, if λ_2 is positive and statistically significant, then a rise in the real bond yield ($u_{1t} = BR_t - a_0 - a_1 PX_t$) signals higher inflation, whereas a rise in the difference between the repo rate and the inflation rate is expected to have a negative effect on the inflation rate. If the coefficients that appear on the real bond yield and the real repo rate are equal in size but opposite in sign, it suggests that increases in the real bond yield accompanied by equivalent increases in the real repo rate have had no effect on actual future inflation rates. The presence of cointegration between BR_t and PX_t implies further that either $\lambda_1 \neq 0$, $\lambda_2 \neq 0$, or both.

Results

Cointegration and error-correction modelling involves four steps. First, determine the stationarity properties of the empirical measures of economic determinants suggested above. Second, test for the presence of cointegrating relationships in the system. Third, estimate the cointegrating regression and calculate the residuals. Fourth, construct the short run error-correction equations. All tests were conducted at a 5 per cent level of significance.

The lag structure has an impact on the short run dynamics of the model. The number of lags in the unrestricted VAR was selected by using the procedure given in Hall (1994), and a combination of criteria such as the Schwarz Bayes' information criteria, the Akaike criteria and likelihood ratio tests of model reduction (see Lutkepohl (1993). The concept of Granger (1969) causality tells us that the information content of lagged endogenous variables has to be taken into account before one can determine the predictive quality of other (explanatory) variables. Otherwise, spurious results might emerge. Granger's tests of causality were therefore used to determine whether short run changes in the bond yield have an impact on inflation. The causality can go the other way: increases in inflation could cause an increase in the bond yield. The results are reported in Table 1.

A Wald-F test has been computed, and if the null hypothesis cannot be rejected, the conclusion is that the data do not show causality. The test does, however, indicate a bi-directional causality between price and government bond yield differences. But tests of causality combined with tests on the cointegrating vectors are necessary to understand the dynamics of the model.

Table 1 Pairwise Granger causality test

Pairwise Granger causality test Sample: 1985:1 1999:2 Lags: 2			
Null hypothesis:	Observations	F-statistic	Probability
$D(PX)$ does not Granger Cause $D(BR)$	55	3,22893	0,04799
$D(BR)$ does not Granger Cause $D(PX)$		3,37999	0,04199

D = first-level differences

4 The sensitivity of results to some changes in specification was examined, but qualitatively they produce similar results

A variable X_t is considered unit root nonstationary if the hypothesis that X_t has a unit root is not rejected by the augmented Dickey-Fuller (Dickey and Fuller, 1979) test. Table 2 shows the test results for determining whether the rest of the variables have a unit root. No trend or intercept was used in the test equation, and the number of lagged differences in the test equation equals 1. As can be seen, the ADF statistic that tests the null hypothesis that a particular variable has a unit root is small for *BR*, *PX*, and *REPO*, which indicates that these variables have a unit root and are therefore nonstationary in levels, but *I*(1) stationary when differenced once. The output gap variable is taken in level form in the analysis.⁴

Table 2 ADF test for unit root in variables

Variable	ADF test statistic	5 per cent critical value	Order of integration, <i>I</i> (d)
<i>BR</i>	-0,425	-1,946	<i>I</i> (1)
<i>D(BR)</i>	-6,059	-1,946	
<i>PX</i>	-1,182	-1,946	<i>I</i> (1)
<i>D(PX)</i>	-5,086	-1,946	
<i>REPO</i>	-1,169	-1,946	<i>I</i> (1)
<i>D(REPO)</i>	-4,025	-1,946	
<i>GAP</i>	-2,484	-1,946	<i>I</i> (0)

D = first-level differences

The test used for cointegration is the one proposed in Johansen (1991). Table 3 presents test statistics for determining the number of cointegrating equations (CE) in the system (*BR*, *PX*, *REPO*, *GAP*). Trace and maximum eigenvalue statistics presented in this table indicate that there are two cointegrating relations in the system. Structural changes in the economy and political factors can also have an impact on the bond yield and inflation expectations. Controlling for structural breaks is essential as the predictive content of the term structure can change over time. A dummy variable (*DUMREP*, 1998:3=1) was therefore used in the analysis to capture the effect of the Southeast Asian crisis during 1998.

Table 3 Estimates of restricted cointegrating vectors

Sample: 1985:1 1999:2
 Included observations: 51
 Test assumption: Linear deterministic trend in the data
 Series: *BR REPO PX*
 Exogenous series: *GAP(-1 TO -6) DUMREP*
 Lags interval: 1 to 6

Eigenvalue	Likelihood ratio	5 per cent critical value	1 per cent critical value	Hypothesised No. of CE(s)
0,519217	61,52474	29,68	35,65	None **
0,377499	24,17546	15,41	20,04	At most 1 **
1,89E-05	0,00097	3,76	6,65	At most 2

*(**) denotes rejection of the hypothesis at a 5 per cent (1 per cent) significance level

L.R. test indicates 2 cointegrating equation(s) at 5 per cent significance level

Table 4 presents estimates of the cointegrating relationship found in the system. The error-correction coefficients (t -values in parentheses) for the long run and short run equations 3-6 appear in this table. Since $\lambda_1 \neq 0$ it implies that BR_t and PX_t are cointegrated.

Table 4 Summary of results from error-correction equations

Estimation period: 1985:1 to 1999:2		
Cointegration equations: $u_{1t-1} = BR_{t-1} - 13.3 - 0.20PX_{t-1}$; $u_{2t-1} = REPO_{t-1} - 13.6 - 0.11PX_{t-1}$		
Variables	Error-correction regression coefficients	
	ΔBR_t equation	ΔPX_t equation
Real bond yield, u_{1t-1}	-0,62* ($= \lambda_1$) (-2,06)	0,69 ($= \lambda_2$) (1,65)
Real repo rate, u_{2t-1}	-0,08 ($= \delta_1$) (-1,11)	-0,19* ($= \delta_2$) (-4,92)

Notes: The coefficients reported are from error-correction regressions that include the bond yield (BR), the inflation rate (PX), the nominal repo rate ($REPO$), and the output gap (GAP) (see Equations 3-6 in the text, and the results in Appendix 1, for more details). In addition, the model has two error-correction variables (u_{1t-1} and u_{2t-1}). Parentheses contain t -statistics for the error-correction variable (u_{t-1}). * denotes rejection of the hypothesis at a 5 per cent significance level

These tables indicate that the error-correction coefficient (λ_1) is negative and statistically significant in the bond yield equation (ΔBR), while in the inflation equation (ΔPX), λ_2 is positive, but not statistically different from zero at a 5 per cent level of significance. Because of this, a rise in the real bond yield ($u_{1t} = BR_t - a_0 - a_1P_t$) does not signal higher actual inflation. These results therefore mean that the long-term nominal bond yield moves primarily as a result of inflation expectations, but a steeper yield curve does not necessarily signal a rise in actual future inflation. On the other hand, the coefficient that appears on the real repo rate variable of the inflation rate equation is negative and statistically significant. This is consistent with the presence of policy-induced movements in the real component of the repo rate and their subsequent negative effects on future inflation rates. It indicates further that the Reserve Bank was geared towards reducing inflation over the sample period. The dummy variable ($DUMREP$) used to capture the effect of the Southeast Asian crisis appears significantly in both the error correction equations, indicating a structural shift in the data during 1998:3 (see Appendix 1).

Concluding remarks

This article builds on the long run properties of the Fisher hypothesis. The findings show that the bond yield is cointegrated with the inflation rate over the 1985:1 to 1999:2 period, which indicates that in the long run, permanent movements in actual inflation have been associated with permanent movements in the long-term bond yield. It indicates further that long-term bond yield movements are driven by expected inflation. The results support the idea that steep long-term yield movements can be partly interpreted as indicative of shifts in the credibility of the central bank's commitment to low inflation. However, the real bond yield does not help predict one-quarter-ahead changes in the rate of inflation. Since inflation is a nonstationary process, the results also imply that the real bond yield has no predictive content for long-horizon forecasts of future inflation.

Since the early 1990s the Reserve Bank has adhered to a disinflationary policy in order to reduce trend inflation and contain inflationary expectations. This behaviour may provide an explanation for the deterioration in the predictive content of the bond yield for actual future inflation. To the extent that rising long run inflationary expectations evidenced by the rise in the bond yield were triggered by news of anticipated demand growth, the Reserve Bank may have calmed those expectations by raising the interest rate at which overnight central bank funds were provided to banks. The induced tightening of monetary policy may have reduced inflationary expectations by reducing actual or anticipated demand growth, thereby preventing any increase in actual inflation. Given such behaviour, observed increases in the bond yield do not necessarily indicate that actual inflation is going to accelerate in the near term.

However, a few limitations in the study are worth mentioning. Firstly, it uses lagged inflation rates as a proxy for inflation expectations. One of the greatest difficulties facing all central banks is getting a reliable measure of inflation expectations.

Secondly, the regression coefficients might also be sensitive to the relative variability of expected future inflation changes and real term structures⁵. Any change in the monetary policy framework in South Africa is likely to change the correlation and relative variability of expected future inflation changes and term structure slopes, thus causing the regression coefficients to change in the inflation-forecasting equation. Therefore, the forecasting ability of the term structure for the path of future inflation could change dramatically, making the term structure a poor guide for monetary policy. It seems reasonable to assume that changes in a policy regime will cause changes in the parameters of the behavioural relationship (see the Lucas (1976) critique).

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⁵ See Wesso (1995) for an extensive discussion on varying coefficients in econometric models

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Appendix 1

Error-correction regression results

Sample (adjusted): 1986:4 1999:2
Included observations: 51 after adjusting endpoints
Standard errors and *t*-statistics in parentheses

Error Correction:	<i>D</i> (BR)	<i>D</i> (PX)
<i>CointEq1</i>	-0,619025 (0,30083) (-2,05771)	0,690115 (0,41861) (1,64859)
<i>CointEq2</i>	-0,082540 (0,07441) (-1,10925)	-0,195461 (0,03971) (-4,92170)
<i>D</i> (BR(-1))	0,480711 (0,24933) (1,92804)	-0,318596 (0,34694) (-0,91831)
<i>D</i> (BR(-2))	0,489648 (0,24315) (2,01379)	-0,309298 (0,33834) (-0,91416)
<i>D</i> (BR(-3))	0,114607 (0,24714) (0,46374)	-0,447540 (0,34389) (-1,30140)
<i>D</i> (BR(-4))	0,270383 (0,20804) (1,29967)	-0,223517 (0,28949) (-0,77211)
<i>D</i> (BR(-5))	0,284586 (0,21234) (1,34023)	-0,378930 (0,29547) (-1,28245)
<i>D</i> (BR(-6))	0,360058 (0,18549) (1,94109)	-0,015411 (0,25811) (-0,05971)
<i>D</i> (REPO(-1))	-0,346273 (0,22014) (-1,57298)	-0,234864 (0,30632) (-0,76672)
<i>D</i> (REPO(-2))	-0,365745 (0,21042) (-1,73820)	0,054323 (0,29279) (0,18553)
<i>D</i> (REPO(-3))	0,160208 (0,22747) (0,70429)	-0,449935 (0,31653) (-1,42146)
<i>D</i> (REPO(-4))	0,036519 (0,36963) (0,09880)	0,220931 (0,51434) (0,42954)
<i>D</i> (REPO(-5))	-0,299343 (0,31781) (-0,94188)	-0,296399 (0,44224) (-0,67022)
<i>D</i> (REPO(-6))	0,636253 (0,25978) (2,44917)	0,081795 (0,36149) (0,22627)
<i>D</i> (PX(-1))	0,133765 (0,16586) (0,80650)	0,403034 (0,23079) (1,74630)

<i>D</i> (PX(-2))	-0,099411 (0,18127) (-0,54842)	-0,345016 (0,25224) (-1,36783)
<i>D</i> (PX(-3))	-0,087500 (0,14355) (-0,60956)	0,259614 (0,19975) (1,29973)
<i>D</i> (PX(-4))	-0,420038 (0,13934) (-3,01451)	-0,706399 (0,19389) (-3,64329)
<i>D</i> (PX(-5))	0,292723 (0,16390) (1,78600)	0,174442 (0,22807) (0,76488)
<i>D</i> (PX(-6))	0,121738 (0,17306) (0,70346)	-0,301469 (0,24081) (-1,25190)
<i>C</i>	0,071601 (0,13585) (0,52707)	-0,431086 (0,18903) (-2,28050)
<i>GAP</i> (-1)	6,592724 (18,9266) (0,34833)	37,58158 (26,3364) (1,42698)
<i>GAP</i> (-2)	-13,75139 (32,7032) (-0,42049)	-47,36100 (45,5066) (-1,04075)
<i>GAP</i> (-3)	69,02598 (32,1011) (2,15027)	55,08871 (44,6688) (1,23327)
<i>GAP</i> (-4)	-21,74523 (29,3496) (-0,74090)	-3,234590 (40,8401) (-0,07920)
<i>GAP</i> (-5)	-5,951068 (25,3274) (-0,23497)	15,04569 (35,2432) (0,42691)
<i>GAP</i> (-6)	-24,33822 (19,1998) (-1,26763)	-14,23497 (26,7166) (-0,53281)
<i>DUMREP</i>	3,712006 (0,90472) (4,10292)	4,294384 (1,25893) (3,41115)
R-squared	0,773084	0,782017
Adj. R-squared	0,506704	0,526124
Sum sq. resids	8,698912	16,84360
S.E. equation	0,614991	0,855763
F-statistic	2,902190	3,056028
Log likelihood	-27,26586	-44,11556
Akaike AIC	2,167289	2,828061
Schwarz SC	3,227899	3,888671
Mean dependent	-0,007457	-0,227883
S.D. dependent	0,875619	1,243143
Determinant Residual Covariance		0,002256
Log Likelihood		-61,69897
Akaike Information Criteria		5,948979
Schwarz Criteria		9,358083
<i>D</i> = first-level differences		

Notes to tables

Foreign debt of South Africa – Table S-100

The value of rand-denominated bonds held by non-resident investors at the end of December 1998 was adjusted downwards because of revised information submitted by one of the large financial institutions.

Foreign liabilities of South Africa – Table S-92

The value of fixed-interest securities of public authorities and public corporations (portfolio investment liabilities) held by non-resident investors at the end of December 1998 was amended following the submission of revised data by a financial institution.

Foreign liabilities of South Africa by selected countries, 31 December 1998 – Table S-94, S-95 and S-96

The classification by country of origin of non-resident portfolio investment in public-sector securities was adjusted to reflect the revised information submitted by a large financial institution.

Foreign liabilities of South Africa by kind of economic activity, 31 December 1998 – Table S-98 and S-99

The classification by kind of economic activity of non-resident portfolio investment in the economy was adjusted to reflect the revised information submitted by a large financial institution.

Consumer prices for metropolitan and other urban areas – Table S-137 and S-139

With the introduction of inflation targeting as a monetary policy framework, the targeted inflation rate was defined as changes in consumer prices, excluding mortgage bond rates, in 14 metropolitan and 39 other urban areas. The emphasis in the Reserve Bank's analysis of consumer price movements accordingly shifted away from the overall consumer price index for metropolitan areas only, to the index that also covers the 39 other urban areas.

The tables in the statistical section of the *Quarterly Bulletin* were amended to reflect this change in emphasis. Table S-137 was amended to show the consumer price index values for the wider geographical area instead of for the 14 metropolitan areas, as had previously been the case. Table S-139 now contains the percentage changes over one year in the components of the consumer price index for the wider geographical area.

Tables indicating the overall consumer price index in metropolitan areas and year-on-year changes in this index have been retained in the *Quarterly Bulletin*.