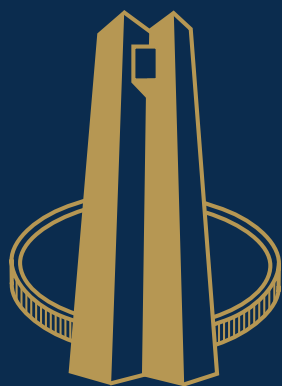


Quarterly Bulletin Kwartaalblad

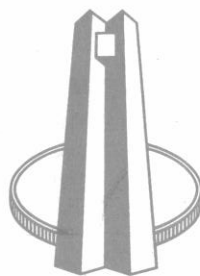


South African Reserve Bank
Suid-Afrikaanse Reserwebank

Quarterly Bulletin Kwartaalblad

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Quarterly economic review

Introduction

The sudden depreciation of the rand in 1996 and the various policy responses to that event had a powerful influence on economic developments in 1997. While the depreciation lasted, it created uncertainties among foreign and domestic investors and fostered expectations of rising inflation. The currency weakness emphasised the need to secure a better balance in the economy between aggregate demand and supply in order to restore investors' confidence and prepare the way for sustainable strong economic growth in the longer run.

By the end of 1997 the process of macroeconomic consolidation had largely been completed and the economy was in a much healthier state for the resumption of higher growth than at the beginning of 1996. This was evident from:

- better equilibrium between aggregate real gross domestic expenditure and real gross domestic product;
- the stabilisation of the annual deficit on the current account of the balance of payments relative to gross domestic product;
- the growing recognition of the need for fiscal discipline and the determination to reduce the size of the Budget deficit relative to gross domestic product;
- the increase of net inflows of capital into the country in amounts exceeding the large inflows of 1995;
- a substantial surplus on the overall balance of payments which allowed for a strong further accumulation of gold and other foreign reserves to a level which was significantly higher than at any time during 1996;
- a gradual reduction of the growth in bank credit extension to private-sector entities from inordinately high rates in 1996;
- a significant decline in inflation to quarter-to-quarter movements at the end of 1997 that became more in step with those of the country's major trading partners;
- signs by the third quarter of 1997 that the growth in aggregate unit labour cost was abating; and
- the behaviour of the rand against a basket of currencies – it was much more stable and devoid of the erratic movements that occurred during 1996.

The adjustment process of the past two years, on the other hand, also had negative short-term effects which were unavoidable if the long-run growth capacity

of the economy was to be strengthened. These included:

- the short-term slowdown in the rate of real income growth; and
- declines in domestic employment levels as producers became increasingly cost-conscious and raised efficiency in their businesses to become internationally more competitive.

These short-term adjustment problems were aggravated by the uncertainties created by the economic and financial problems that some East Asian economies encountered during the past year and by the sharp decline in the price of gold. Economic activity consequently slackened and the growth in the real gross domestic product declined from slightly more than 3 per cent in 1996 to only 1½ per cent in 1997. In the second half of 1997 output growth slowed down even more and annualised output growth in the last six months was below 1 per cent.

The slowdown in output growth in the second half of 1997 occurred over the broad spectrum of economic activities, but was more conspicuous in the manufacturing and commercial sectors. The manufacturing sector had to contend with stronger competition in an increasingly open economy. Coupled with domestic cost pressures, subdued increases in output prices and weak demand growth, this compressed operating margins to such an extent that the real value added in the manufacturing sector declined in the second and third quarters of 1997. The downward pressure on real household incomes and the weakening of consumer confidence contributed to declines in the real value added by the commercial sector. Though still positive, growth in the mining sector – which was affected by falling international commodity prices – and in the services sectors also slowed down towards the end of 1997.

The slowdown in private consumption expenditure, which had already become apparent in the second half of 1996, continued into 1997. Falling employment levels and heightened job insecurity have weakened consumer confidence. Although the growth in consumer spending was curtailed in 1997, households still preferred to maintain certain minimum spending levels by activating their accumulated savings. Together with a further rise in household indebtedness, this caused the household savings rate and the national savings rate to decline to a level that is inadequate for the financing of fixed investment at a pace compatible with rapid job creation.

Real government consumption expenditure grew at an exceptionally rapid rate in 1997, thereby increasing

the rate of dissaving of general government and reducing the already very low national savings rate even further. Real gross domestic fixed investment still increased in the second half of 1997, but at a much lower rate than in the preceding three years. Public-sector fixed investment was mostly responsible for this slowdown in real fixed investment activity, while private-sector companies modestly increased their rate of capital formation towards the end of 1997.

As already mentioned, the measures taken in response to the apparent weakness in the overall balance of payments during 1996 had the desired effect of restoring better balance between aggregate demand and supply. The deficit on the current account of the balance of payments in 1997 as a whole, however, changed little from that of 1996. In the course of 1997, an acceleration in total domestic demand in the fourth quarter, a decline in the gold price and international commodity prices and a decline in the ratio of import prices to the prices of domestically produced goods, however, resulted in a widening of the quarterly seasonally-adjusted current-account deficit. Although the deficit also widened relative to gross domestic product, it was still within the limits of sustainability during the fourth quarter of 1997. Aggregate output responded weakly to the strengthening of domestic demand towards the end of 1997. This caused the import-penetration ratio to rise steeply.

The current account deficit in 1997 was accompanied by a strong rise in net inflows of capital which helped to rebuild international reserves. Import cover improved to about two-and-a-half months' worth of imports of goods and services. The net inflows of international capital were mostly in the form of portfolio-type investments, which nevertheless need not be of a speculative nature. A sizeable part of the inflows was related to Eurorand bond issues with a fairly long maturity and asset swap arrangements between resident and non-resident investors, thereby assuming the character of longer-term investment. Foreign direct investors, however, still seemed somewhat hesitant to commit large amounts of long-term capital, probably due to uncertainty over prospective exchange rate movements, a mismatch between productivity and remuneration levels and concerns over violent crime.

The accumulation of international reserves during 1997 helped to steady the rand after the sharp loss in value of the previous year. The rand also recovered rather quickly after the effects of the problems in Asia had spilt over into the South African securities markets in October 1997, leaving the impression that the contagion from the currency crisis in Asia had been short-lived. This stabilisation of the rand was attained without official attempts to defend the rand at any particular level.

Consumer-price inflation is now firmly on a downward trend, having risen sharply in 1996 as a

result of the depreciation of the rand. Production-price inflation declined equally impressively and the most recent quarter-to-quarter inflation rates were not completely out of step with trend inflation in South Africa's major trading-partner countries. Prospects for lower inflation also appeared to have improved, given the new-found stability of the exchange rate of the rand and the easing in the growth of private-sector credit. Furthermore, the opening up of the economy increasingly discouraged producers from raising prices in order to remain competitive with foreign suppliers.

Employee remuneration remained at a relatively high level. Any increase in the current growth of nominal remuneration per worker would be difficult to reconcile with the monetary-policy objective of enhanced price stability. Employment in the non-agricultural sector continued to fall in the first three quarters of 1997. This still reflected the restructuring and rationalisation of work practices by producers facing domestic cost pressures, aggressive foreign competition and weak international commodity prices. In addition, the elimination of export subsidies also forced domestic exporters to adjust and reduce the size of their workforce.

The Reserve Bank's guidelines for M3 growth were kept unchanged at 6 to 10 per cent for 1997. The upper limit of this guideline range continued to be substantially overshot. This coincided until recently with the persistently strong growth in credit extended to the private sector by monetary institutions. By the third quarter of 1997 it had become abundantly clear that private-sector credit growth had slowed down. A "revised" or "purified" definition of private-sector credit, which excludes, among others, credit extended by banks to local governments, indicated that the slowdown in private-sector credit growth was even more impressive than that indicated by the conventional definition. This slowdown in private-sector credit growth generally reflected subdued economic activity, falling inflation and weaker household expenditure.

The decline in private-sector credit growth, the improvement in the overall balance of payments, rising gold and other foreign exchange reserves and the easing of inflationary pressures paved the way for a one percentage point reduction in Bank rate in October 1997. Bank lending rates responded with little delay to the lowering of Bank rate, but the response of money market interest rates was rather muted. This was mainly owing to two reasons: firstly, the lowering of Bank rate had already been discounted in the prevailing market-determined rates and, secondly, the decline in the net foreign assets of the Reserve Bank following the financial problems in Asia, widened the liquidity shortage in the domestic money market and put upward pressure on short-term interest rates. Money market rates nevertheless began to subside in January 1998 as the impact of the Asian problems

faded and trading conditions in the money and foreign-exchange markets steadied.

The main features of financial market developments in 1997 were the bullish sentiment which prevailed in the bond market, strongly rising turnovers in the securities markets, the heightened volatility in the share market and the increased non-resident participation in the South African markets. Bond yields fell nearly 250 basis points from the end of 1996 to the beginning of 1998, reflecting growing anticipation of an easing of monetary policy, steadily declining inflation and heavy non-resident buying. Share prices, which had risen firmly since the beginning of 1997 on the back of solid earnings growth and in anticipation of a decline in official interest rates, became highly volatile in late October 1997 when they fell back sharply as a result of the spill-over effects of the loss of international investor confidence in emerging markets. Non-residents were much more active in the South African securities markets than before. High yields, the easing of inflationary pressures, which strengthened prospects for a downward movement of the yield curve, and the perception that exchange risks had diminished lured non-resident investors back into the domestic securities markets.

Activity in the domestic primary bond market was overwhelmingly dominated by issues of entities in the public sector. As a result of the high level of liquidity in the corporate sector and the high cost of borrowed funds, private-sector companies preferred to raise capital through the issuance of shares. Private-sector companies also abstained from raising substantial amounts in international capital markets, but a number of public-sector bodies opted to issue bonds in the Eurorand market.

The overall public-sector borrowing requirement relative to gross domestic product in the first three quarters of fiscal 1997/98 increased in comparison with its counterpart of the previous fiscal year. In contrast, the deficit before borrowing and debt repayment on the Exchequer account as a ratio of gross domestic product, was reduced from the first three quarters of fiscal 1996/97 to the first three quarters of 1997/98. The portion of the budgeted deficit absorbed in the first ten months of the current fiscal year was nevertheless significantly higher than during any of the previous five fiscal years. This was mainly the result of some provincial governments exceeding their budget allocations which also caused substantial increases in their indebtedness to the banking sector.

The first "Medium Term Budget Policy Statement" was released on 2 December 1997 and set out broad-based expenditure and revenue plans for the next three fiscal years. A key element of this Statement is the "Medium Term Expenditure Framework" which initiated a process of three-year rolling budgets. Government departments will in future be expected to frame their

policy proposals within their three-year budgetary allocations. The Statement retained the budget deficit reduction targets indicated by the *Macroeconomic Strategy for Growth, Employment and Redistribution*. The Statement also pledged to restrain the growth in nominal government expenditure. If future economic growth does not meet current expectations, then spending growth will be contained below the projected expenditure levels.

Domestic economic developments

Domestic output

Economic activity slackened in 1997, reflecting weaker growth in aggregate domestic demand. *Real gross domestic product*, which had risen by more than 3 per cent in 1996, increased by only 1½ per cent in 1997. This slowdown in activity was especially noticeable in the second half of 1997 when quarter-to-quarter annualised rates of growth of only ½ per cent were recorded. Declines in manufacturing production and in the real output of the commercial sector during the second half of 1997, were primarily responsible for this slowdown of economic growth.

Real value added by the agricultural sector declined by 1 per cent in 1997 with the return to a more normal season following the bumper harvests in 1996. Agricultural output also declined marginally in the fourth quarter of 1997 owing to a decline in wheat production which offset the increases in real income of livestock and horticultural producers.

Outside the agricultural sector, real output growth slowed down from an average quarter-to-quarter annualised rate of about 2½ per cent in the first half of 1997 to approximately ½ per cent in the second half of the year. *Mining output* increased at an annualised rate of only 1½ per cent in the fourth quarter of 1997, down from a high rate of 5 per cent in the third quarter, mainly owing to the continued fall in the price of gold and international commodity prices which dampened the prospects for this sector.

Real value added by the *manufacturing sector* declined at rates of 1 per cent in the third quarter of

Real gross domestic product

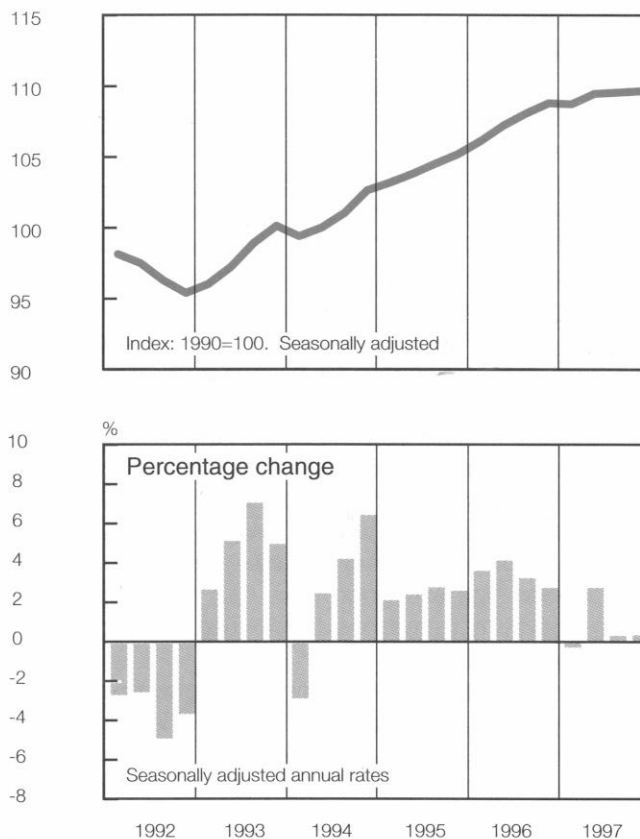
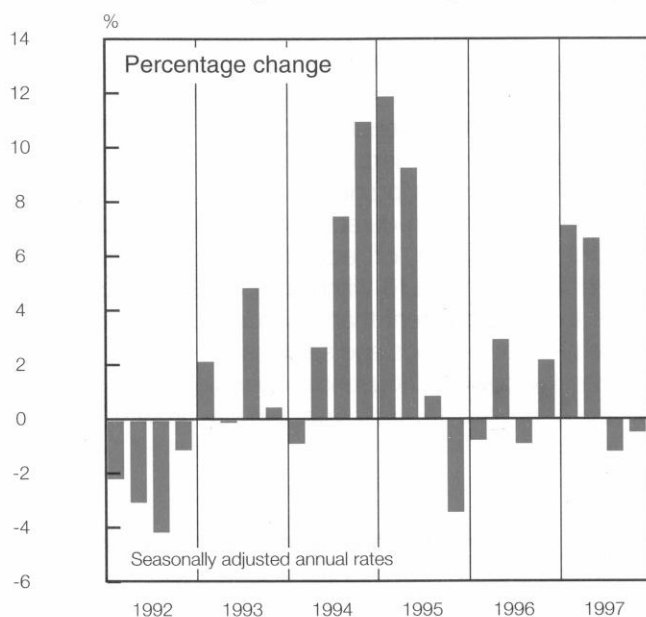


Table 1. Real gross domestic product

Percentage change at seasonally adjusted and annualised rates

Sectors	1996					1997				
	1st qr	2nd qr	3rd qr	4th qr	Year	1st qr	2nd qr	3rd qr	4th qr	Year
Primary sectors	26	16½	15½	2½	9	-13½	2	3	1	½
Agriculture	99	65	59½	4	29	-31	-5	-½	0	-1
Mining	-½	-5	-7½	1	-1½	1½	7	5	1½	1
Secondary sectors	½	3	½	2½	1	6	6	-½	0	3
Manufacturing	-1	3	-1	2	½	7	6½	-1	-½	3½
Tertiary sectors	1	3	2	3	3	-½	1	0	½	1
Commerce	-2½	5½	0	3	3½	-2	2	-1½	-½	½
Transport, storage and communication	1	2	3	2½	3	½	4½	3	2½	2½
Financial and other services ...	3½	3	4	4	3½	2	2	1	1½	2½
Total	3½	4	3	3	3	-½	2½	½	½	1½
Non-agricultural sectors	½	2	½	2½	2	2	3½	½	½	2

Real value added by manufacturing



1997 and ½ per cent in the fourth quarter. These declines were related to a tapering off in the growth of foreign demand for South African manufactured goods, stiff competition faced by import-competing industries, the general slack in domestic final demand and the forward linkage effects of lower agricultural production. A spurt in manufactured output growth to annualised rates of 7 per cent in the first quarter of 1997 and 6½ per cent in the second quarter nevertheless ensured that the real value added by the manufacturing sector in 1997 as a whole was about 3½ per cent higher than in 1996.

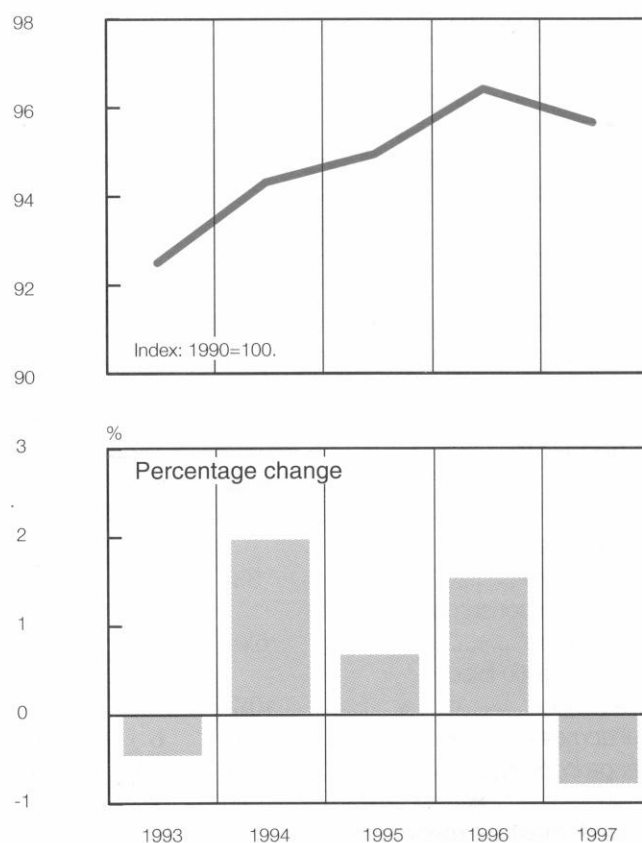
Growth in output by the sector supplying *electricity, gas and water* slowed down from 4 per cent and 6 per cent in the first two quarters of 1997 to ½ per cent in the third quarter and 1 per cent in the fourth quarter. At the same time, real value added by the *construction* sector slowed down too as the demand in the housing market weakened and business investment in new buildings tapered off. Together, these slowdowns contributed to falling output at an annualised rate of about ½ per cent in the combined *secondary sectors* of the economy in the last two quarters of 1997.

The slump in new motor vehicle sales in the fourth quarter caused real output in the motor trade to decline sharply in the fourth quarter of 1997. This was partly offset by small increases in the real value added by the retail and wholesale trade and catering and accommodation sectors, resulting in a decline in the output volumes of the *commercial* sector at an annualised rate of ½ per cent in the fourth quarter of 1997, compared with 1½ per cent in the third quarter.

Though slightly down from rates of 4½ per cent and 3 per cent in the preceding two quarters, real value added by the sector *transport, storage and communication* was boosted by the expansion of the domestic telecommunications network and the rising volumes of international trade entering the country and still increased sturdily at a rate of 2½ per cent in the fourth quarter of 1997. In the *financial services* sector output growth accelerated slightly from an annualised rate of 1 per cent in the third quarter of 1997 to 1½ per cent in the fourth quarter – turnovers in the foreign exchange and securities markets picked up strongly during the fourth quarter when the turmoil in the financial markets of a number of Asian economies impacted on the local markets.

The growth in real domestic production in 1997 was diluted somewhat by increased net factor payments to the rest of the world and a deterioration in the terms of trade. Net factor payments to non-residents increased on account of higher interest and dividend payments following the sharp rise in portfolio capital flows into South Africa, whereas the terms of trade deteriorated mainly because of the falling price of

Real gross national product per capita



gold and weak international commodity prices. The real *gross national product* accordingly increased by nearly 1½ per cent in 1997, i.e. slightly less than the growth in real gross domestic product and significantly down from the rate of 3½ per cent that had been registered in 1996. Real gross national product per capita consequently declined by about 1 per cent in 1997, compared with an average annual growth of about 1½ per cent over the preceding three calendar years.

Domestic expenditure

Growth from quarter to quarter in aggregate real gross domestic expenditure during 1997 vacillated between a decline at an annualised rate of 2 per cent in the first quarter of the year and increases at annualised rates of 5½ per cent in the second quarter and 4½ per cent in the fourth quarter of the year. However, when calendar-year totals are compared, the growth in real gross domestic expenditure declined from 2½ per cent in 1996 to 1½ per cent in 1997. In the fourth quarter of 1997 expenditure growth accelerated strongly because of a sharp increase in real consumption expenditure by general government and a smaller decline in real inventory investment than in the third quarter.

The growth in *real private consumption expenditure* slowed down from an annualised rate of 1½ per cent in the second quarter of 1997 to 1 per cent in the third quarter and ½ per cent in the fourth quarter. This reflected progressively declining growth from quarter to quarter in consumer spending on non-durable goods and larger actual declines in spending on durable goods. In 1997 as a whole, real private consumption increased at a rate of 2 per cent, compared with growth of 4 per cent in 1996.

Real outlays by households on *durable goods* declined at an annualised rate of 16½ per cent in the fourth quarter of 1997, thereby reducing this kind of household spending to a level that was 6 per cent lower than the previous year. Declines were particularly severe in two spending categories, namely transport equipment and furniture and household appliances. Spending on durable goods is generally easier to postpone and therefore has a more pronounced pro-cyclical pattern than spending on non-durable goods and services. In the current phase of economic consolidation, households also tend to withhold spending on durable goods to a larger extent than spending on non-durable and semi-durable goods and services.

The slowdown in household spending during 1997 can be attributed to, *inter alia*, slower growth in real

Table 3. Real private consumption expenditure

Percentage change at seasonally adjusted and annualised rates

Components	1997				
	1st qr	2nd qr	3rd qr	4th qr	Year
Durable goods.....	-3	-2	-2½	-16½	½
Semi-durable goods.....	4	1	-½	2½	3
Non-durable goods.....	3	2½	1½	1	2½
Services	-2	2½	3	5	1
Total	1	1½	1	½	2

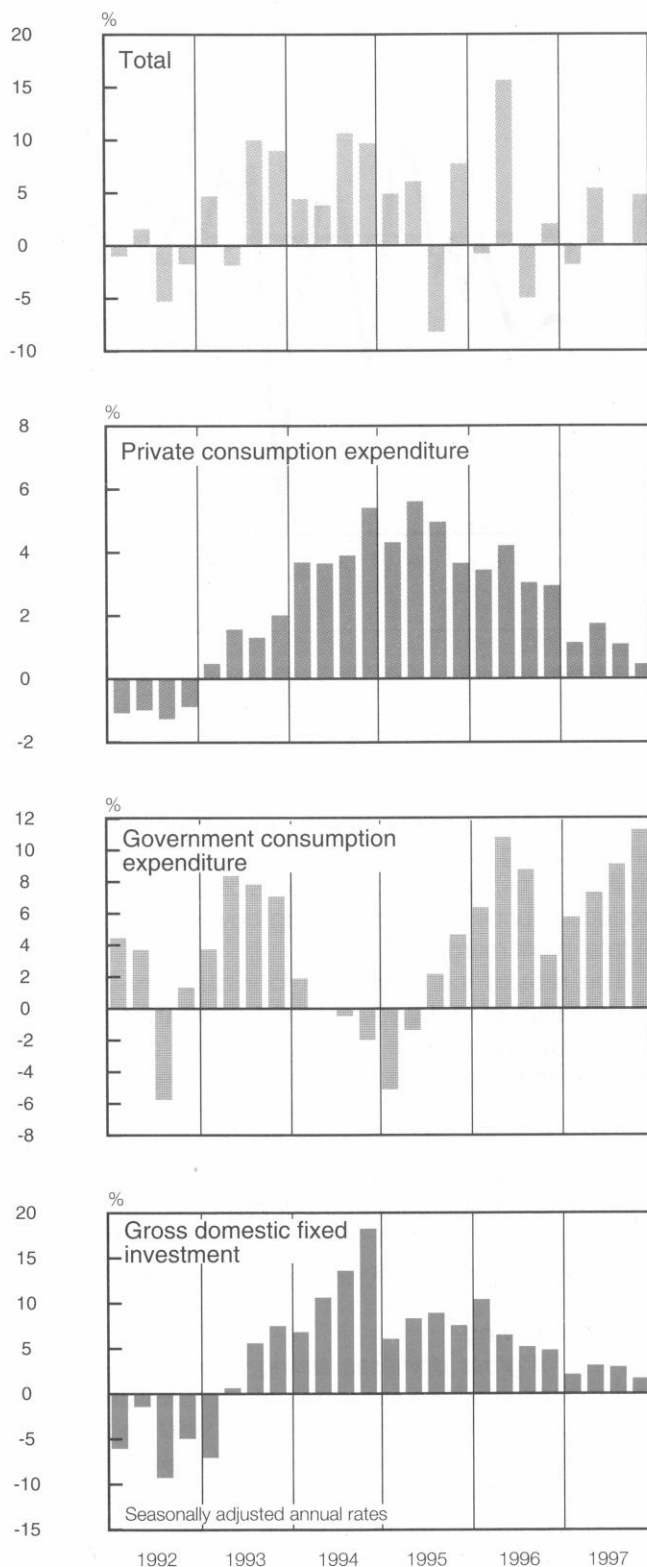
Table 2. Real gross domestic expenditure

Percentage change at seasonally adjusted and annualised rates

Components	1996					1997				
	1st qr	2nd qr	3rd qr	4th qr	Year	1st qr	2nd qr	3rd qr	4th qr	Year
Private consumption expenditure.....	3½	4	3	3	4	1	1½	1	½	2
Government consumption expenditure.....	6½	11	9	3½	6	6	7½	9	11½	7
Gross domestic fixed investment.....	10½	6½	5	5	8	2	3	3	1½	3½
Final domestic demand	5½	6	4½	3½	5	2½	3	3	3	3½
Change in inventories (R billions)*	1,2	6,7	2,4	0,4	2,7	-2,7	-2,3	-4,4	-3,0	-3,1
Gross domestic expenditure	-1	15½	-5	2	2½	-2	5½	0	4½	1½

* Constant 1990 prices, annualised

Change in real gross domestic final demand



personal disposable income. This was, in the main, a result of declining employment levels, a slowdown in the gross income of farmers, higher tax collections from households and an acceleration in the deflator for private consumption expenditure to a level that was roughly equal to the rate of remuneration settlements. Furthermore, consumer confidence might have wavered towards the end of 1997 as household debt ratios increased and property and equity values tended to stagnate or decline. This has ostensibly reduced the net worth of households and lowered the resources perceived by households to be at their disposal.

Aggregate *real consumption expenditure by general government* accelerated from an annualised quarter-to-quarter growth rate of 9 per cent in the third quarter of 1997 to 11½ per cent in the fourth quarter, taking the year-to-year growth in 1997 to 7 per cent as against 6 per cent in 1996. The strong increase in real consumption expenditure by general government was the net result of a rapid increase in real outlays on intermediate goods and services other than employee services, and a small decline in the real remuneration of employees. All three tiers of government contributed to these high growth rates, but expenditure by provincial governments increased considerably more than that of the central government and local authorities. The ratio of general government consumption expenditure to gross domestic product accordingly increased from 20½ per cent in 1996 to 21½ per cent in 1997.

The year-to-year growth in *real gross domestic fixed investment* declined from 8 per cent in 1996 to 3½ per cent in 1997. This slowdown was evident in the capital outlays of all three institutional sectors: in the private sector it fell from 6 per cent in 1996 to 3 per cent in 1997, for public corporations from 10½ per cent to 5½ per cent and for public authorities from 15 per cent to 4 per cent.

The quarter-to-quarter growth in real gross domestic fixed investment decelerated from 3 per

Table 4. Real gross domestic fixed investment

Percentage change at seasonally adjusted and annualised rates

Institutional sectors	1997				
	1st qr	2nd qr	3rd qr	4th qr	Year
Private sector.....	1	2½	2½	3	3
Public sector	6	5	4½	-1½	4½
Public authorities	3	1½	2	-2	4
Public corporations.....	8½	8	6½	-1	5½
Total	2	3	3	1½	3½

cent in the second and third quarter of 1997 to 1½ per cent in the fourth quarter. The low rate of increase in the fourth quarter of 1997 was essentially caused by a decline in *fixed capital formation by the public sector* (public authorities and public corporations combined) at a seasonally adjusted and annualised rate of 1½ per cent. Higher real capital outlays by Telkom, Eskom and general government were more than fully offset by declines in the fixed investment spending by Transnet and business enterprises of general government. In contrast to public-sector fixed investment, the growth in *real gross fixed investment by the private sector* accelerated slightly from rates varying between 1 and 2½ per cent in the first three quarters of 1997 to 3 per cent in the fourth quarter. Firm increases were evident in agriculture, mining and manufacturing.

After *investment in inventories* at constant 1990 prices had fallen from R6,3 billion in 1995 to R2,7 billion in 1996, it turned negative to an amount of R3,1 billion in 1997. The reduction of inventory levels in 1997 reduced gross domestic product growth by 2 percentage points. The negative investment in inventories was nevertheless reduced from the third quarter of 1997 to the fourth quarter, thereby adding some 2 percentage points to the annualised growth in gross domestic product in the fourth quarter.

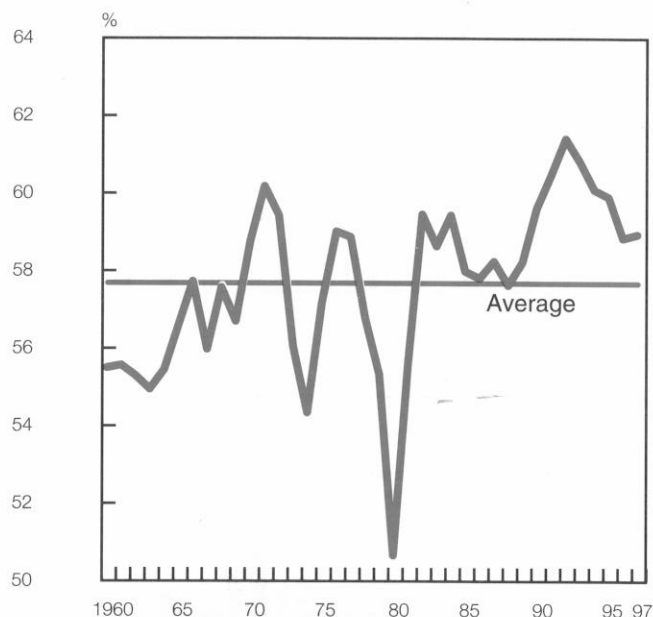
The continued negative net change in the real value of inventories in the fourth quarter of 1997 was largely confined to the mining sector and the wholesale and retail sectors. The slowdown in final domestic demand and the prevailing high cost of carrying inventories urged manufacturers as well as wholesale and retail enterprises to economise on their inventory holdings. As a consequence, the ratio of industrial and commercial inventories to the non-agricultural gross domestic product declined from 18½ per cent at the end of 1996 to 17½ per cent at the end of 1997.

Factor income

The year-on-year growth in *aggregate nominal factor income* at market prices slowed down from 10½ per cent in the first quarter of 1997 to 9½ per cent in the fourth quarter. Likewise, the growth in factor income for the calendar year slowed down from 12 per cent in 1996 to 9½ per cent in 1997. These slowdowns originated in lower growth of both the operating surpluses of business enterprises and the remuneration of employees.

The growth over four quarters in aggregate nominal gross operating surpluses of business enterprises contracted from 10½ per cent in the first quarter of 1997 to 8½ per cent in the fourth quarter. This slowdown in the growth of operating surpluses was noticeable over a broad spectrum of sectors, ranging from agriculture to mining and commerce. In the agricultural sector the gross income of farmers was adversely affected by declines in the maize and wheat

Labour remuneration as percentage of gross domestic product



crops. The mining sector was affected by declining international commodity prices, which also impacted on the operating profits of the major resource-based manufacturing industries. In the manufacturing sector input costs generally also rose considerably faster than production prices, thereby putting downward pressure on total profit margins.

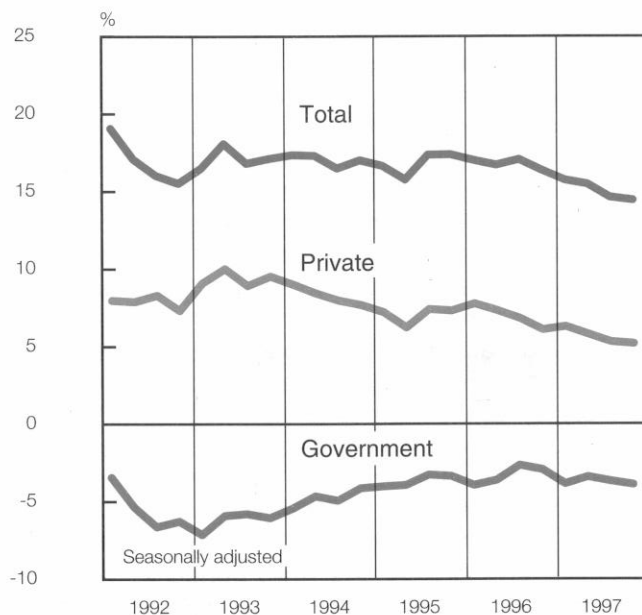
The rate of increase over four quarters in total remuneration of employees slowed down from 10 per cent in the first quarter of 1997 to 9 per cent in the fourth quarter, rather because of declining employment levels than the moderation of nominal employee remuneration growth. Despite the slower growth in aggregate employee remuneration, the share of labour in the value of aggregate output remained at 59 per cent in 1997 – the same share as in 1996. The long-run average of this ratio is calculated at 57½ per cent.

Domestic saving

The *ratio of gross domestic saving to gross domestic product* fluctuated around a level of approximately 15½ per cent in the first two quarters of 1997, but then declined sharply to 14½ per cent in the ensuing two quarters. This brought the domestic savings rate down from 17 per cent of gross domestic product in 1996 to 15 per cent in 1997.

Net dissaving by general government as a percentage of gross domestic product increased from an average of 3½ per cent in the first three quarters of 1997 to nearly 4 per cent in the fourth quarter,

Gross domestic saving as percentage of gross domestic product



reflecting the growing imbalance between the current income and expenditure of general government. A weakening in net saving by the corporate sector and a more pronounced decline in net saving by households lowered the private-sector net savings rate to 5½ per cent of gross domestic product in 1997 compared with 7 per cent in 1996. In fact, the private-household savings rate was barely positive in the fourth quarter of 1997.

Private-household indebtedness crept higher from 66 per cent of disposable income in 1996 to 68 per cent in 1997, thereby adding to the decline in the ratio of household saving to personal disposable income from 2 per cent to 1 per cent over the same period. As consumers tend to smooth consumption over time, volatile changes in the savings ratio often relate to transitory movements in income. The recent fall in the household savings rate might therefore reflect an unanticipated slowdown in the growth of personal disposable income, rather than a lasting increase in the propensity to consume.

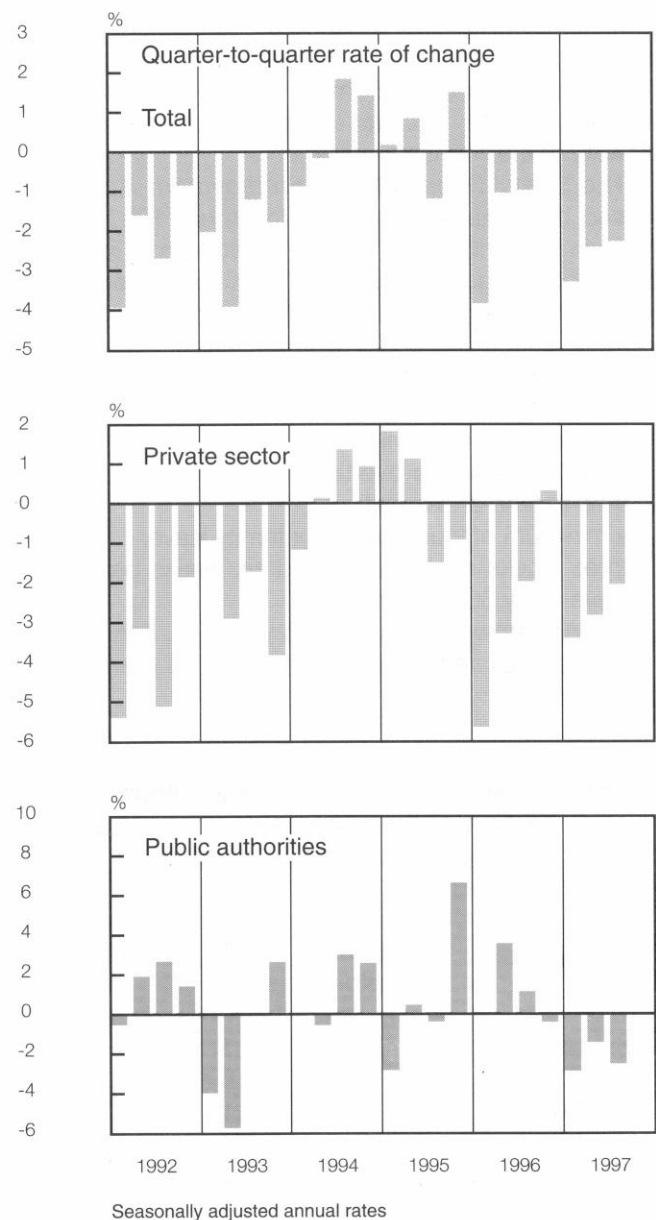
Employment

Total employment in the non-agricultural formal sector of the economy continued to fall in the first three quarters of 1997, due to further retrenchments in the private sector and attempts at "right-sizing" the public sector. Regularly surveyed employment in the non-agricultural sectors of the economy declined at seasonally adjusted and annualised rates of 3,3 per

cent in the first quarter of 1997, 2,4 per cent in the second quarter and 2,2 per cent in the third quarter. From the end of 1996 to the end of the third quarter of 1997 employment in the formal sectors outside agriculture had been reduced by 104 000 jobs.

The private and public sector experienced job losses in each of the first three quarters of 1997. Employment losses in the private sector during the third quarter occurred almost over the full spectrum of activity, but were most evident in manufacturing, construction, electricity generation, motor trade, the insurance industry and gold mining. The declines in

Non-agricultural employment



public-sector employment during the third quarter of 1997 occurred at both national and provincial government levels and among the ranks of agricultural marketing boards that were in the process of being wound down. The decline in recorded employment in the formal non-agricultural sectors of the economy was also reflected in an increase of 3,1 per cent in the total number of registered unemployed workers, comparing the first eight months of 1997 with those of 1996.

The lack of sufficient job creation in South Africa partly reflects the results of opening up an internationally less-than-fully competitive economy to full-blown international competition. The elimination of export incentive schemes and the reduction of import tariffs have left companies with high production cost structures vulnerable to an increasingly competitive environment, resulting in the rationalisation of work practices and a reduction of the workforce in lieu of other cost-containing measures. These and other relevant issues are likely to be discussed during 1998 at a Presidential Jobs Summit with the objective of finding ways to increase the labour absorption capacity of the economy.

The *Basic Conditions of Employment Act* was passed by Parliament early in November 1997. The intention with this act is to protect workers in sectors where no bargaining mechanisms exist, to avoid excessive working hours, to prohibit child labour and to address issues of gender discrimination. The main provisions of the act include the following:

- a 45-hour working week with the objective of progressively reducing it to 40 hours;
- an increase in the overtime rate from time-and-a-third to time-and-a-half;
- a minimum of four months maternity leave;
- three weeks annual leave and six weeks paid sick leave every 36 months; and
- a minimum working age of 15 years, or, if the work is inappropriate to a child of that age, 18 years.

Table 5. Employment in the non-agricultural sectors of the economy

Percentage change over one quarter at seasonally adjusted annualised rates

	Private sector	Public sector	Total
1996: 1st qr.....	-5,7	-0,1	-3,8
2nd qr	-3,3	3,6	-1,0
3rd qr	-2,0	1,1	-0,9
4th qr	0,3	-0,4	0,0
1997: 1st qr.....	-3,5	-2,9	-3,3
2nd qr	-2,9	-1,4	-2,4
3rd qr	-2,1	-2,5	-2,2

The act allows for a certain degree of flexibility in that the conditions can be varied through collective bargaining, provided that "core rights" are not infringed.

Labour costs and productivity

Although there appears to be a growing awareness that remuneration increases need to be linked to productivity growth, there is little evidence of a decisive slowdown in the growth in nominal labour remuneration. Despite the falling levels of *employment in the formal non-agricultural sectors of the economy*, nominal remuneration per worker in these sectors increased at a rate of 10,0 per cent in 1996 and at year-on-year rates varying between 9,3 per cent and 10,9 per cent in the first three quarters of 1997. Consistently strong nominal remuneration growth was experienced in both the private and the public sectors of the economy (see Table 6). Wage settlements in the first three quarters of 1997 were slightly higher than the contemporaneous consumer-price inflation, indicating an increase over that period in the real spending power of those who were gainfully employed.

The year-on-year increase in nominal remuneration per worker continued to exceed the growth in output prices as reflected by the price deflator for the non-agricultural gross domestic product. The ratio of remuneration per worker to output prices, i.e. the "*inflation-adjusted remuneration per worker*", rose by 0,8 per cent in 1995 and 0,2 per cent in 1996, but then accelerated to year-on-year rates of increase of 0,9 per cent in the first quarter of 1997, 2,8 per cent in the second quarter and 1,3 per cent in the third quarter.

The excess of growth in nominal worker remuneration over growth in output prices was prevented from developing into a squeeze on the operating surpluses of employers by robust

Table 6. Nominal remuneration per worker

Percentage change over one year

	Private sector	Public sector	All employees
1996: 1st qr.....	12,7	8,5	11,3
2nd qr	10,2	9,7	10,2
3rd qr	11,0	8,3	10,2
4th qr	8,7	7,4	8,4
Year.....	10,6	8,5	10,0
1997: 1st qr.....	7,9	11,7	9,4
2nd qr	10,3	11,8	10,9
3rd qr	9,4	9,1	9,3

Table 7. Labour cost and productivity

Percentage change over one year

	Inflation-adjusted remuneration per worker	Labour productivity	Nominal unit labour costs
1996: 1st qr.....	2,1	3,3	7,7
2nd qr	0,5	3,1	6,8
3rd qr	0,2	2,4	7,6
4th qr	-1,8	3,0	5,2
Year.....	0,2	3,0	6,8
1997: 1st qr.....	0,9	3,1	6,1
2nd qr	2,8	3,7	7,0
3rd qr	1,3	3,9	5,1

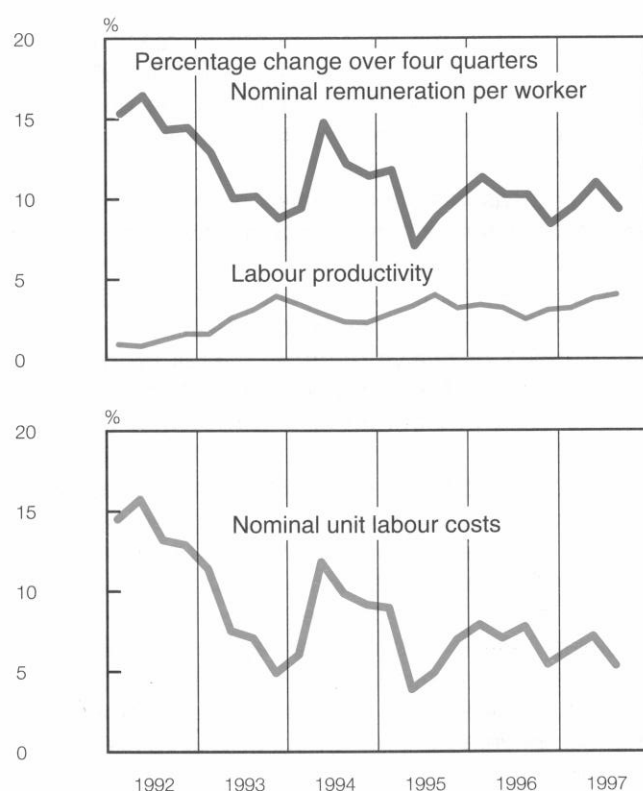
productivity growth. Rationalisation of work practices, which invariably led to declines in employment numbers and a reduction of 64 per cent in the number of man-days lost due to strikes and work stoppages in 1997, helped boost productivity (measured as output

per worker in the non-agricultural sectors of the economy) by 3,0 per cent in 1996 and by an average rate of 3,6 per cent in the first three quarters of 1997 compared with the corresponding period of the previous year.

As a consequence of productivity increases not fully keeping pace with the rises in the average remuneration per worker, *nominal unit labour costs* kept on growing, thereby putting upward pressure on the output prices of domestically produced goods and services. It would appear, however, as if these pressures moderated somewhat during 1997 – the increase over one year in nominal unit labour costs declined from 6,8 per cent in 1996 to 6,1 per cent in the first three quarters of 1997.

Any increase in the current growth rate of nominal remuneration per worker would be difficult to reconcile with the overriding monetary-policy objective of further reductions in the rate of production and consumer price inflation. Although higher remuneration growth might be absorbed by falling profit margins and weaker operating surpluses, such a process cannot continue indefinitely. The major part of the cost absorption process over the past number of years was the paring of the workforce in order to achieve higher productivity levels. Unemployment accordingly increased as employment fell and the population of working age continued to grow.

Non-agricultural labour productivity, remuneration and unit labour costs



Inflation

Inflation in consumer prices as measured by the year-to-year rate of increase in the overall *consumer price index* rose from 7,4 per cent in 1996 to 8,6 per cent in 1997. This apparently higher rate of inflation in 1997 is somewhat misleading as it was more the result of a statistical carry-over of rising inflation in the second half of 1996, following the weakening of the exchange rate of the rand in that year, than of a resurgence of strong inflationary pressures.

Measured over periods of twelve months, the overall consumer-price inflation rate declined from 9,9 per cent in April 1997 to 6,1 per cent in December. The firm downward trend in consumer price increases in 1997 was assisted by once-off events such as a much slower rate of increase in food prices and the reduction in mortgage rates and instalments following the lowering of Bank rate in October.

After the elimination of the effects of these once-off events from the consumer price index, the decline in *underlying inflation* (i.e. the change in the overall consumer price index excluding the prices of food and non-alcoholic beverages, the costs of home-ownership and value-added tax) was somewhat less impressive than the decline in overall consumer price inflation. Underlying inflation fell from 9,7 per cent in February 1997 to 7,3 per cent in December, i.e. a decline of more than one percentage point less than the decline

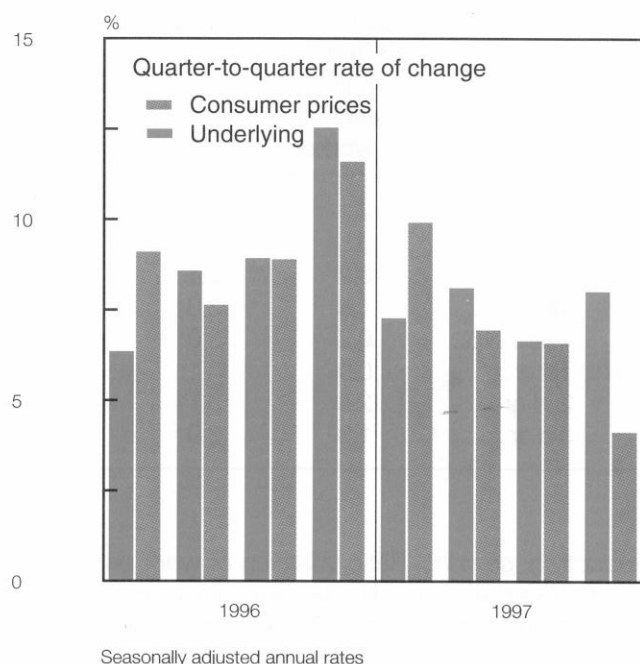
Table 8. Consumer price inflation

Quarter-to-quarter changes at annualised rates

	Underlying inflation	Overall index
1996: 1st qr	6,4	9,1
2nd qr	8,6	7,6
3rd qr	9,0	8,9
4th qr	12,6	11,6
1997: 1st qr	7,3	9,9
2nd qr	8,1	7,0
3rd qr	6,7	6,6
4th qr	8,1	4,1

in the overall consumer price inflation rate. Indeed, underlying inflation measured from quarter to quarter at an annualised rate accelerated from 6,7 per cent in the third quarter of 1997 to 8,1 per cent in the fourth quarter.

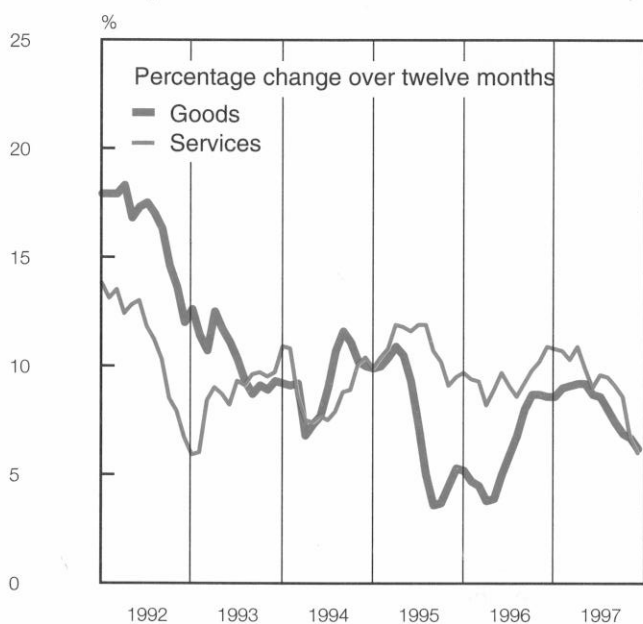
The change in the prices of *consumer services*, which usually appear to respond much more slowly to changes in productivity and monetary conditions than the prices of consumer goods, declined considerably more than the change in the prices of consumer goods owing partly to the lowering of mortgage bond rates. The twelve-month increase in the prices of

Inflation

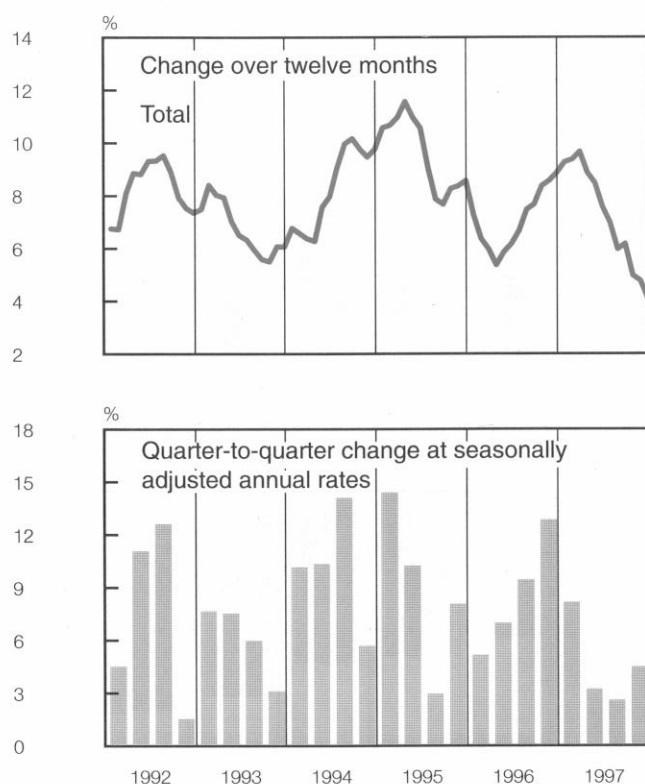
consumer services fell by 4,9 percentage points from April 1997 to December compared with a decline of 3,0 percentage points in inflation in consumer goods prices. In fact, the twelve-month increase in the prices of consumer services in December 1997 fell below the corresponding increase in the prices of consumer goods for the first time since November 1994.

Other measures of price inflation corroborated the view that inflation is firmly trending downwards. The year-to-year change in the *all-goods production price index* declined from 9,6 per cent in 1995 to 6,9 per cent in 1996 and 7,1 per cent in 1997. Measured over periods of twelve months, overall production price inflation fell from 9,6 per cent in March 1997 to 4,0 per cent in December – the lowest rate of increase since September 1971. The prices of domestically produced goods rose, in turn, by only 4,9 per cent in December 1997, compared with 9,7 per cent as recently as April 1997. The substantial gains made in reducing domestic production price inflation during 1997 can be attributed to modest increases, and in certain instances even declines, in the prices of processed food, agricultural, forestry and fishing products, electricity, gas and water, alcoholic beverages and tobacco, and textiles and clothing.

The relative strength and stability of the rand during 1997 made a significant contribution to inflation

Consumer prices

Production prices



December as the price-raising effect of the rand-depreciation in 1996 abated. This downward movement in imported price inflation was assisted by a decline in the international price of crude oil, which resulted in the rand price of imported oil falling from R110 per barrel in December 1996 to R86 per barrel in December 1997.

reduction in the second half of last year. The twelve-month *change in the prices of imported goods* fell from 10,3 per cent in February 1997 to 0,7 per cent in

Table 9. Production price indices

Percentage change over twelve months

	Domestically produced goods	Imported goods	All goods
1997: Jan	9,2	9,6	9,2
Feb	9,2	10,3	9,3
Mar	9,5	10,1	9,6
Apr	9,7	5,4	8,8
May	8,9	6,4	8,4
Jun	8,5	4,1	7,5
Jul	7,5	3,9	6,9
Aug	6,5	2,8	5,9
Sep	6,5	3,8	6,1
Oct	5,7	1,3	4,9
Nov	5,3	2,0	4,7
Dec	4,9	0,7	4,0

Foreign trade and payments

Current account

The *deficit on the current account* of the balance of payments in 1997 as a whole differed only slightly from that of the previous year. The deficit increased from R7,3 billion in 1996 to R8,8 billion in 1997 and as a percentage of gross domestic product rose marginally from 1,3 per cent in 1996 to 1,5 per cent in 1997. This consolidation of the relative size of the current-account deficit was for the most part a consequence of the better equilibrium between aggregate demand and supply in the domestic economy.

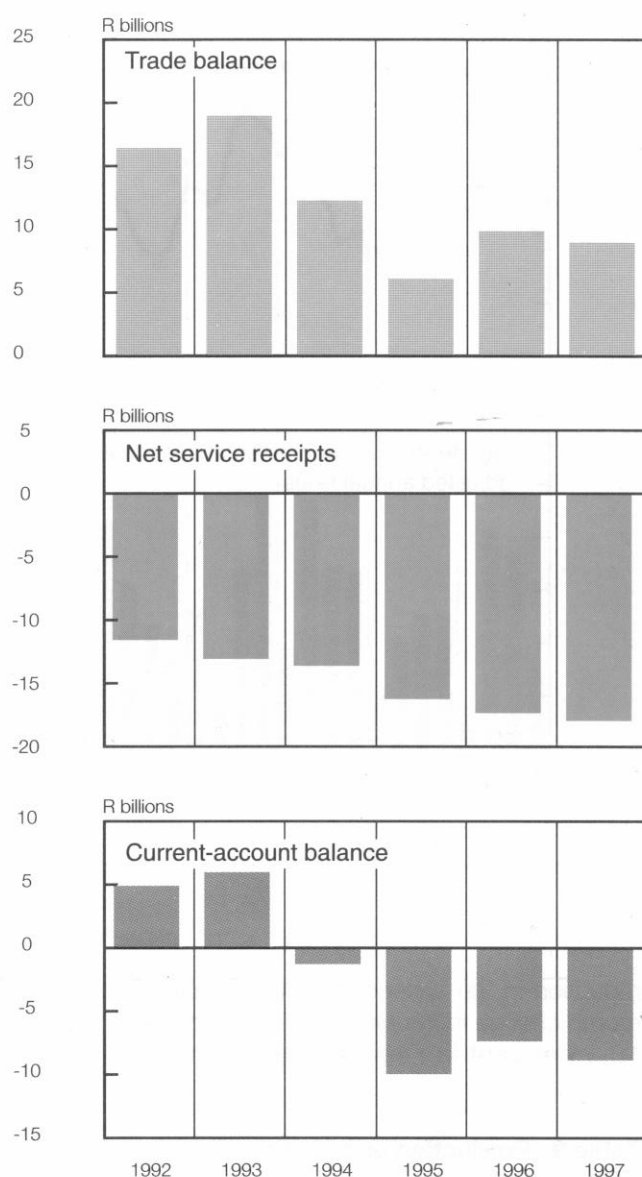
Within 1997 the *quarterly deficit* on the current account of the balance of payments (seasonally adjusted and annualised) deteriorated noticeably from the first to the second half of the year. On a quarter-to-quarter basis the current account deficit widened from R5,3 billion in the second quarter of 1997 to R9,0 billion in the third quarter and R14,1 billion in the fourth quarter. As a ratio to gross domestic product, the current-account deficit in the fourth quarter of 1997 was presumably still within the limits of sustainability, being equal to 2,3 per cent of gross domestic product.

The widening of the deficit on the current account in the fourth quarter of 1997 was largely caused by a sharp increase in the value of merchandise imports. This increase was only partially offset by a small increase in the total value of merchandise and net gold exports. Net payments for services and transfers to the rest of the world also increased in the fourth

Table 10. Balance of payments on current account
Seasonally adjusted and annualised
R billions

	1996		1997			
	Year	1st qr	2nd qr	3rd qr	4th qr	Year
Merchandise exports.....	101,4	107,7	115,9	115,3	117,6	114,1
Net gold exports.....	26,3	26,8	24,7	26,0	25,7	25,8
Merchandise imports	-117,7	-123,6	-128,6	-132,1	-139,0	-130,8
Net service and transfer payments	-17,3	-17,7	-17,3	-18,2	-18,4	-17,9
Balance on current account...	-7,3	-6,8	-5,3	-9,0	-14,1	-8,8

Current account



quarter of 1997, thereby aggravating the deterioration of the current account.

The sharp upward movement in the value of imports was closely related to the relatively high marginal propensity of the South African economy to import. Increases in real domestic expenditure normally result in more than proportionate increases in the volume of merchandise imports. This happened again in the fourth quarter of 1997 when the volume of merchandise imports rose by 3 per cent, implying an annualised growth rate of 13 per cent. This raised the value of merchandise imports in the fourth quarter of 1997 about 5 per cent higher than the value in the third

quarter. Increases occurred in most of the import categories, except for agricultural products. Imports of especially vehicle and transport equipment, machinery and electrical equipment and crude oil increased strongly in the fourth quarter of 1997.

Apart from the influence of fairly robust domestic final demand in the fourth quarter of 1997, the volume of merchandise imports was also spurred on by a slowdown in the rate of increase of the prices of imported goods relative to the prices of domestically produced goods. The combined effect of these two forces raised the import penetration ratio of South Africa (i.e. the ratio of real merchandise imports to real gross domestic expenditure) from 27 per cent in the first quarter of 1997 to an all-time high of 28½ per cent in the fourth quarter. For the year as a whole, the volume of merchandise imports rose by 5 per cent, which increased the import penetration ratio from 26½ per cent in 1996 to 27½ per cent in 1997.

The value of *merchandise exports* (seasonally adjusted and annualised), which had receded somewhat in the third quarter of 1997, increased by 2 per cent to R117,6 billion in the fourth quarter of 1997. After having declined slightly in the third quarter of 1997, *merchandise export volumes* remained broadly unchanged in the fourth quarter. The volume of exports of manufactured goods, which had been growing consistently in recent years, remained broadly unchanged in the third quarter of 1997 and declined in the fourth quarter. Noticeable declines were recorded

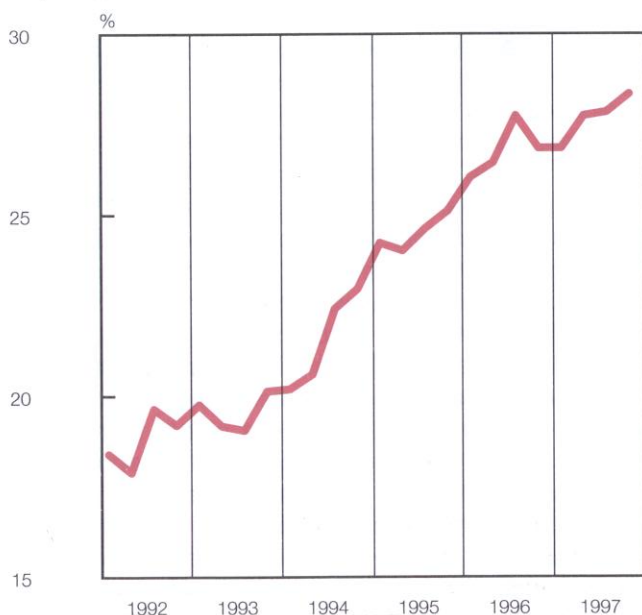
in the exportation of chemical and textile products in the fourth quarter of 1997.

The *prices in rand of South African export goods*, however, rose modestly by about 1 per cent in the fourth quarter of 1997, largely as a result of a decline in the nominal effective exchange value of the rand. International commodity prices, of relevance to South Africa's basket of export goods, were rather depressed in the fourth quarter of 1997 – on average they were about 6 per cent below the level of the second quarter.

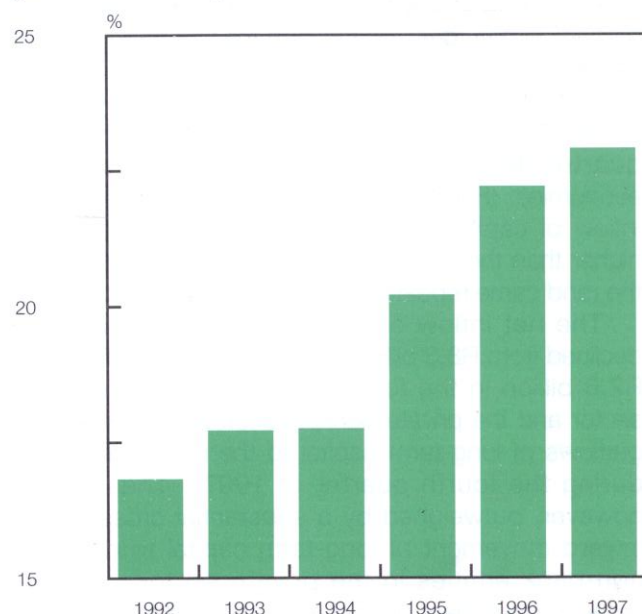
In 1997 as a whole, merchandise export values increased by 12½ per cent compared with 23½ per cent in 1996. Merchandise export volumes rose to such an extent that the ratio of real merchandise exports to real gross domestic product increased from 20 per cent in 1995 to 22 per cent in 1996 and 23 per cent in 1997. The access to new markets since the early 1990s have ostensibly played a significant part in expanding the country's export base.

The value of *net gold exports* (seasonally adjusted and annualised) declined slightly from R26,0 billion in the third quarter of 1997 to R25,7 billion in the fourth quarter, essentially owing to a reduction of 3 per cent in the physical quantity of net gold exports. The export price realisation (in rand) by domestic gold producers rose by about 2 per cent in the fourth quarter, despite a decline in the fixing price of gold on the London market from US\$324 per fine ounce in the third quarter of 1997 to US\$307 per fine ounce in the fourth quarter. The disparity between the gold price realisation and the

Import penetration ratio



Real merchandise exports as percentage of real gross domestic product



spot price in the London market was, of course, due mostly to forward sales of gold and other hedging practices that gold producers entered into. The potential price-raising effect of an increase in the physical demand for gold in January 1998 when some producers had to close short positions, was more than counteracted by rumours of substantial future gold sales by the South Korean central bank, leading to a decline in the monthly average fixing price of gold to US\$289 per fine ounce in January 1998.

For the year 1997 as a whole, the average price of gold per fine ounce came to US\$331; substantially below the average price level of US\$388 per fine ounce recorded in 1996. Despite the physical quantity of gold produced having declined slightly from 497 tons in 1996 to an estimated 495 tons in 1997, the volume of net gold exports increased by about 5½ per cent in 1997 on account of sales from inventories which had been stockpiled earlier.

Net service and transfer payments to non-residents (seasonally adjusted and annualised) rose from R17,3 billion in the second quarter of 1997 to R18,2 billion in the third quarter and R18,4 billion in the fourth quarter. The deficit on the services account increased in 1997, in most part due to an increase in service payments, especially interest payments related to inward investment into South Africa, which exceeded the increases in the value of receipts arising from services rendered to non-residents. The rise in receipts for services stemmed largely from increased travel and accommodation expenditure by foreigners visiting the country and a significant rise in interest and dividend receipts resulting from the recent spate of outward investment by South African organisations.

Capital account

The net inflow of capital not related to reserves, which had amounted to R18,3 billion in the first three quarters of 1997, was sustained in the fourth quarter. In fact, the net inflow of capital increased from R1,5 billion in the third quarter of 1997 to R1,9 billion in the fourth quarter despite the problems in the East Asian economies. For the calendar year as a whole, the net inflow of capital came to R20,2 billion, substantially higher than the net inflow of R2,7 billion in 1996 when the rand came repeatedly under speculative attack.

The net inflow of long-term capital, however, declined from R8,3 billion in the third quarter of 1997 to R2,6 billion in the fourth quarter. Both the public sector and the private banking sector experienced net outflows of long-term capital to the rest of the world during the fourth quarter of 1997. These were, however, outweighed by a substantial cross-border inward movement of long-term capital to domestic non-bank entities in the private sector. The net outward movement of long-term capital from the public sector and from private banking institutions is explained by fairly large repayments of foreign fixed

Table 11. Net capital movements not related to reserves

R billions

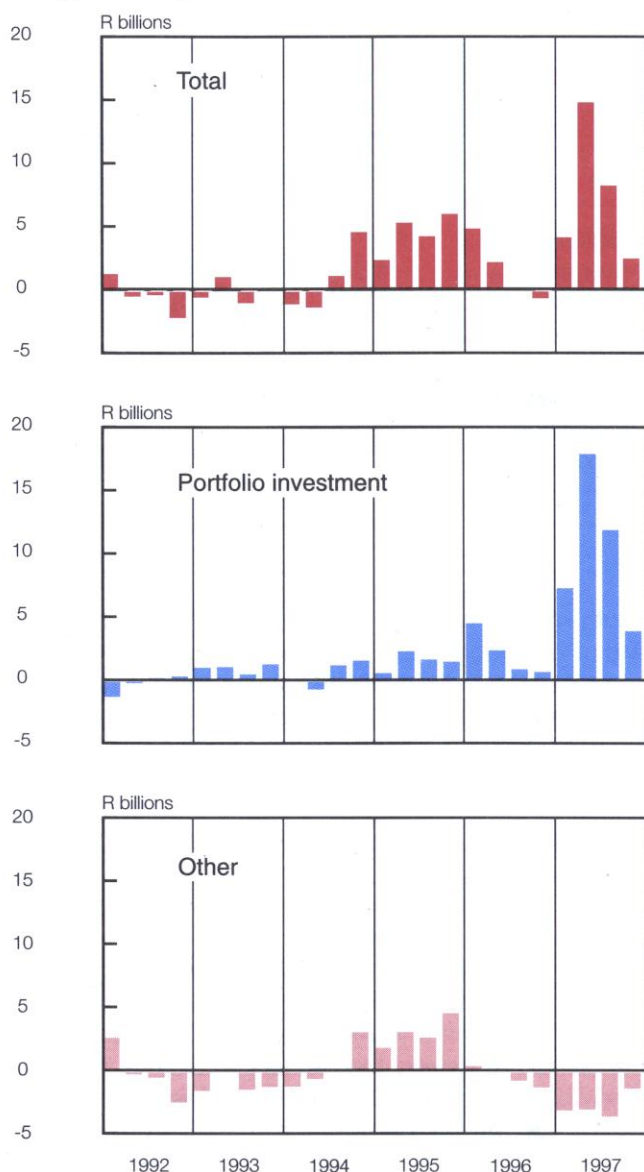
	1996	1997				
	Year	1st qr	2nd qr	3rd qr	4th qr	Year
Long-term capital						
Public authorities.....	8,0	1,0	12,2	2,1	-2,5	12,8
Public corporations	-1,3	1,4	4,8	0,8	-0,2	6,8
Monetary sector.....	-1,3	-0,2	-0,1	-0,3	-0,2	-0,8
Private sector	1,3	2,0	-2,0	5,7	5,5	11,2
Total long-term capital	6,7	4,2	14,9	8,3	2,6	30,0
Short-term capital						
Monetary sector.....	9,9	2,3	3,3	-4,5	0,0	1,1
Other, including unrecorded transactions	-13,9	-2,7	-5,2	-2,3	-0,7	-10,9
Total short-term capital	-4,0	-0,4	-1,9	-6,8	-0,7	-9,8
Total capital.....	2,7	3,8	13,0	1,5	1,9	20,2

capital commitments and net sales by non-resident investors of securities listed on the Bond Exchange of South Africa.

The net inflow of long-term capital to the non-bank private sector declined slightly from R5,7 billion in the third quarter of 1997 to R5,5 billion in the fourth quarter. Net purchases by non-residents of shares listed on the Johannesburg Stock Exchange amounted to R6,6 billion in the fourth quarter, taking the total net inflow of capital through this conduit to R26,2 billion for 1997 as a whole. South African entities acquired R4,4 billion worth of assets by way of asset swaps with non-resident investors in the fourth quarter of 1997 and assets to the value of R3,7 billion by using offshore placings of shares for funding purposes. Excluding possible secondary operations, these transactions were neutral with respect to net capital movements and changes in foreign exchange reserves.

As indicated in the accompanying graph, long-term capital inflows into South Africa during 1997 were dominated by portfolio investment flows. This form of capital is generally seen as less stable than foreign direct investment and, in the event of abrupt flow reversals could have a potentially destabilising effect on general macroeconomic equilibrium. The potential for the disruption of the South African securities markets by a sudden reversal of portfolio funds is, however, mitigated by the unique nature of a sizeable portion of recent capital flows. Firstly, to the extent that these flows were related to Eurorand issues with a long

Long-term capital movements



maturity, they represented a relatively longer-term investment into the economy and, secondly, where these flows formed the counterpart of an asset-swap transaction between a resident and a non-resident investor, they also assumed the character of a longer-term investment.

The net outflow of *short-term capital* not related to foreign reserves, but including measurement errors and unrecorded transactions, decreased from R6,8 billion in the third quarter of 1997 to R0,7 billion in the fourth quarter as non-bank private-sector organisations reduced their short-term foreign indebtedness. Although South African banks availed themselves of foreign short-term funds during a relatively tight period in the domestic

money market, these flows were completely offset by a decrease in trade-related borrowing by other entities during the fourth quarter of 1997.

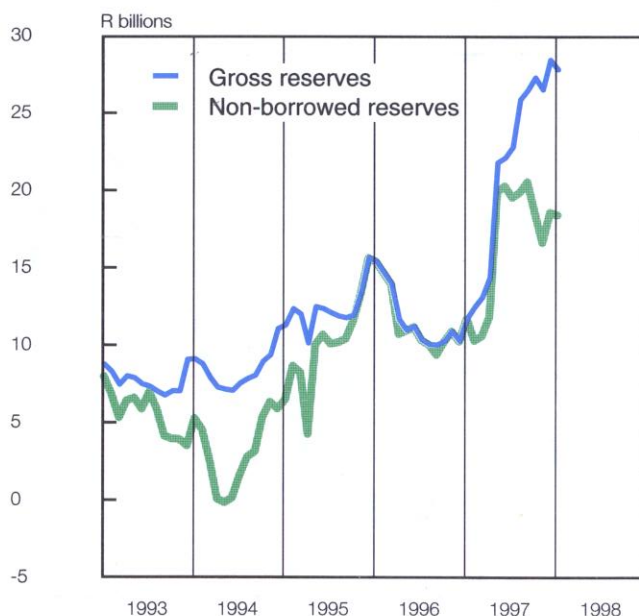
Foreign reserves

South Africa's *net gold and other foreign reserves* declined for the second consecutive quarter when they fell by R1,2 billion in the fourth quarter of 1997. In 1997 as a whole, the country's net foreign reserves nevertheless rose by R11,4 billion, compared with a decline of R4,6 billion in 1996.

Partly owing to an increase of R3,9 billion in the foreign short-term indebtedness of the Reserve Bank, the country's gross gold and other foreign reserves rose by R3,0 billion from the end of September 1997 to R36,6 billion at the end of December. This represented an increase of R19,8 billion from the end of 1996, but cognisance should be taken of the Reserve Bank's usage of short-term foreign credit facilities to an amount of R9,8 billion in the course of 1997. Measured in terms of United States dollars, total gross foreign reserves increased from \$3,6 billion at the end of 1996 to \$7,5 billion at the end of 1997. Relative to the value of imports of goods and services, gross reserves at the end of 1997 were equivalent to about 10 weeks' worth of imports of goods and services – merely two weeks short of the level widely regarded as a "prudent level" of foreign reserves.

At the end of November 1997 the Reserve Bank's net open position in foreign currency (i.e. the Bank's

Foreign reserves of the Reserve Bank



net forward position in foreign currency reduced by its net holdings of spot gold and foreign exchange reserves) stood at US\$17,1 billion, as against US\$22,2 billion at the end of December 1996. The change in the net open position during 1997 gave evidence of meaningful progress with the attainment of the stated policy intention to gradually reduce the Bank's foreign currency exposure. The limits that used to apply to the holdings of spot foreign exchange by authorised dealers in foreign exchange amounting collectively to US\$1,5 billion, were abolished with effect from 16 January 1998.

Exchange rates

Developments in the South African foreign exchange market were strongly influenced by events in the international financial markets during the fourth quarter of 1997. The problems in a number of East Asian economies heightened volatility in the local market for foreign exchange. As a consequence, the average daily turnover in this market rose from US\$7,4 billion in the first nine months of 1997 to US\$9,3 billion in October and US\$9,5 billion in November. Trading conditions calmed down somewhat in December and the average daily turnover declined to US\$7,5 billion in that month.

The nominal effective exchange rate of the rand, which had appreciated on balance by 0,4 per cent in September 1997, declined by 4,3 per cent in October when the problems in Asia began to spill over into

Table 12. Changes in the exchange rates of the rand

Per cent

	30 Sep 1997 to 31 Oct 1997	31 Oct 1997 to 31 Dec 1997	31 Dec 1996 to 31 Dec 1997	31 Dec 1997 to 20 Feb 1998
Weighted average	-4,3	0,5	-0,3	-1,4
US dollar	-3,1	-1,1	-3,8	-1,5
British pound	-6,4	-0,2	-1,6	-0,3
German mark	-5,6	2,5	10,6	0,1
Japanese yen	-4,0	7,0	7,7	-4,0
Netherlands guilder	-5,5	2,5	11,1	0,0
Italian lira	-5,4	2,6	10,7	0,4

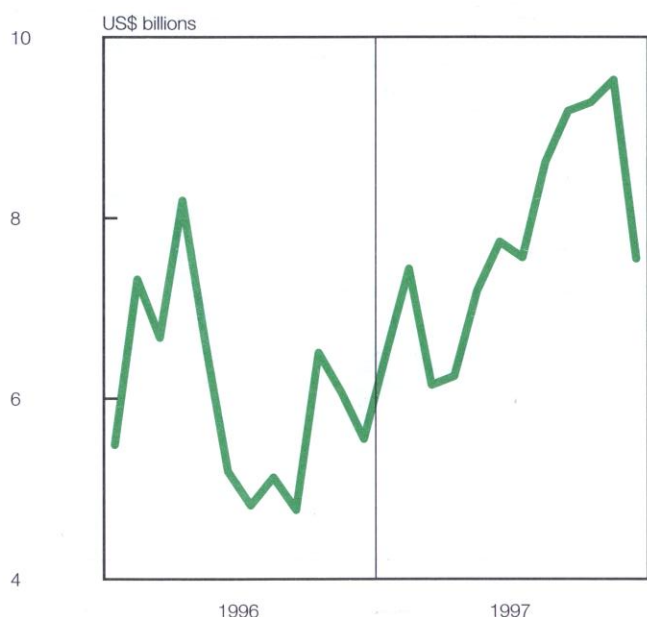
South Africa. In the ensuing two-month period to the end of December 1997 the nominal effective exchange rate rose by 0,5 per cent and subsequently declined by 1,4 per cent in the first seven weeks of 1998. Taking the inflation differential between South Africa and its major trading partners into consideration it would appear as though the currency market had recovered from the disruption caused by the problems in Asia and that a fair measure of stability had returned to the market. Contagion from the currency problems in Asia appeared to have been limited.

The stabilisation and eventual strengthening of the trade-weighted value of the rand in the aftermath of the currency problems in Asia occurred without official intervention to defend the exchange value of the rand at any particular level. During this episode, the Reserve Bank nevertheless entered the market from time to time to supply dollars, but this intervention was intended to provide liquidity when private market participants were reluctant to part with their foreign currency holdings and not so much to protect the external value of the rand.

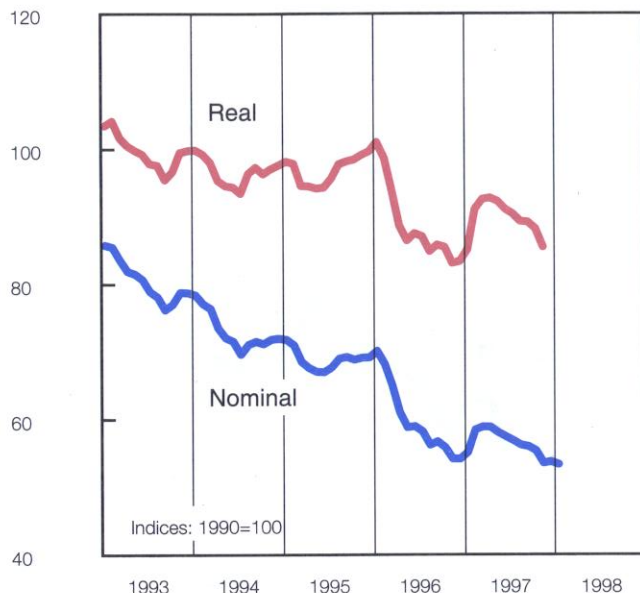
The rand, which had lost 21,9 per cent of its value against a basket of currencies in 1996, was much steadier in 1997 when it depreciated by only 0,3 per cent, notwithstanding the strong downward pressures in the fourth quarter of 1997. From the end of 1996 the rand moved from R4,68 against the United States dollar to R4,87 at the end of 1997, a depreciation of only 3,8 per cent. Against the German mark, the Italian lira and the Netherlands guilder, however, the rand appreciated by 10,6 per cent, 10,7 per cent and 11,1 per cent respectively over the same period.

The decline in the average level of the nominal effective exchange rate of the rand in 1997 was less than the inflation differential between South Africa and its major trading partners. Accordingly, the average

Average net daily turnover on the South African foreign exchange market



Effective exchange rates of the rand



level of the *effective exchange rate adjusted for the inflation differential* in 1997 was 0,5 per cent above the average in 1996. Within 1997 the inflation-adjusted effective exchange rate appreciated by approximately 3 per cent from December 1996 to December 1997.

Monetary developments, interest rates and financial markets

Money supply

The *growth rates of M3* (seasonally adjusted and annualised) fluctuated within a wide range during 1997, initially moving downwards until the middle of the year only to accelerate rapidly towards the end of the year. The twelve-month growth rate of M3 decreased from 16,8 per cent in January 1997 to 12,7 per cent in June, but then accelerated to 17,8 per cent in November and 17,2 per cent in December. The annualised growth in the quarterly average value of M3 slowed down from 18,1 per cent in the first quarter of 1997 to 12,1 per cent in the third quarter, but then rose strongly to 23,1 per cent in the fourth quarter. The growth in the quarterly average value of M3 from the base of the 1997 guideline year to the fourth quarter of 1997 was 17,4 per cent; this was appreciably higher than the upper limit of the guideline range of 10 per cent.

The rapid growth in the money supply was in part related to the growing demand for money for transactions purposes arising from continuing inflation (although this was lower than in previous years), and the demand arising from higher levels of overall economic activity as reflected in large increases in the turnover on the financial markets and by the growth in

Guidelines for growth in M3

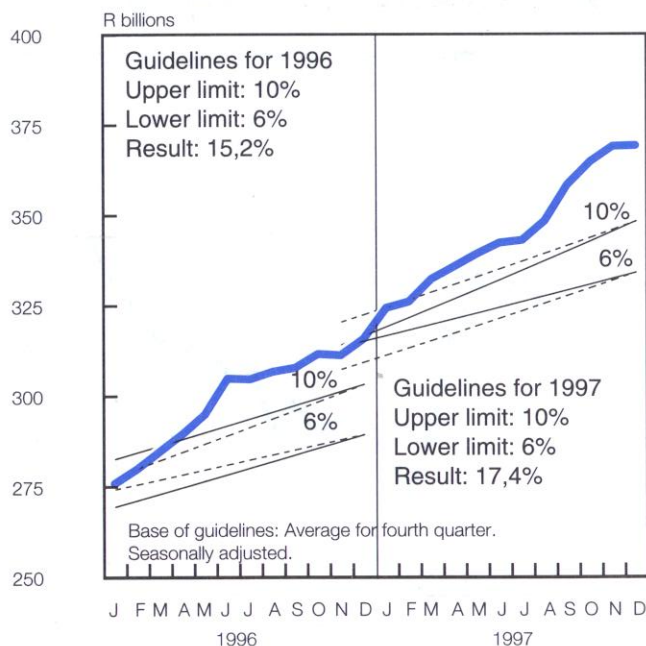


Table 13. Quarter-to-quarter growth in monetary aggregates

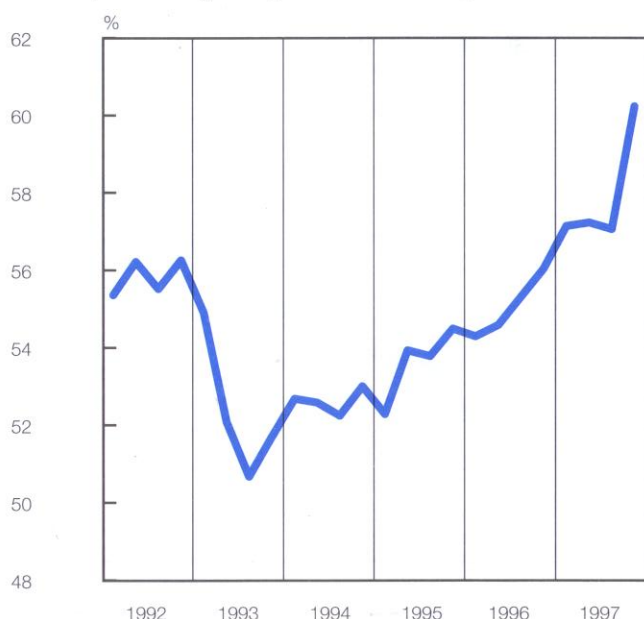
Per cent

Period	M1A	M1	M2	M3
1997: 1st qr.....	22,5	23,3	24,2	18,1
2nd qr.....	9,1	-1,3	13,5	16,4
3rd qr.....	25,7	21,4	11,0	12,1
4th qr.....	51,0	53,1	29,8	23,1

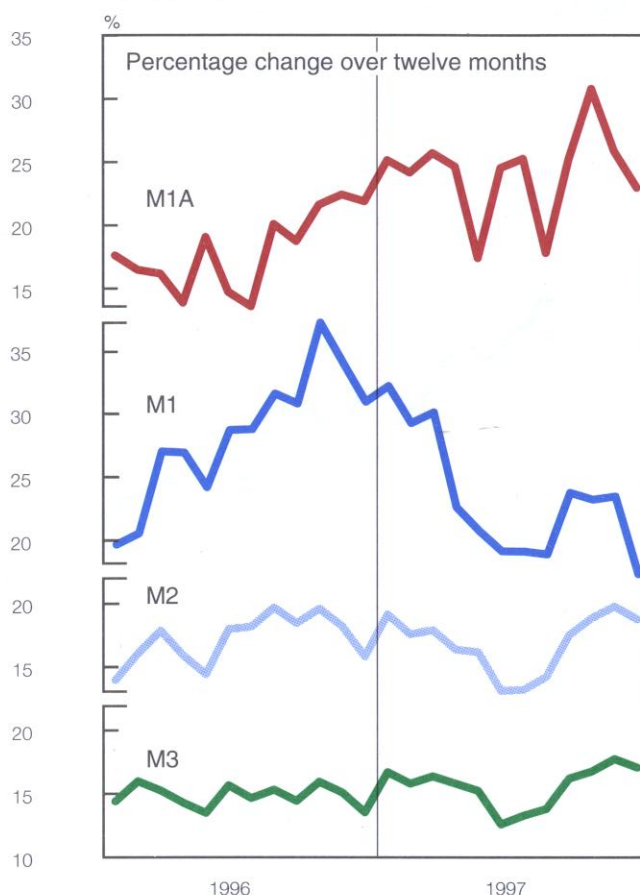
real domestic output and expenditure. Money also regained some significance as a store of value as inflation moved to lower levels, and real deposit rates rose. The uncertain outlook for financial markets following the financial problems in the Asian countries further strengthened the move towards deposit-type investments as an alternative to other financial assets.

As a consequence, the ratio of M3 to nominal gross domestic product (i.e. the inverse of the income velocity of circulation of M3) rose from 56,0 per cent in the fourth quarter of 1996 to 60,3 per cent in the fourth quarter of 1997. The rise in investors' preference for liquidity during 1997 is also reflected in the higher twelve-month growth rates of the narrower monetary aggregates (i.e. M1A, M1, M2) relative to the growth in M3 and the more rapid acceleration in the quarter-to-quarter growth rates of the narrower aggregates than the acceleration in the growth of M3.

M3 as percentage of gross domestic product



Monetary aggregates



The exchange control restrictions pertaining to the amount which a South African resident is allowed to hold in a deposit account denominated in foreign currency with a domestic bank were relaxed as from 1 July 1997. Such balances held by non-bank and non-government parties accordingly rose from R1,8 billion at the end of July 1997 to R2,1 billion at the end of December. In the case of individuals alone, the amounts deposited in foreign-currency denominated accounts rose from only R15,3 million to a still relatively insignificant R48,4 million over the same period.

Among the *statistical counterparts* of the increase of R54,8 billion in the M3 money supply during 1997, were the increases of R52,0 billion in the monetary sector's claims on the private sector and R9,8 billion on the government sector. The rise of R4,3 billion in the net foreign assets of the monetary sector also added to the growth in M3. These increases were partly offset by a decline in the "net other assets" of the monetary sector – the latter arising from, among others, surpluses accruing to the Reserve Bank as a result of its operations in the forward foreign exchange market. The complete set of accounting counterparts of the increase in M3 in 1997 was as follows:

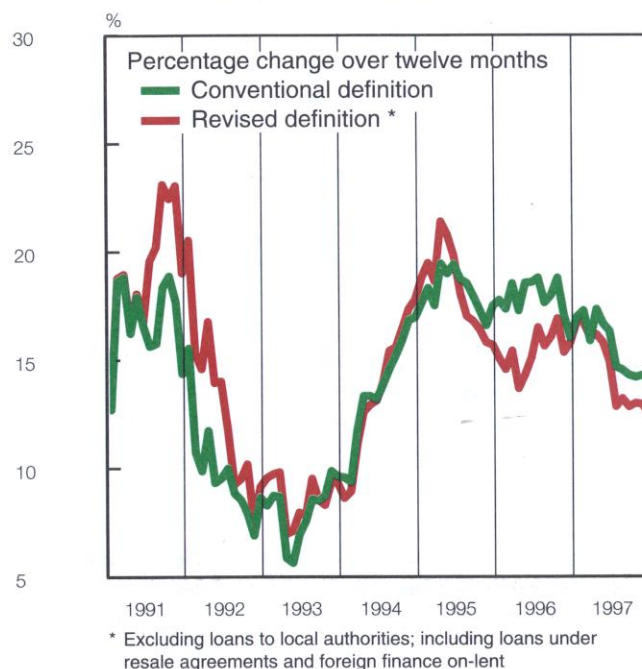
Table 14. Statistical counterparts of changes in M3
R billions

Counterparts	1997				
	1st qr	2nd qr	3rd qr	4th qr	Year
Net foreign assets	-2,2	6,5	1,9	-1,9	4,3
Net claims on the government	4,6	-3,3	4,0	4,5	9,8
Claims on the private sector	16,1	14,2	9,5	12,3	52,0
Net other assets and liabilities	-1,2	-11,2	0,4	0,6	-11,3
Total change in M3	17,4	6,2	15,8	15,4	54,8

Credit extension

Credit extension to the private sector was the main factor responsible for the rapid growth in the money supply. Nonetheless, the twelve-month rate of increase in *credit extension by monetary institutions to the private sector* declined from 17,3 per cent in February 1997 to 14,2 per cent in December. A revised version of the definition of bank credit extension to the private sector (which excludes loans to local authorities but includes loans and advances under resale agreements to "other parties" and foreign finance in banks' own names and on-lent to "other clients") indicated twelve-month growth of only 12,4 per cent in December 1997. Measured from quarter to quarter the growth in the conventionally defined credit

Credit extended to private sector



extension to the private sector decelerated from 21,2 per cent in the second quarter of 1997 to 9,5 per cent in the third quarter and 10,6 per cent in the fourth quarter.

An analysis of monetary institutions' claims on the private sector by *type of credit* shows that the twelve-month rate of increase in *mortgage advances* slowed

Table 15. Credit extended to the private sector by type of credit
Percentage change over twelve months

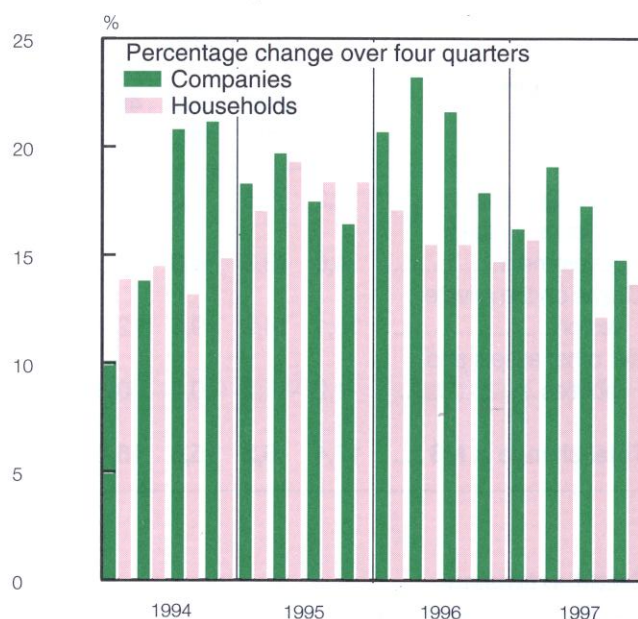
Period	Investments	Bills discounted	Instalment sales	Leasing finance	Mortgage advances	Other loans and advances	Total
1997: Jan	2,6	-13,2	21,1	16,6	16,7	20,0	17,1
Feb	1,4	-2,2	20,2	15,1	16,6	20,9	17,3
Mar	-1,5	-16,0	18,1	14,3	16,1	19,6	16,0
Apr	4,7	-6,2	19,5	12,9	15,8	22,5	17,4
May	10,2	-10,9	15,8	11,9	15,4	22,1	16,7
Jun	9,9	-15,8	14,3	8,9	15,0	23,2	16,4
Jul	15,8	-14,9	12,2	6,6	13,7	20,2	14,7
Aug	5,6	-0,7	11,6	5,6	13,1	21,2	14,6
Sep	-1,0	13,0	10,6	0,5	12,7	22,4	14,4
Oct	10,8	21,9	11,6	-1,4	12,2	21,0	14,3
Nov	14,1	11,7	9,7	-2,3	11,8	22,8	14,4
Dec	9,5	8,2	9,2	-3,0	11,5	23,6	14,2

down rapidly from 16,9 per cent in December 1996 to 11,5 per cent in December 1997 - its lowest level since February 1983. Lacklustre property market conditions and small increases in durable consumption expenditure contributed to the decline in the growth rate of mortgage advances. The high cost of mortgage borrowing naturally also cautioned households to exercise restraint in their recourse to mortgage financing facilities.

The percentage change over twelve months in total *instalment sale credit and leasing finance* declined from 19,6 per cent in January 1997 to 5,1 per cent in December. Reflecting the decline in motor vehicle sales in the fourth quarter of 1997, the outstanding amounts of credit extended by monetary institutions in terms of leasing agreements during the fourth quarter of 1997 fell below that of a year earlier. Total new business payouts in respect of instalment sale and leasing transactions receded from R41,5 billion in 1996 to R38,5 billion in 1997; in terms of inflation-adjusted totals this implies a decline of 14,5 per cent.

The strongest thrust for growth in credit extension to the private sector in the second half of 1997 was provided by increases in *overdrafts and other loans and advances*. The rate of increase over twelve months in this credit category has exceeded 20 per cent in each and every month since April 1997 and amounted to 22,8 per cent in November and 23,6 per cent in December. Strong demand for working capital by the corporate sector, some borrowing by businesses to keep afloat during a temporary slack in

Credit extended to private sector



demand and the switching of foreign trade financing from offshore to domestic sources of credit were among the main forces behind the rise in the demand for overdrafts and other loans and advances.

The shift in the relative importance of credit extended by the monetary sector from households to the corporate sector continued in the fourth quarter of 1997. In terms of percentage changes, the growth rate over twelve months in credit extension to households amounted to 13,7 per cent in December 1997, i.e. still below the twelve-month growth of 14,8 per cent in credit extension to the corporate sector over the same period.

Local subsidiaries and branches of foreign banks increased their share of the consolidated balance sheet

Credit extended to private sector by type of credit

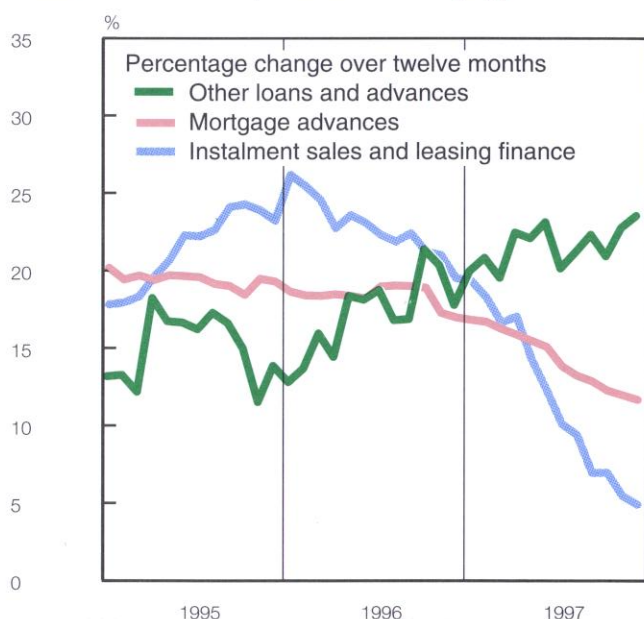
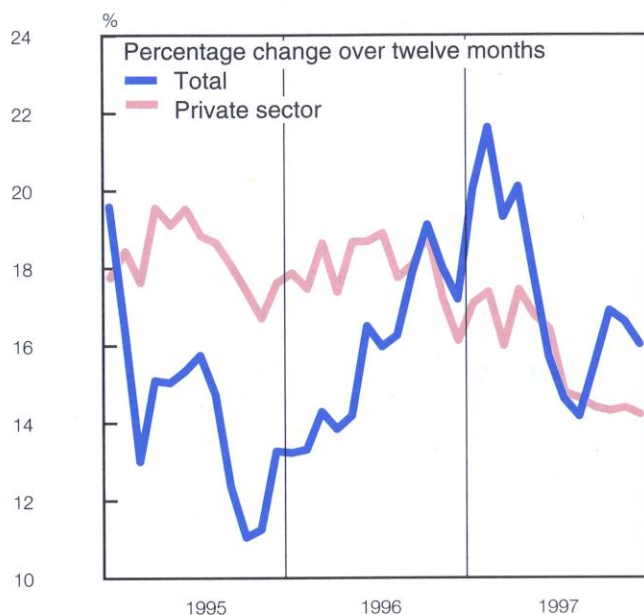


Table 16. Credit extended by local subsidiaries and branches of foreign banks

End of	Percentage change over twelve months	Percentage of total bank credit to private sector
1992	9,7	0,7
1993	80,3	1,1
1994	-2,1	0,9
1995	19,3	0,9
1996	98,9	1,6
1997	49,3	2,1

Credit extended by monetary institutions



of the banking sector fairly rapidly during 1997, albeit from a very low base. At the end of 1997 these subsidiaries and branches had extended credit to private-sector entities to an amount equivalent to only 2,1 per cent of total bank credit extended to the private sector - this despite a three and half fold increase in their lending operations over the past three years.

Net claims of monetary institutions on the government sector increased strongly during 1997, resulting in the twelve-month growth rate of total credit extension consistently exceeding the growth in credit extension to the private sector, except for the months from June to August. Aggregate credit growth measured over periods of twelve months nevertheless slowed down from 20,1 per cent in April 1997 to 14,1 per cent in August, but then accelerated, on balance, to 16,4 per cent in December. The increases in the banks' net claims on the government sector were more the result of increased holdings by banks of government securities than of a decline in government deposits with the monetary sector.

Interest rates and yields

Bond yields, which usually tend to decline during periods of gathering economic slack, eased during 1997 as expectations of inflation waned and the movements of the exchange rate of the rand became much more stable. The generally downward movement of bond yields was temporarily interrupted on two occasions: in March and April 1997 when uncertainty about the Budget proposals of the National

Government and the likely impact of the partial relaxation of exchange controls on residents caused yields to move higher, and again towards the end of October when the effect of the turbulence in some Asian financial markets impacted on the South African securities markets.

The *monthly average yield on long-term government bonds* declined from 16,2 per cent in December 1996 to 14,0 per cent in October 1997, but then rose to 14,5 per cent in November as the contagion effect of the Asian financial problems spread to South Africa. Bond yields subsequently resumed their downward movement and the monthly average value retreated to 14,1 per cent in December 1997 and 13,6 per cent in January 1998. The movements of the *daily average yield on long-term government bonds* during the fourth quarter of 1997 exhibited, as could be expected, much more volatility than the monthly averages: the daily average rate declined to 13,76 per cent on 22 October - its lowest level in 1997 - but then rose rapidly to 15,07 per cent on 28 October. When the bond market became more tranquil and non-residents again became net buyers of bonds, the daily average value of bond yields receded to 13,57 per cent at the end of January 1998.

The monthly average *inflation-adjusted yield* on long-term government bonds, which had bottomed out at about 5 per cent over the period from February 1997 to August, increased to 6,2 per cent in October as consumer-price inflation over one year began to decline more decisively whilst the monthly average of

Interest rates and yields

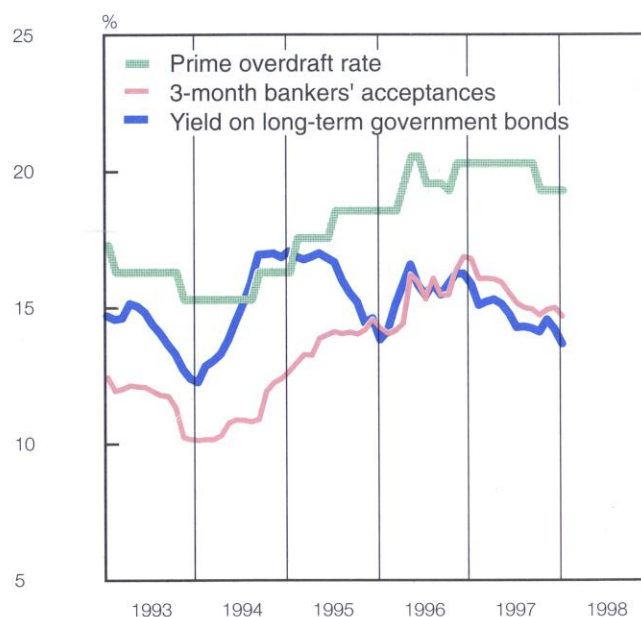


Table 17. Interest rates and yields
Per cent

Period	Monthly average yield on long-term government bonds		Predominant rate on	
	Nominal	Inflation-adjusted	Mortgage loans	12-month fixed deposits
1997: Jan.....	15,8	5,9	20,0	14,5
Feb.....	15,0	4,8	20,0	14,5
Mar.....	15,2	5,1	20,0	14,5
Apr.....	15,2	4,9	20,0	14,5
May.....	15,1	5,1	20,0	14,5
Jun.....	14,7	5,5	20,0	14,5
Jul.....	14,2	4,8	20,0	14,5
Aug.....	14,2	5,2	20,0	14,5
Sep.....	14,2	5,7	20,0	14,5
Oct.....	14,0	6,2	20,0	14,5
Nov.....	14,5	7,3	19,0	13,5
Dec.....	14,1	7,6	19,0	13,5
1998: Jan.....	13,6	7,5	19,0	13,5

nominal bond yields remained broadly unchanged. The fairly rapid decline in consumer-price inflation in the fourth quarter of 1997 then took the inflation-adjusted yield on long-term government bonds to 7,6 per cent in December.

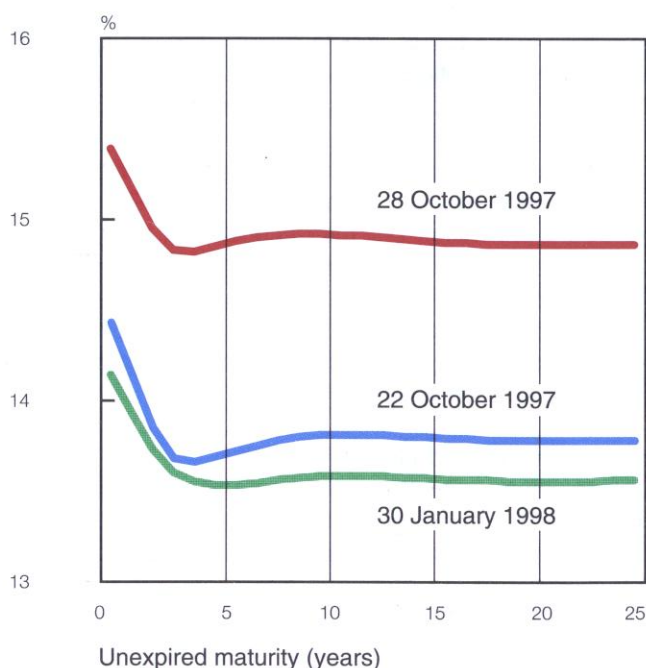
The rate on bankers' acceptances with a maturity of three months, which generally represents movements in money market rates fairly accurately, gradually drifted lower from 16,15 per cent at the end of January 1997 to a rate of 14,85 per cent at the end of September and 14,2 per cent on 23 October. Expectations of declining inflation and prospects of a reduction in official lending rates were among the main causes for the decline in money market rates during 1997. When the effects of the financial problems in the Asian economies spread to other emerging markets, the rate on bankers' acceptances of three months rose abruptly to 14,9 per cent at the end of October 1997 and 15,0 per cent at the end of November. With the return of more normal trading conditions, the rates declined somewhat to 14,9 per cent at the end of December 1997 and 14,45 per cent at the end of January 1998.

The downward trend in money market rates was also mirrored in a decline in the tender rate on Treasury bills with a maturity of three months from 15,84 per cent at the end of January 1997 to 14,49 per cent at the end of October. Despite the decrease of one percentage point in Bank rate on 20 October 1997, the tender rate on three-month Treasury bills rose to 14,59 per cent at the end of November and 14,79 per cent at

the end of December. Upward pressure on the three-month Treasury bill rate was mainly caused by the large money market shortage which occasionally necessitated banks' use of collateral qualifying for second-tier Reserve Bank accommodation during November and December. The strong demand for Treasury bills with a maturity of three months to avoid accommodation against collateral of second-tier assets kept the rate on these bills from rising as strongly as other money-market rates and consequently caused the differential between the Treasury bill rate and the bankers' acceptances rate to widen quite substantially during November 1997. Towards the end of January 1998 the tender rate on Treasury bills with a maturity of three months declined to 14,25 per cent.

Along with the general downward movement in interest rates and yields, the *yield curve* shifted downwards during 1997 to assume a form on 22 October that was clearly inverted in the less-than-three-year maturity area and with a notably flat gradient over longer maturities. With the heightened uncertainties in the latter part of October, the yield curve shifted markedly upwards over the full spectrum of maturities, but broadly maintained the shape and gradient that prevailed before the upward correction had taken place. The yield curve subsequently moved downwards again, but, with money-market interest rates declining slightly more than the yields on bonds with a three-year maturity, the gradient of the inverted section of the curve on 30 January 1998 was slightly less steep than on 22 October 1997. Judging from the

Yield curves



recent changes in the shape and slope of the yield curve, shorter-term interest rates and yields could have, maybe only temporarily, become somewhat more responsive than before to changes in underlying liquidity and general market conditions.

Positive financial developments were taken into consideration when the Reserve Bank lowered *Bank rate* by one percentage point from 17 per cent to 16 per cent on 20 October 1997. These included the slower growth in financial aggregates in the third quarter of 1997, especially the M3 money supply and credit extension to the private sector, falling inflation, a much more stable time path of the nominal effective exchange rate of the rand and rising gold and foreign exchange reserves. In response to this reduction in Bank rate, the banks lowered their *prime overdraft rate*, which had been unchanged at 20,25 per cent since 21 November 1996, by one percentage point to 19,25 per cent and their *predominant rate on mortgage loans* to 19 per cent. The inflation-adjusted rate on mortgage loans increased from 9,8 per cent in December 1996 to 12,2 per cent in December 1997 as the decline in consumer price inflation exceeded the decline in the nominal rate charged by banks on mortgage loans.

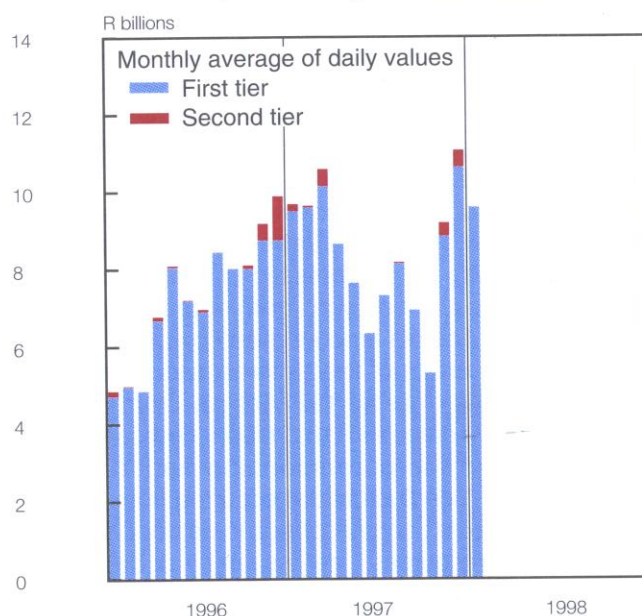
Other deposit and lending rates were also adjusted either in the fourth quarter of 1997 or early in 1998. The *predominant retail rate on twelve-month fixed deposits with banks* was lowered by one percentage point to 13,50 per cent in November 1997. The *standard interest rate* applicable to loans granted from the State Revenue Fund was raised from 14,0 per cent in November 1997 to 14,5 per cent in January 1998, but then lowered to 13,75 per cent in February 1998.

Money market

Money market conditions, which were relatively tight throughout the first quarter of 1997, eased during the second and third quarter, but then tightened again in the fourth quarter. This is reflected by the amount of *accommodation* extended to banks by the Reserve Bank *at month-ends*, which rose from R8,7 billion at the end of January 1997 to R10,5 billion at the end of March. The money market "shortage" then declined to R5,1 billion at the end of June 1997 and was still at a relatively low level of R6,5 billion by the end of September.

The decline in the net foreign assets of the Reserve Bank, following the turbulence in Asian financial markets, along with seasonal flows of banknotes caused the amount of accommodation provided by the Bank to rise sharply to R11,1 billion at the end of November 1997 and R10,2 billion at the end of December. The tightening of the market in November and December 1997 compelled banks to approach the Reserve Bank with collateral qualifying for "second-tier" accommodation at penal interest rates. The money market "shortage" subsequently subsided to R7,6 billion at the end of January 1998.

Accommodation provided by Reserve Bank



The relatively tight money market conditions that prevailed in the fourth quarter of 1997 were the result of the draining of liquidity from the market through an increase in notes and coin in circulation of R2,7 billion and a decrease of R2,3 billion in the net foreign assets of the Reserve Bank. The tightening effect of these developments was partially counteracted by losses incurred on account of the Reserve Bank's involvement in forward foreign exchange transactions during the fourth quarter which injected liquidity into the market.

In January 1998 money market conditions eased considerably as notes and coin moved back to the Reserve Bank after the festive season. Government deposits with the Reserve Bank were also reduced in January 1998, while bank liquidity was further strengthened through the losses incurred on account of the Reserve Bank's transactions in the forward foreign exchange market.

The *Reserve Bank's operations* in the money market during the fourth quarter of 1997 were intended to permit the money market shortage to reflect the underlying demand and supply situation in the market. Short-term adjustments were made to the asset portfolio of the Corporation for Public Deposits and foreign currency swap arrangements were entered into with banks in such a way as to counter large fluctuations in the money market shortage.

Bond market

Private-sector listed companies focused their capital-raising activities in 1997 on the primary share market and almost completely abstained from making *issues*

of *fixed-interest securities*, i.e. convertible preference shares and debentures. An amount of only R2,8 million was raised through the issuance of convertible preference shares and debentures in 1997 as a whole, compared with R2,2 billion in 1996. However, an amount of R1,2 billion was mobilised by private-sector companies through issuing *bonds* listed on the Bond Exchange of South Africa during 1997.

As a consequence of private-sector companies' lack of interest in the issuance of *fixed-interest securities*, activity in the domestic primary market for fixed-interest securities was dominated by *public-sector entities*. The net amount raised by public-sector bodies through issues of fixed-interest securities in the first nine months of fiscal 1997/98 (i.e. from April to December 1997) came to R16,8 billion, compared with R12,3 billion in the corresponding period of the previous year. Wide fluctuations occurred from quarter to quarter in the net access of public-sector bodies to capital-market resources; net issues by public-sector bodies fell from R7,2 billion in the April-June quarter to R2,1 billion in the July-September quarter when net stock redemptions amounting to R6,9 billion were made, but then rose again to R7,5 billion in the October-December quarter.

The *National Government* supplemented its funding requirements to an amount of R3,8 billion through issues of foreign-currency denominated bonds in the international primary bond market in 1997, compared with R3,4 billion in 1996. In June 1997, a ¥40 billion seven-year Samurai bond was issued. The spread of 93 basis points between the yield on these bonds and their Japanese counterpart was significantly narrower than the previous Samurai issue in 1995, which was priced at 215 basis points above the yield on comparable bonds of the Japanese government. The South African government followed shortly after the Samurai with a US\$500 million twenty-year Yankee bond, priced at a spread of 183 basis points above the yield of comparable bonds of the US Federal Government. This was the international loan issue with the longest maturity that has been issued by South Africa, clearly reflecting improved investors' confidence in the country. It also enabled the Government to extend and improve the maturity profile of external debt.

Non-financial public-sector and private-sector corporations abstained from issuing foreign-currency-denominated bonds in the international capital markets. Eskom, Transnet and the Development Bank of Southern Africa opted instead to raise R870 million through rand-denominated bonds in the Eurobond market during 1997. In January 1998 Eskom raised a further amount of R137 million in Eurorands and the Development Bank of Southern Africa R1 billion in February.

Turnover in the *secondary bond market* increased by 41 per cent in 1997 to an aggregate amount of R4 269 billion. An all-time quarterly high turnover value

of R1 370 billion was recorded in the fourth quarter of 1997. Trading activity remained buoyant at R465 billion in January 1998. Among the more prominent explanations behind the sharp rise in turnover were:

- the relatively high yields which attracted the interest of non-resident investors;
- the prospects for continued stability of the rand;
- the need to hedge positions arising from Eurorand bond issues through purchases in the South African bond market;
- the turmoil in the Southeast Asian financial markets and the resilience of the domestic bond market amidst unsettled conditions in a number of emerging markets;
- the improved efficiency of bond trading in South Africa brought about by, among others, the shortening of the bond settlement period; and
- the availability of repurchase transactions whereby market participants can use sale and buyback trades to "carry" their positions from day to day and over settlement dates.

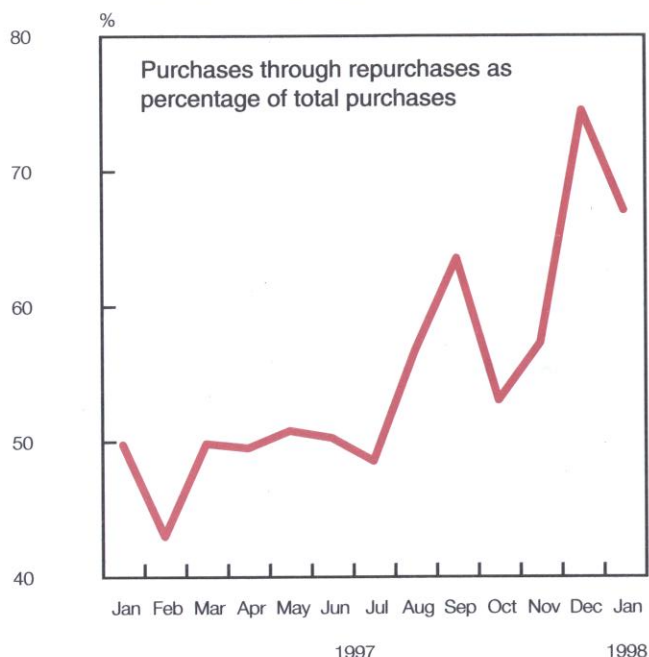
Repurchase transactions, in particular, gained in popularity in the course of 1997. Purchases through repurchase transactions, increased as a percentage of total purchases from 49 per cent in the first half of 1997 to 56 per cent in the third quarter and 60 per cent in the fourth quarter. The highest percentage for any individual month was recorded in December 1997 at 75 per cent.

Despite net sales of bonds to the value of R4,2 billion in the fourth quarter of 1997, the *cumulative net purchases of bonds by non-residents* amounted to R14,8 billion in 1997 as a whole, compared with R3,4

Table 18. Bond and share market activity

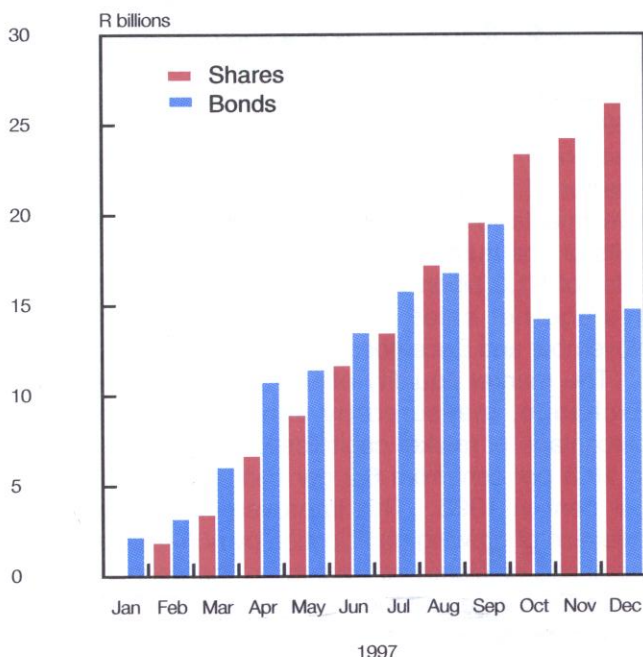
Period	Secondary market		
	Bonds traded	Shares traded	
	Value	Number	Value
	R billions	billions	R billions
1996: 1st qr	753	2,0	27,2
2nd qr	781	1,9	27,4
3rd qr	809	2,4	27,8
4th qr	680	2,7	34,6
Year	3 023	9,0	117,0
1997: 1st qr	883	3,9	41,2
2nd qr	834	4,5	51,0
3rd qr	1 182	4,9	58,7
4th qr	1 370	4,6	55,8
Year	4 269	17,9	206,7

Turnover in the bond market



billion in 1996. Settlement of an amount of R2,9 billion of these net purchases during 1997 was still outstanding at the end of that year. The further decline

Non-residents' cumulative net purchases of shares and bonds



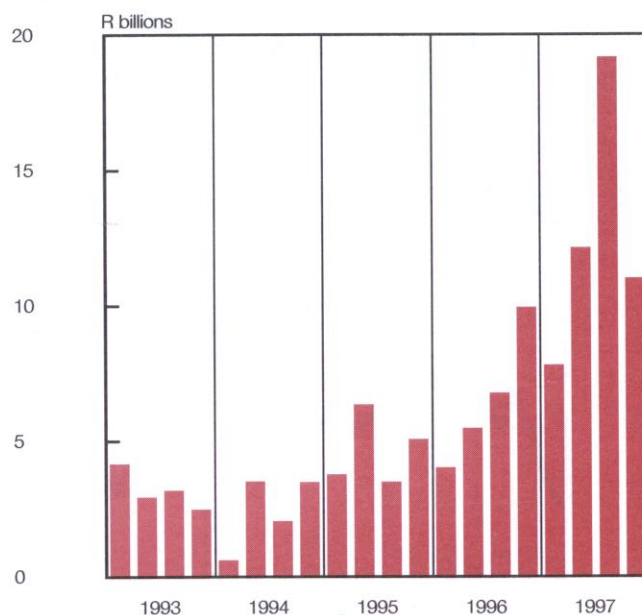
in bond yields early in 1998 to levels that were still attractive relative to yields in other markets and the prospects of further capital gains, continued to lure non-residents into the South African bond market and their net purchases amounted to R3,6 billion in the six weeks up to mid-February 1998.

Share market

Unlike the primary market for fixed-interest securities, the *primary share market* was extensively used by companies listed on the Johannesburg Stock Exchange and the *total value of capital* raised in this market increased from R26,4 billion in 1996 to R50,3 billion in 1997 or by 91 per cent. Shares issued for the *acquisition of assets* not already listed increased more than threefold from R6,4 billion in 1996 to R21,6 billion in 1997 and *rights issues of ordinary shares* increased from R7,6 billion to R9,7 billion over the same period. These two means of finance therefore accounted for 43 per cent and 19 per cent of total capital raised in the primary share market in 1997.

Turnover in the *secondary share market* rose strongly in 1997. The *number* of shares traded on the Johannesburg Stock Exchange almost doubled from 1996 to 1997, whereas the value of such shares increased by some 77 per cent to R207 billion. Monthly turnovers reached a peak of R21,8 billion in October 1997, but subsided in the ensuing months to R16,5 billion in December as investors' confidence in emerging markets weakened. Investors' sentiment improved appreciably in the early weeks of 1998 and

Capital raised in the primary share market



turnover in the secondary share market rose to R18,6 billion in January.

The share market was underpinned by strong demand from *non-resident investors* in 1997. The cumulative net purchases of shares in the secondary share market by non-residents amounted to R26,2 billion in 1997, or almost five times as much as their net purchases of R5,3 billion in 1996. Although some re-assessment of the intrinsic value of South African securities took place in the aftermath of the Asian financial market problems, non-resident investors remained net buyers of shares to the value of R6,6 billion in the fourth quarter of 1997 and R4,3 billion in the first six weeks of 1998. The perception of reduced exchange rate risk, a positive outlook for price movements in the share market and the problems in Asia have apparently encouraged non-resident investors to increase the portion of their emerging market portfolios allocated to the shares of South African companies.

The *monthly average price level of all classes of shares*, which had risen steadily since the beginning of 1997, dropped sharply in the second half of October, reflecting the general turbulence in global equity markets. Supported by solid earnings growth and in anticipation of a decline in interest rates, the average level of all-share prices reached an all-time high in August 1997 – a rise of 14,6 per cent from December

1996. This happened despite a slump in the monthly average price level of *gold-mining shares*, which fell by 58,2 per cent from May 1996 to December 1997 in response to a decline in the price of gold. From August 1997 to December, the monthly average level of the all-share price index fell by 16,5 per cent. The monthly average value of gold-mining shares improved by 12 per cent in January 1998 when the price of gold steadied. This increase in the price of gold-mining shares notwithstanding, the all-share price index increased by only 0,4 per cent in January 1998.

The decline in share prices from August 1997 was essentially caused by the deterioration of investor confidence in emerging markets following the problems in Asia and introduced an additional element of volatility in share price movements on the Johannesburg Stock Exchange. The *all-share price index*, at first, declined slightly by 2,5 per cent from a peak on 7 August 1997 to 22 October. Within four trading days the all-share price index then fell by 19 per cent to 28 October. The index recovered briefly in the ensuing six trading days before weakening again, reaching a low point for the calendar year on 12 December 1997. It declined further by 6 per cent to a new low on 12 January 1998. Although the market recovered strongly in the second half of January 1998, the all-share price index was still 14 per cent lower at the end of that month than the peak value on 7 August 1997.

The monthly average *dividend yield* on all classes of shares declined from 2,46 per cent in January 1997 to 2,31 per cent in July as share prices increased firmly, but then increased to 2,70 per cent in January 1998 as share prices moved lower. The monthly average *earnings yield* (gold-mining shares excluded) declined likewise from 7,01 per cent in December 1996 to 6,56 per cent in July 1997, before increasing to 7,62 per cent in January 1998. The *price-earnings ratio* of all classes of shares, excluding gold-mining shares, averaged about 14,9 over the period January-September 1997, but then declined to 13,1 in January 1998 as earnings strengthened and share prices weakened. The weakening of share prices in the last quarter of 1997 caused the popularity of unit trust investments to wane fairly drastically. Transactions in units of unit trusts changed from monthly average net sales of R1,3 billion in the first ten months of 1997 to average net sales of R1,1 billion per month in November and December.

The market liquidity of the Johannesburg Stock Exchange, measured by annual turnover as a percentage of market capitalisation, improved in 1997 to 18,3 per cent from 6,2 per cent in 1995 and 10,9 per cent in 1996. This improvement was partly a reflection of growing participation by non-residents, the increased efficiency of trading on the Johannesburg Stock Exchange and the partial relaxation of exchange control measures which allowed domestic institutional investors to enter into asset swap transactions with

Share prices

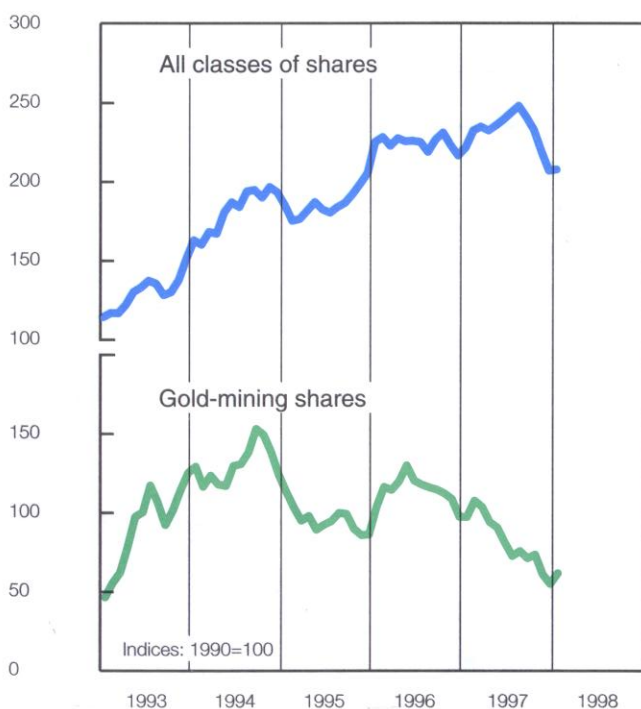


Table 19. Yields and price ratios

Period	Dividend yield Per cent	Earnings yield* Per cent	Price- earnings ratio*
1996: Dec	2,46	7,01	14,27
1997: Jan	2,46	6,89	14,51
Feb	2,37	6,68	14,96
Mar	2,40	6,62	15,11
Apr	2,41	6,66	15,01
May	2,40	6,70	14,93
Jun	2,37	6,87	14,55
Jul	2,31	6,56	15,23
Aug	2,33	6,59	15,17
Sep	2,44	6,77	14,76
Oct	2,53	7,13	14,03
Nov	2,62	7,14	14,00
Dec	2,74	7,57	13,21
1998: Jan	2,70	7,62	13,13

* Excluding gold-mining shares

non-resident investors. Despite this improvement, market liquidity remained low by international standards, probably because of the remaining exchange controls which limit investment opportunities of domestic investors and thereby inhibit institutional investors from trading their portfolios actively.

Other financial markets

The exceptionally strong rise in the activity levels of the share market, the increased participation of non-residents in the domestic securities markets and the problems in Asian financial markets boosted trading in the *formal derivatives market* in 1997. Trading in *equity and interest rate futures and options contracts* accordingly increased by 25,1 per cent from the levels attained in 1996. Trade in equity contracts overwhelmingly dominated this kind of trading and accounted for 99,6 per cent of all trades concluded. The number of *futures contracts* traded increased by 26,8 per cent and the number of *options on futures contracts* traded by 23,8 per cent from 1996 to 1997. Non-resident participation in this market also increased strongly from an average of 8,8 per cent of open interest in 1996 to 28,3 per cent in December 1997.

From their introduction in May 1997 only 475 *rand-dollar futures contracts* had been traded by the end of January 1998. Until the end of January 1998 the number of *equity options contracts* traded since their introduction in September 1997 totalled 98 110. From the introduction of *warrants* on the Johannesburg Stock Exchange in October 1997, a total number of 117 million trades had been concluded by the end of January 1998.

Trade in *commodity futures* was dominated by *maize contracts* which had increased from 2 700 in 1996 to 20 200 in 1997 – 68 per cent of these were white maize contracts. Only 163 *wheat* commodity futures contracts had been traded since their introduction in November 1997 to the end of January 1998.

Trading conditions in the *real-estate market* as a whole, and especially in the residential property market, remained sluggish in 1997, mainly owing to the relatively high cost of mortgage financing. The value of transactions increased by 7,6 per cent from 1996 to 1997, whereas the number of transactions increased by only 2,7 per cent over the same period. The average value per transaction thus showed an increase of less than 5 per cent in 1997, which was well below the corresponding rate of consumer-price inflation.

Public finance

The Medium Term Budget Policy Statement

The Minister of Finance released the *Medium Term Budget Policy Statement 1997* on 2 December 1997. The Statement sets out the policy framework for the budget for fiscal 1998/99, describes government's goals and objectives, explains the economic environment within which these objectives are addressed and projects the total level of resources that will be available.

The Statement should be seen as a further step in the development of an open, transparent and co-operative policy-making process. It does not constitute a new policy, but presents an operational plan in the sphere of the national budget, designed to give effect to policy objectives that were enunciated in previous policy documents. These were:

- to reduce the overall budget deficit and the level of government dissaving;
- to avoid permanent increases in the overall tax burden;
- to reduce consumption expenditure by general government relative to gross domestic product; and
- to strengthen the general government contribution to gross domestic fixed investment.

A key element of the Statement is the *Medium Term Expenditure Framework* (MTEF) which initiates a process of rolling three-year budgets. These are first steps in a wider overhaul of the budgetary process. The emphasis will be on transparency, output-driven programme budgeting and political prioritisation.

The acceptance and publication of a three-year expenditure framework by the national and provincial governments have important advantages. The more prominent among these are:

- departments and agencies will be encouraged to evaluate their policy proposals within realistic budget projections;
- a framework will be created within which government could assess the financial implications of policy proposals;
- medium-term planning by departments and spending agencies will be fostered, leading to improved efficiency;
- the management of rollovers will be facilitated as departments and agencies will be allowed to enter into contracts that will involve future payments; and
- the credibility of fiscal targets will improve.

Medium term fiscal projections

Government's revenue and spending projections for the fiscal years 1998/99 to 2000/01 were based upon the following assumptions:

- growth of real gross domestic product would

Table 20. Fiscal projections

R billions

	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001
National Budget				
revenue	162,0	178,1	195,7	216,2
National Budget				
expenditure	186,8	202,1	218,5	241,5
Deficit	24,8	24,0	22,8	25,3
Percentage of gross domestic product				
National Budget				
revenue	26,2	26,0	25,8	25,6
National Budget				
expenditure	30,2	29,5	28,8	28,6
Deficit	4,0	3,5	3,0	3,0

accelerate from 2 per cent in fiscal 1997/98 to 3 per cent in fiscal 1998/99, 4 per cent in fiscal 1999/2000 and 5 per cent in fiscal 2000/01; and

- the inflation rate would fall from 9 per cent in fiscal 1997/98 to 7,5 per cent in fiscal 1998/99, 6,5 per cent in fiscal 1999/2000 and 6 per cent in fiscal 2000/01.

These assumptions will, of course, be adjusted in future years in light of actual economic performance. The fiscal projections for the year 1998/99 to 2000/01 are presented in Table 20.

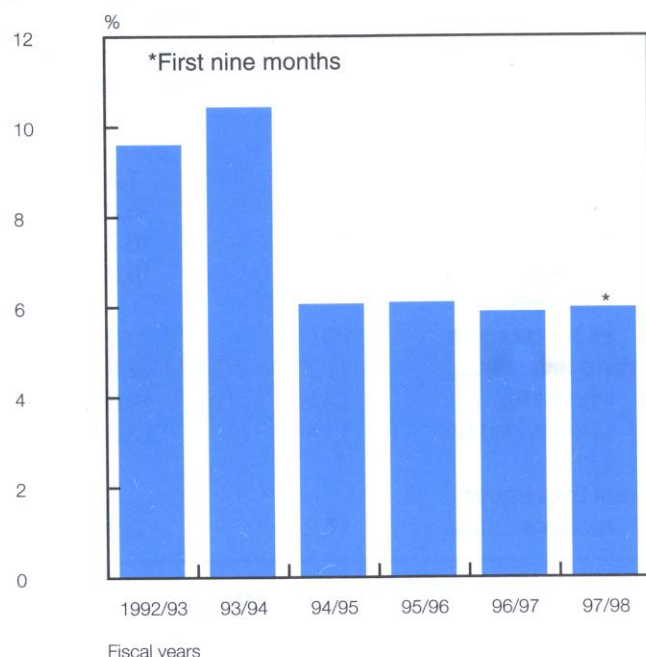
As far as public spending is concerned, government is committed to fiscal prudence. Should the economy fail to grow as fast as indicated by the macroeconomic projections, government expenditure growth will have to be lower than the projections.

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 public corporations) increased from R21,9 billion in the first three quarters of fiscal 1996/97 to R27,1 billion in the first three quarters of fiscal 1997/98. As a ratio of gross domestic product, the public-sector borrowing requirement increased from 5,3 per cent in the first three quarters of fiscal 1996/97 to 6,0 per cent in the corresponding period of fiscal 1997/98.

The larger borrowing requirement of the public sector could mainly be attributed to increased borrowing by *provincial governments* which increased from R0,9 billion in the first nine months of fiscal 1996/97 to R5,6 billion in the first nine months of fiscal 1997/98. This was mainly the result of higher levels of

Public-sector borrowing requirement as percentage of gross domestic product

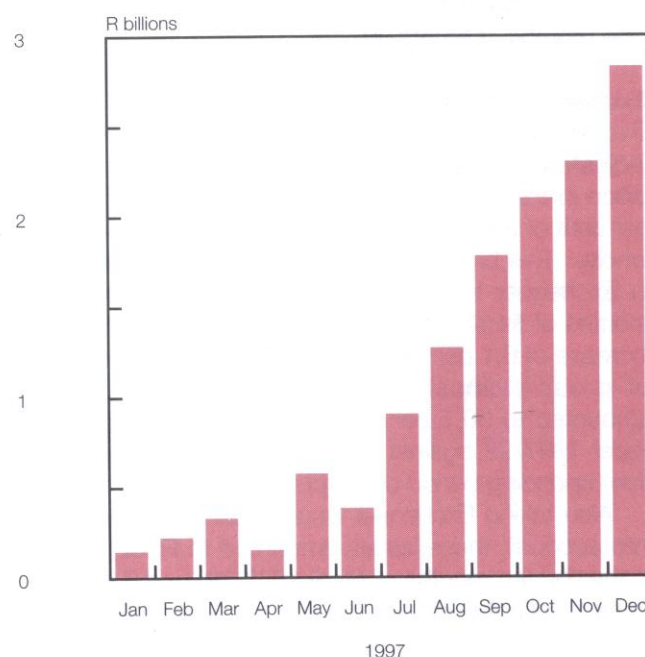


expenditure by a number of provincial governments on education, health care and welfare service delivery. Some of the provincial governments accessed bank credit resources for the funding of their revenue

Table 21. Public-sector borrowing requirement

	April-December 1996		April-December 1997	
	R billions	Per cent of gross domestic product	R billions	Per cent of gross domestic product
Main Budget	19,5	4,7	18,0	3,9
Extra-budgetary institutions	1,4	0,3	1,6	0,3
Provincial governments	0,9	0,2	5,6	1,2
Local authorities	0,4	0,1	0,9	0,2
Non-financial public enterprises and public corporations	-0,5	-0,1	0,8	0,2
Total public sector..	21,9	5,3	27,1	6,0

Bank indebtedness of provincial governments



shortfalls, leading to an increase in bank indebtedness of provincial governments from R332 million at the end of March 1997 to R2 834 million at the end of December.

In contrast to the increase in the borrowing requirement of provincial governments, the *borrowing requirement of the Main Budget* decreased from R19,5 billion in the first nine months of fiscal 1996/97 to R18,0 billion in the first nine months of fiscal 1997/98. This decline in the borrowing requirement of the Main Budget occurred notwithstanding a year-on-year rate of increase of 6,8 per cent in the transfers to provincial governments in the first nine months of fiscal 1997/98. Transfers to provincial governments were budgeted to be R80,4 billion in fiscal 1997/98, which indicates an increase of only 2 per cent over the actual transfers that were made in fiscal 1996/97.

Expenditure by general government increased at a year-on-year rate of 10,9 per cent in the first nine months of fiscal 1997/98 compared with 14,9 per cent in the first nine months of the previous fiscal year. Despite this slowdown in general government expenditure over twelve months, it still increased as a percentage of gross domestic product from 36,9 per cent in the first nine months of fiscal 1996/97 to 37,5 per cent in the first nine months of fiscal 1997/98.

Total revenue receipts of general government increased at a year-on-year rate of 8,9 per cent during the first nine months of fiscal 1997/98, compared with 15,0 per cent in the corresponding period of the previous fiscal year. This led to a slight decrease in

total revenue receipts as a percentage of gross domestic product from 31,4 per cent in the first nine months of fiscal 1996/97 to 31,3 per cent in the first nine months of fiscal 1997/98.

Exchequer account

Exchequer issues to government departments (adjusted to reflect cash flows) amounted to R139,8 billion in the first nine months of fiscal 1997/98 or 74,8 per cent of total budgeted expenditure for the year as a whole. This brought the year-on-year rate of increase in Exchequer issues to 6,8 per cent in the first nine months of fiscal 1997/98; the Budget provided for an increase of 6,1 per cent for the full fiscal year. As a ratio of gross domestic product, Exchequer issues amounted to 30,7 per cent in the first nine months of fiscal 1997/98 against 31,5 per cent recorded in the corresponding period of the preceding year.

Also taking Exchequer issues during January 1998 into account, these issues amounted to R152,3 billion in the first ten months of fiscal 1997/98, or 4,7 per cent more than in the first ten months of the preceding year. Exchequer issues during this period equalled 81,5 per cent of the total expenditure budgeted for the year as a whole.

Exchequer receipts (not considering extraordinary revenue) amounted to R118,8 billion in the first nine months of fiscal 1997/98 or 8,2 per cent more than in the corresponding period of the previous fiscal year. An increase of 11,2 per cent was envisaged in the Budget for the fiscal year as a whole.

Table 22. Percentage increase in government revenue in fiscal year 1997/98

Revenue categories	Budget projection for full year	Year-on-year increase in first nine months
Customs and excise	8,0	1,3
Customs	4,3	-5,2
Excise	15,9	16,7
Fuel levy	10,4	16,2
Payments to BLNS countries*	20,0	20,0
Inland revenue	11,7	12,8
Income tax	13,5	12,6
Value-added tax	11,4	13,8
Total Exchequer receipts	11,2	8,2

* Botswana, Lesotho, Namibia and Swaziland

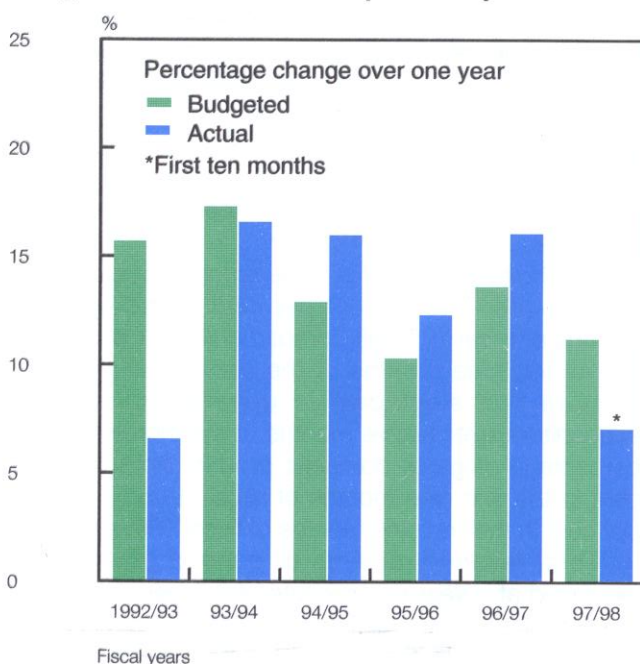
Apart from income tax and customs duties, all the other broad categories of revenue have outperformed the budget expectations thus far. The weak growth in the collection of customs duties was partly due to the accelerated implementation of tariff reductions agreed to in the Final Act of the Uruguay Round of trade negotiations. Despite this shortfall in revenue growth, the contractual responsibilities in respect of transfers to members of the Southern African Customs Union, of course, remained unchanged.

In January 1998 Exchequer receipts decreased by 1,9 per cent compared with January 1997. This brought the year-on-year rate of increase in Exchequer receipts to 7,0 per cent in the first ten months of fiscal 1997/98. Exchequer receipts during this period accounted for 82,4 per cent of total revenue of R162,0 billion envisaged in the Budget for the fiscal year as a whole.

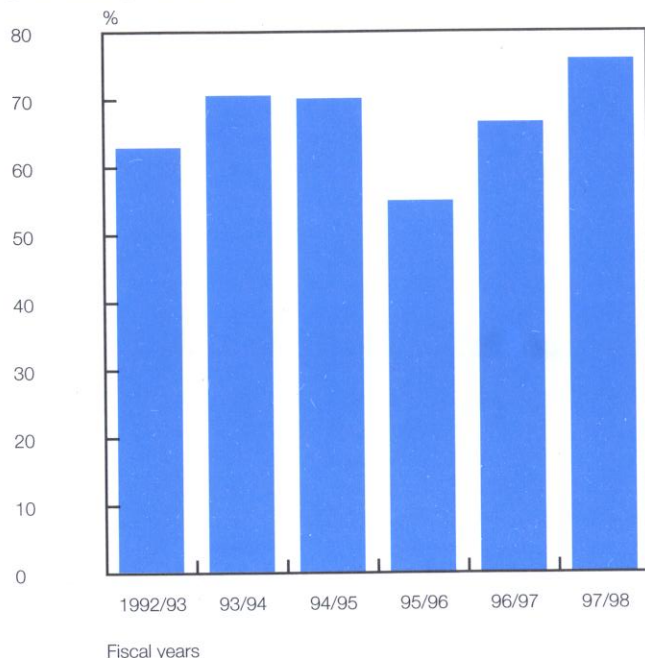
The net result of the lower-than-budgeted revenue and higher-than-budgeted expenditure was a *deficit before borrowing and debt repayment* of R20,9 billion in the first nine months of fiscal 1997/98. As a ratio of gross domestic product, the deficit before borrowing and debt repayment amounted to 4,6 per cent in the first nine months of fiscal 1997/98, compared with 5,1 per cent in the corresponding period of the previous fiscal year and 4,0 per cent projected for the current fiscal year as a whole.

The realised deficit in the *first ten months* of fiscal 1997/98 amounted to R18,7 billion, which represents 75,7 per cent of the deficit budgeted for the year as a whole. This percentage was substantially higher than the 67,3 per cent of the full-year deficit that was realised in the first ten months of the previous year and

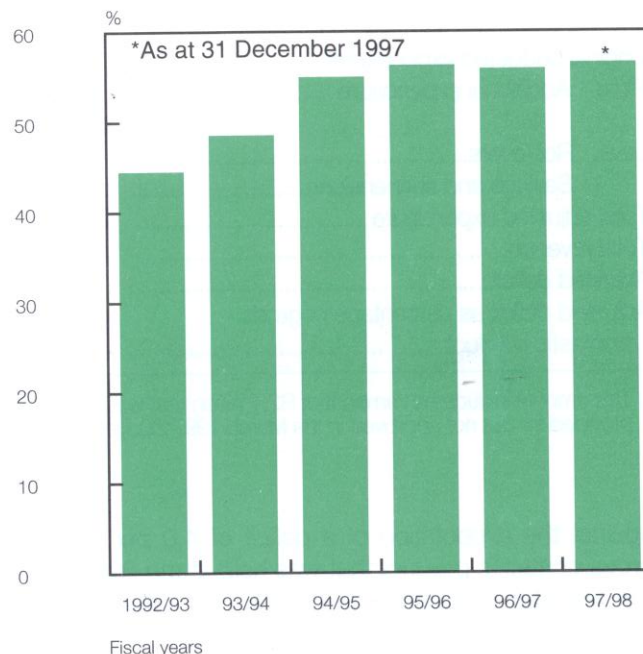
Budgeted and actual Exchequer receipts



Exchequer deficit in first ten months as percentage of budgeted deficit for fiscal year



Total government debt as percentage of gross domestic product



the average of 64,8 per cent recorded in the preceding five fiscal years.

The greater part of the deficit in the first ten months of fiscal 1997/98 was *financed* by means of new issues of government stock as indicated in the following table:

R millions

Government stock (including discount)	20 714
Less: Discount on government stock	3 867
Net receipts from government stock issued	16 847
Treasury bills	3 733
Extraordinary receipts	2 937
Foreign loans	
Redemption of IMF loan**	-1 036
Other loans	3 758
Non-marketable securities	-99
Redemption of Namibian debt	-203
Redemption of Section 239 debt*	-3 551
Transfer from IMF accounts**	1 036
Increase in available cash balances	-4 679
Total net financing	18 743

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

** Contra entries.

Total government debt rose from R310,6 billion at the end of March 1997 to R336,1 billion at the end of December 1997. As a percentage of gross domestic product, government debt increased from 55,8 per cent at the end of March 1997 to 56,5 per cent at the end of December 1997. Government debt continued to increase in January 1998 and accumulated to R336,3 billion by the end of that month.

Adjustments Budget for fiscal 1997/98

In the Adjustments Budget tabled in Parliament on 13 February 1998 additional expenditure of R9,1 billion was approved for fiscal 1997/98. However, if consideration is given to the postponement of spending to subsequent fiscal years and other adjustments, the revised estimates of expenditure for fiscal 1997/98 are raised by R2,7 billion to R189,5 billion. As a ratio of gross domestic product, the revised expenditure estimate is expected to be 30,5 per cent in fiscal 1997/98, which is more than the original budget estimate of 30,0 per cent, but less than the 31,8 per cent realised in the previous fiscal year.

The initial estimate of revenue of R162 billion was left unchanged in the Adjustments Budget, leaving an upward revision of the Budget deficit from R24,8 billion to R27,5 billion. This is equivalent to 4,5 per cent of the revised estimate of the gross domestic product as

Table 23. Adjustments Budget estimates for 1997/98

	R billions
Original budgeted expenditure*	186,7
Plus: Additional expenditure	7,0
	193,7
Less: Roll-overs	3,6
Savings and suspensions	0,6
Total adjusted expenditure	189,5
Total revenue	162,0
Adjusted deficit	27,5
Adjusted deficit as percentage of gross domestic product	4,5

* This amount includes an amount of R2,1 billion that was provided for but not approved in the March 1997 Budget.

against the expectation of a deficit of 4,0 per cent of gross domestic product that was held at the time when the Minister of Finance presented his initial budget proposals to Parliament in March 1997.

Gross fixed investment in the macro-econometric model of the Reserve Bank

by C.J. Pretorius

Introduction

A sustained increase in productivity or an expansion of production capacity represent two of the most important factors needed to achieve long-term economic growth. The expansion of a country's production capacity requires additional investment or capital formation. International studies have indicated that a high ratio of investment relative to gross domestic product is one of the most important preconditions for achieving sustained high economic growth.

South Africa's poor investment performance during the 1980s and first part of the 1990s can be depicted as one of the main reasons for the restricted expansion in the country's growth potential. Fixed investment relative to gross domestic product declined from 27,8 per cent in 1981 to 15,5 per cent in 1993, and has since increased to 17,0 per cent in 1996.

The forced correction of external imbalances in South Africa during the 1980s, as in many other developing countries, was accompanied by large cuts in investment expenditure and a decline in domestic savings. The lower levels of investment resulted in lower economic growth rates and declining job opportunities. Global integration and greater access to international markets as sources of capital, coupled with lower public-sector deficits since 1994 which made more domestic savings available to finance private-sector investment, resulted in an upward trend in private investment during the last few years and subsequent higher economic growth.

Although investment currently accounts for less than 20 per cent of overall gross domestic product, this spending category is very important in the determination of economic growth as fluctuations in the level of investment expenditure over the course of the business cycle tend to be much larger than fluctuations in any of the other macroeconomic expenditure aggregates.

Investment expenditure is normally divided into four categories, namely infrastructural investment in the public sector, residential construction, business fixed investment and the net change in business inventories. The reason for this distinction is that each of these categories is determined by substantially different factors and they respond differently to fluctuations in economic activity. This article focuses mainly on fixed investment in the business sector.

The purpose of the article is to describe the fixed investment equation of the private business sector as contained in the Reserve Bank's macroeconomic

model. The first section gives an overview of Jorgenson's neoclassical fixed investment theory that underpins the estimated investment equations in the model. The second section presents an overview of medium-term trends in gross fixed investment as recorded in the national accounts of South Africa. Subsequent sections deal with explanatory variables appearing in the behavioural equation as well as the specification and econometric estimation of the investment equation. Some concluding comments are made in the final section.

The neoclassical fixed investment theory

The neoclassical theory of optimal capital accumulation, as formulated by Irving Fisher (Fisher, 1930.) in the 1920s, has been extensively modified by Jorgenson and others. The biggest attraction of Jorgenson's methodology is that it developed a model of investment spending, which incorporates interest rates, output volumes, capital goods prices and existing stock of capital goods into a coherent framework. The central theoretical feature of neoclassical theory is the concept of user cost of capital, which can be described as the price of the services provided by capital.

The Cobb-Douglas production function can be used to illustrate the production process of an individual firm. The process can be simplified by assuming that the firm produces only one product, using two inputs, namely capital and labour. If the volume of production is indicated by Q , labour by L and the capital stock by K , then the production function of the firm in period t is summarised by the following equation:

$$Q_t = F(L_t, K_t)$$

Neoclassical theory assumes that the objective of a firm is to maximise its profits over the economic life of the assets. Profit is defined as gross revenue less the cost of current inputs and taxes. Revenue is defined as the product of the price per unit of output and quantity produced. Labour costs are defined by the wage rate times the quantity of labour and the capital costs defined by the product of the unit cost of capital services and the quantity of capital services. The profit of an organisation can consequently be represented by:

$$R = pQ - wL - qK - T \quad (1)$$

where R = net profit;

- p = price of the product;
 Q = quantity produced;
 w = wage rate;
 L = quantity of labour;
 q = cost of capital services;
 K = quantity of capital services; and
 T = taxes.

The value of the firm in period $t = 0$ can be illustrated in the following way:

$$V = \int_0^{\infty} e^{-rt} (pQ - wL - qK - T) dt \quad (2)$$

where r represents a discounting rate independent of t .

The present value of the firm is equal to the discounted value of the expected future net yields. The objective of the firm is to maximise equation 2 subject to the following constraints:

$$Q_t = F(L_t, K_t)$$

$$I_t = \delta K_t + \dot{K}, \text{ where } \dot{K} = \frac{dK}{dt} \quad (3)$$

I_t represents gross fixed investment and δ the depreciation rate. Equation 3 assumes that depreciation is proportional to the capital stock.

The solution to the firm's optimisation problem and the derivation of a formula for the user cost of capital are summarised in Appendix A. Profit over the life of the asset will be maximised when the marginal product of labour is equal to the ratio of the price of labour services to the price of the product, also referred to as the real wage:

$$\frac{\partial f}{\partial L} = \frac{w}{p}$$

The optimal capital stock is obtained where the value of the marginal product of capital is equal to the ratio of the user cost of capital to the price of the product, also referred to as the real user cost of capital:

$$\frac{\partial F}{\partial K} = \frac{c}{p}$$

where c indicates the user cost of capital and is defined as:

$$c = q(\delta + r \frac{\dot{q}}{q}) \quad (8)$$

The user cost of capital can also be seen as the implicit price of the costs of using capital in the production process. The firm should act as if it is renting capital to itself and make decisions that reflect

the implicit charges of using the capital. In elementary models the implicit costs have three elements:

- the costs associated with the acquisition of the asset;
- the financing costs related to the loan capital; and
- the depreciation of the capital over the period in use, less any capital gains of the firm during that period.

The impact of tax policy on investment

Robert Coen (1968: 200-211) conducted a study to determine the impact of tax concessions in the manufacturing sector. Tax incentives can stimulate capital expenditure in two ways:

- Tax incentives increase the after-tax rate of return on capital by reducing the amount of taxes that has to be paid on income from assets.
- Tax incentives reduce tax liabilities and therefore increase the cash flow and funds available for investment expenditure.

The neoclassical model provides a useful framework to evaluate tax policy and its impact on investment spending. Coen extended the concept of the user cost of capital to accommodate tax liabilities of firms and the effect of tax concessions on investment.

The effect of tax rates on investment behaviour is analysed in Appendix B. It is shown that the firm will continue to expand its capital stock as long as the marginal product of capital exceeds the real user cost of capital.

$$\therefore p \frac{\partial Q}{\partial K} > q(r + \delta)(1 - uB) / (1 - u) = c \quad (11)$$

$$\text{That is } \frac{\partial Q}{\partial K} > [q(r + \delta)(1 - uB) / (1 - u)] / p$$

$$\text{or } \frac{\partial Q}{\partial K} > \frac{c}{p}$$

An increase in the rate of taxation, either through a rise in the tax rate or a decrease of incentives, would raise the user cost of capital and discourage fixed investment. Conversely, a decrease in the rate of taxation would lower the user cost of capital and encourage fixed investment.

If $u = 0$, that is if no direct corporate tax is paid, equation 11 reduces to an equation similar to equation 8, although the capital gain term was not considered in this equation.

Tax credits

This analysis can easily be extended to include tax credits. In order to promote investment, a proportion k of capital outlays can be credited against tax liabilities.

The tax discount is then kq and the unit price of capital goods after provision for tax credits is $(1-k)q$. The user cost of capital then reduces to:

$$c = q (r + \delta) (1 - k - uB) / (1 - u) \quad (12)$$

If the tax credit concession is accompanied by a depreciation allowance on new capital outlays with a factor of say b , the discounted value of the tax savings generated by the depreciation allowance B , is replaced by $(1 - b)B$. The expression for the user cost of capital then changes to:

$$c = q (r + \delta) (1 - k - u(1 - b)B) / (1 - u) \quad (13)$$

The influence of tax credits on the user cost of capital can thus be captured by:

- changes in the corporate tax rate (u);
- the impact of depreciation allowances (uB); and
- the granting of tax credits on new investments (k).

For the purpose of this study, it was assumed that no provision is made for tax credits and that $b = 0$; that is, the definition of equation 12 is used for the concept of the user cost of capital (c).

The calculation of the user cost of capital.

The formula used for the calculation of the user cost of capital is given by the following equation:

$$c = q (r + \delta) (1 - uB) / (1 - u) \quad (12)$$

where c = the user cost of capital;

q = the unit price of new capital equipment;

r = an interest rate at which the firm can borrow or lend financial resources;

δ = the depreciation rate;

u = corporate tax rate; and

B = the discounted value of depreciation allowances associated with capital expenditures of $R1$.

However, it is not always possible to calculate or measure all the elements of the expression for the user cost of capital directly, and the following approximations were therefore used:

- q : The unit cost of new capital goods is approximated by the derived deflator for fixed investment.
- r : The yield on long-term government bonds traded on the bond exchange is used as a long-term interest rate.
- δ : The depreciation rate for a time period t is calculated as:

$$\delta_t = \frac{W_t}{K_{t-1}}$$

where W_t = depreciation allowed for in period t and
 K_{t-1} = capital stock at the end of period $t-1$.

$$B = \sum_{i=1}^{\infty} d_i (1 + r)^{-i} \quad (10)$$

where d_i = depreciation allowances permitted for tax purposes.

If it is assumed that the assets are written off over θ periods, then the equation for the discounted value of depreciation allowances can be simplified, as is shown in Appendix C, to:

$$B = \frac{1}{r\theta} (1 - e^{-r\theta})$$

The lifetime of the asset θ is equivalent to the inverse of the depreciation rate $\frac{1}{\delta}$.

From the foregoing it emerges that the concept of user cost of capital is a much wider notion than an interest rate which is normally used in fixed investment equations. The notion of user cost includes variables such as the general price level, interest rates, tax rates and depreciation rates. The influence of these variables on investment expenditure is captured by the user cost of capital variable.

The lag structure of fixed investment

Fixed investment normally takes place over a long period, and therefore net investment in the current period can be viewed as the result of changes in the capital stock and user cost over a number of preceding periods. Real net investment in period t can be presented by a capital stock adjustment model in the following way:

$$I_t = u(S) (K_t^* - K_{t-1}) + \delta K_{t-1} \quad (14)$$

where I_t = real gross fixed investment;

δ = depreciation rate;

K = real capital stock;

K^* = desired capital stock;

$u(S)$ = the lag structure S , with $Sx_t = x_{t-1}$

The expression δK_{t-1} signifies the depreciation written off in period t . Equation 14 can be simplified to describe how changes in investment spending are likely to respond, with a time delay, to changes in the desired capital stock, past changes in investment expenditure and past changes in the actual capital stock. It has become customary in empirical work to constrain the distribution of the weights of the lagged variables to follow a pattern that can be approximated by a higher order polynomial function.

It normally takes a long time from the moment the investment decision is taken until the actual investment process materialises. Since the actual capital stock does not react immediately to changes in the desired capital, it is possible to restrict the lower order

coefficients of the polynomial structure to zero and the polynomial structure can, for example, look like this:

$$\alpha(S) = \alpha_4 S^4 + \alpha_5 S^5 + \alpha_6 S^6$$

Current period changes in the variable involved can therefore be constrained to have no influence on net investment for a prespecified number of periods.

A further problem is that the desired capital stock is not directly measurable and must therefore be approximated through another set of assumptions.

The determination of the desired capital stock

According to equation 11, the desired capital stock is obtained when the marginal production of capital equals the real user cost of capital, that is when:

$$\frac{\partial Q}{\partial K} = \frac{c}{p}$$

In order to derive an expression for the demand for capital, a specific demand function like the Cobb-Douglas production function is assumed:

$$Q = AL^\alpha K^\beta$$

where A, α and β are constants and α represents the elasticity of output with respect to labour and β represents the elasticity of output with respect to capital. Optimisation decision rules indicate that profit maximisation occurs when:

$$K = \beta \frac{pQ}{c}$$

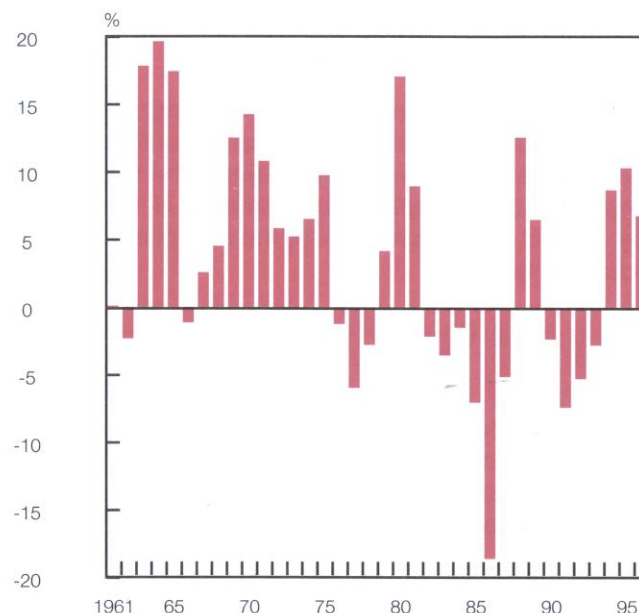
The desired capital stock can thus be approximated by assuming that it is proportional to the ratio of the value of output and the user cost of capital:

The desired capital stock then equals $K^* = \frac{pQ}{c}$, where pQ is the value added in a specific sector and c represents the user cost of capital in that sector.

Medium-term trends in gross fixed investment

The annual average growth rate in total real gross domestic fixed investment has slowed down considerably from the 1960s. It decelerated from an average of nearly 8 per cent in the 1960s to an average of 4,7 per cent in the 1970s and then to an average of less than 1 per cent in the 1980s and early 1990s. The economic upswing that started in May 1993 was characterised by a strong recovery in the growth of real gross fixed investment during 1994 and 1995, but investment spending slowed down

Graph 1: Growth in real fixed investment, 1961-1996



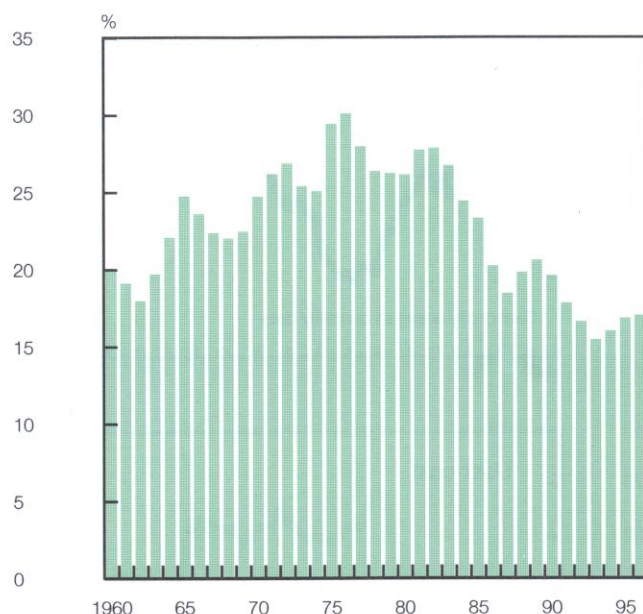
somewhat towards the end of 1996. The declining growth trend in gross domestic fixed investment is illustrated in Graph 1.

The declining contribution of fixed investment to the gross domestic product is depicted in Graph 2. As a percentage of gross domestic product, gross fixed investment decreased from an average of almost 27 per cent in the 1970s to an average of 17 per cent in the early 1990s. This ratio reached a high point of 30,1 per cent in 1976 before assuming a downward trend and reaching a low point of only 15,5 per cent in 1993. It has since recovered somewhat from this very low level to 17,0 per cent in 1996. This level of fixed investment is nevertheless still well below the more than 25 per cent which is widely regarded as a precondition for a sustained high rate of economic growth.

Table 1 indicates that decreases in real fixed investment by public authorities and public corporations since the 1980s were mainly responsible for the lower growth in total investment. The growth in private sector fixed investment also slowed down, but periods of continued declining investment were not encountered.

The continued contraction in real fixed capital formation by public authorities can be ascribed to significant reductions in real fixed investment by both the general departments and the business enterprises of general government. The decline in the investment

Graph 2: Gross fixed investment as percentage of gross domestic product



of general government in part reflected the increased emphasis by government on current expenditure on social services and the difficulty of government to reduce public consumption.

The contraction in the fixed capital outlays of public corporations was partially a correction of the earlier creation of excess capacity by some of these enterprises. It also formed part of determined cost-cutting plans aimed at improving the cost effectiveness

Table 1. Average annual growth rates in real fixed investment by type of institution

Per cent

	Public author- ities	Public corpo- rations	Private sector	Total
1961-1969	7,6	15,0	7,4	7,9
1970-1979	2,8	14,9	3,3	4,7
1980-1989	-2,4	-1,9	3,7	0,7
1990-1996	-6,3	-0,5	3,4	1,2
1960-1996	0,8	7,2	4,4	3,7

of public corporations.

The apparent reluctance of the private sector to invest in new projects during the 1980s and early 1990s could be ascribed to a number of factors, including:

- a high level of unutilised production capacity in the manufacturing sector;
- the relatively high level of taxation in South Africa;
- rationalisation of the gold-mining industry;
- periods of drought and a high level of farm debt;
- general lack of business confidence as a result of uncertainty about future political developments;
- the civil unrest and violence in many parts of the country; and
- more recently, the high incidence of violent crime.

Since 1993, capital expenditure on a few major projects like Columbus and Alusaf has contributed to the revival of fixed investment. As the recovery in general economic activity in 1993 became more widespread and gathered momentum, a large part of new investment spending was devoted to the replacement of obsolete equipment which had been deferred previously.

Table 2 gives an indication of the contribution of the various subsectors of the economy to total gross domestic fixed investment. The contribution

Table 2. Investment by type of asset as percentage of total fixed investment

	1960 to 1969	1970 to 1979	1980 to 1989	1990 to 1996
Agriculture, forestry and fishing	8,3	5,9	4,5	3,6
Mining and quarrying	8,7	7,4	12,2	10,5
Manufacturing	19,0	19,9	19,6	24,9
Electricity, gas and water	8,1	9,4	13,3	8,2
Construction	1,1	1,8	1,5	1,3
Wholesale and retail trade, catering and accommodation ...	6,4	6,5	5,7	6,9
Transport, storage and commu- nication	14,1	14,6	10,6	8,4
Finance, insurance, real estate and business services..	17,2	17,6	20,7	23,4
Community, social and personal services	17,0	16,8	12,0	13,0

of the agricultural sector to total gross fixed investment fell from 8,3 per cent in the 1960s to 3,6 per cent in the 1990s. Other sectors in which the relative contributions of fixed investment declined notably were the transport, storage and communication sector and the sector providing community, social and personal services, the latter reflecting the strong declines in fixed investment spending by general government.

Major contributions to fixed investment in the 1990s were made by the manufacturing sector and the sector finance, insurance, real estate and business services. These two sectors were also responsible for the strongest long-term increases in their respective contributions to total fixed investment spending: manufacturing increased its contribution from 19 per cent in the 1960s to 24,9 per cent in the 1990s, while the finance sector increased its contribution from 17,2 per cent in the 1960s to 23,4 per cent in the 1990s.

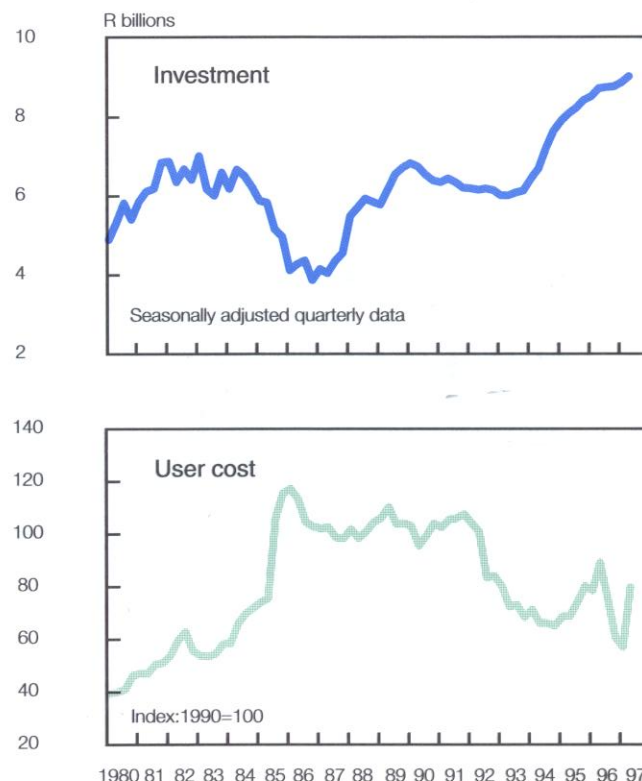
Explanatory variables of the fixed investment function

The theoretical overview in Section 2 provides a number of possible explanatory variables that can be used to explain fixed investment behaviour. The variables used in the calculation of the user cost of capital, along with other explanatory variables that were introduced into the equation explaining changes in fixed investment, are briefly described in this section. Private-sector fixed investment in this section refers to investment in the private non-agricultural sector, excluding private residential construction, fixed capital outlays by public corporations and the gold-mining industry. All the investment aggregates were measured at constant 1990 prices.

User cost of capital

The inverse relationship between real private-sector fixed investment and real user cost of capital is portrayed in Graph 3. The real user cost of capital is defined as the user cost of capital divided by the value added or output price deflator for the private sector. The sharp increase in the real user cost of capital since 1985 coincided with the rapid depreciation of the rand and the subsequent increase in inflation and interest rates, as well as increases in the effective corporate tax rate. The real user cost of capital remained at a relatively high level throughout the 1980s. When the real user cost of capital began to decline from 1992, it was soon followed by a rising level of real gross fixed investment.

Graph 3: Real private-sector fixed investment and real user cost of capital



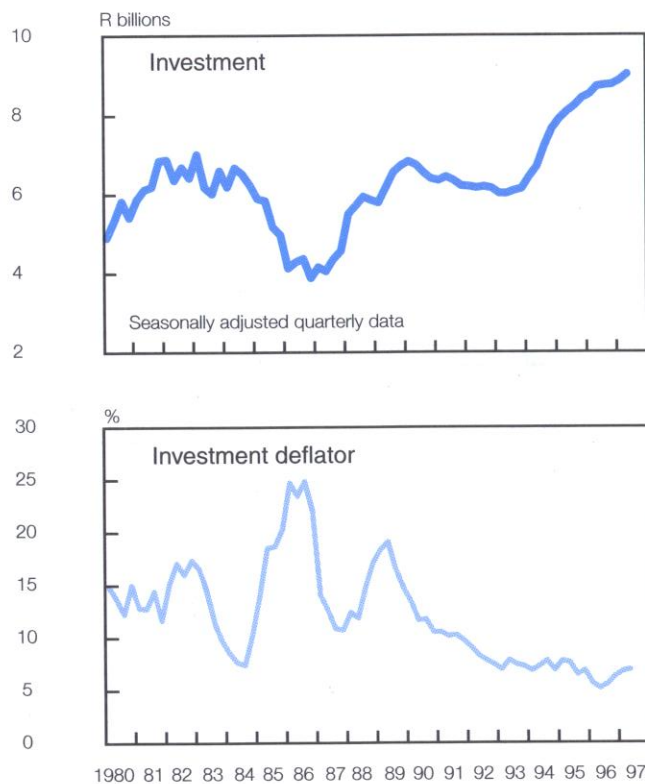
The derived price deflator for fixed investment

The derived price deflator for fixed investment was used to represent the unit price of new capital assets. Graph 4 depicts the generally inverse relationship between real fixed investment and the percentage change over four quarters in the price deflator for fixed investment. The effect of the sharp depreciation of the rand in 1984 and 1985 on the prices of capital equipment in the mid-1980s can clearly be seen from the graph. The annual increase in the average price of capital goods fell below 10 per cent in 1992 and has since then continued to slow down gradually, thereby adding to the recovery in fixed investment activity which began in 1993.

Long-term interest rates

The yield on the long-term government bonds was used as a close approximation of the long-term interest charge at which firms can borrow or lend money. In Graph 5 a five-term moving average of the yield on long-term government bonds is compared with real fixed investment in the private sector. A consistently

Graph 4: Real private-sector fixed investment and the deflator for fixed investment



inverse lagged relationship is revealed in the graph. Despite the relative high real interest rates from 1995, real fixed investment was still moving upwards.

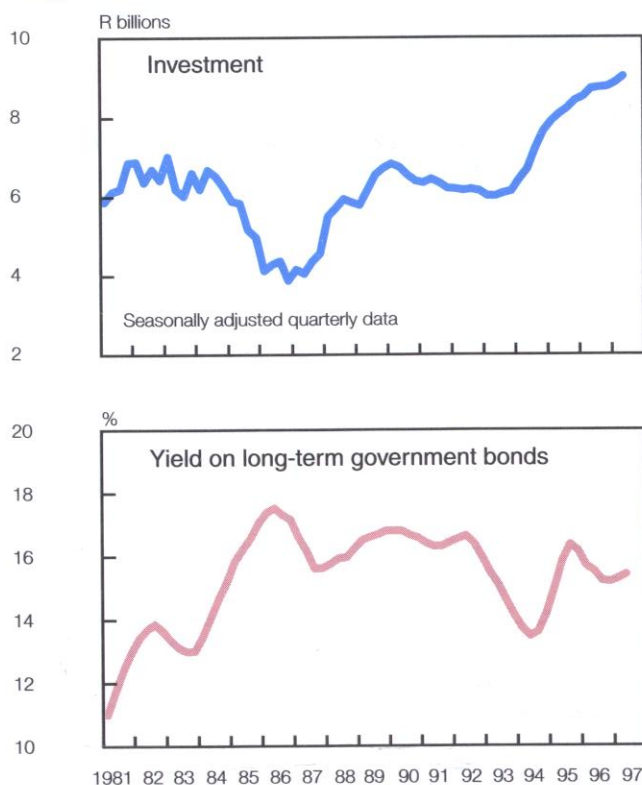
Effective corporate tax rate in the private sector

The negative effect of a high effective corporate tax rate on real fixed investment is illustrated in Graph 6. The lowering of the corporate tax rate from the early 1990s can be linked to the upward trend in fixed investment over the same period. The tax incentives and tax holidays announced in the macroeconomic strategy for growth, employment and redistribution are therefore likely to contribute to a higher level of fixed investment spending.

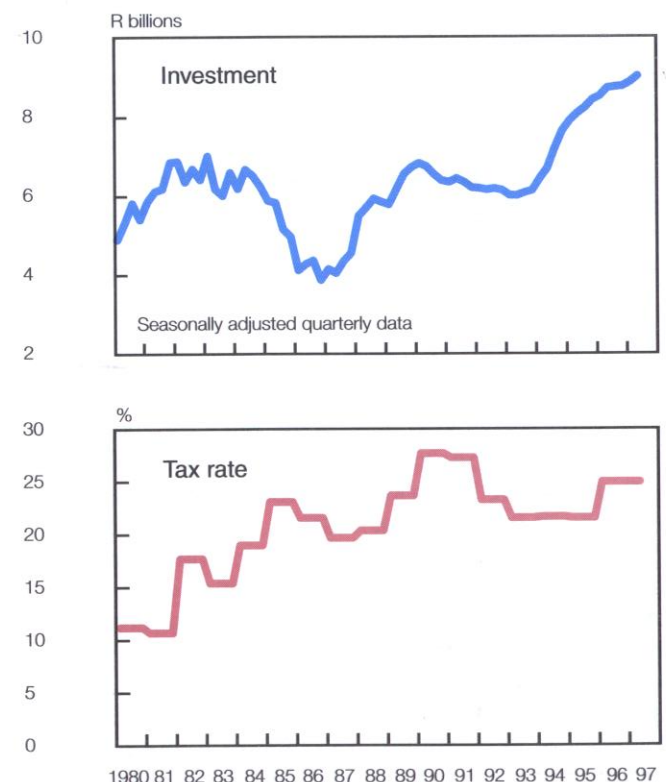
The desired capital stock

As described earlier, the desired capital stock can be approximated by the ratio between the value added in a specific sector and the user cost of capital in that sector. For the purpose of this paper, the sectors involved include all private enterprises in the economy, excluding those in the agricultural and gold-mining sectors and private residential

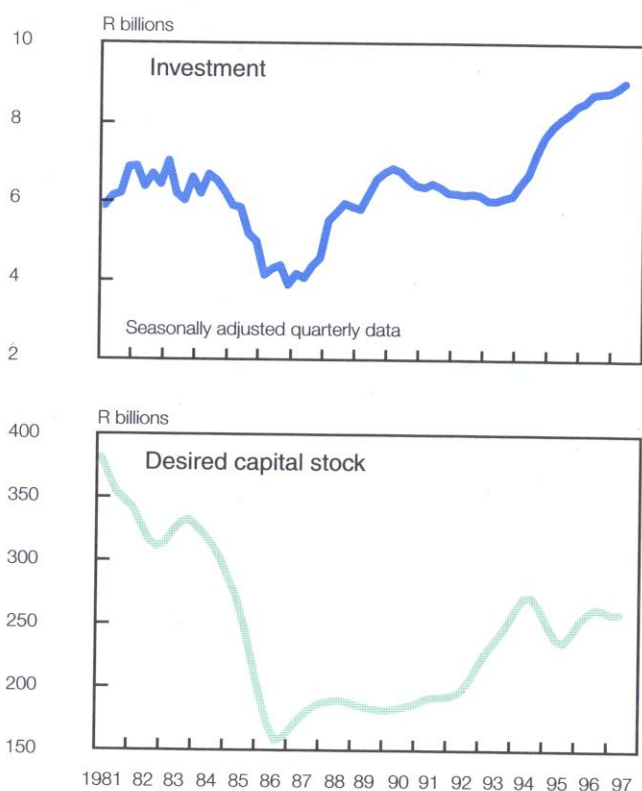
Graph 5: Real private-sector fixed investment and long-term interest rates



Graph 6: Real private-sector fixed investment and the effective corporate tax rate



Graph 7: Real private-sector fixed investment and the desired capital stock

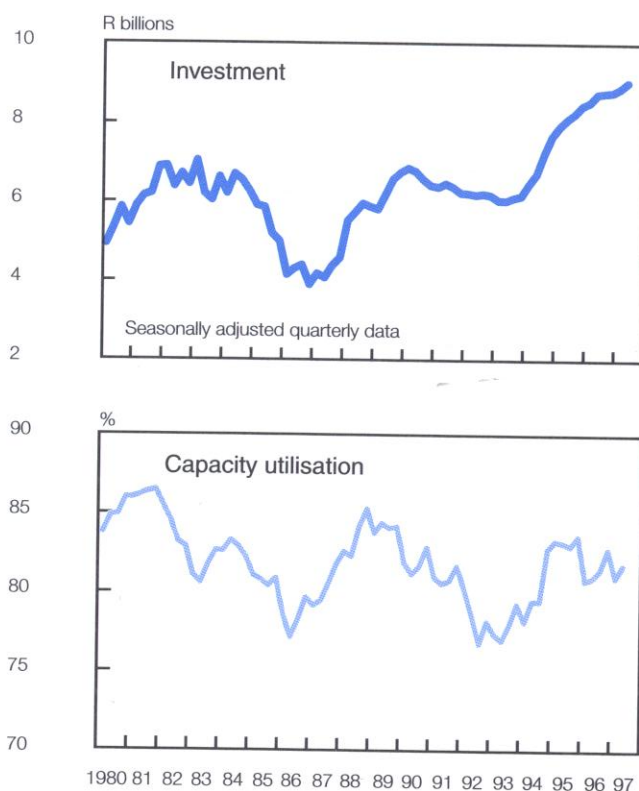


construction. Graph 7 shows a positive relationship between real fixed investment and the assumed desired capital stock. The declining tendency in the real value added by the private sector during the 1980s relative to the user cost of capital, was accompanied by a decline in private-sector fixed investment. These trend movements were broadly reversed from 1993.

The capacity utilisation rate in manufacturing

The positive relationship between the capacity utilisation rate in the manufacturing sector and real fixed investment in the private sector is shown in Graph 8. Low economic growth rates in the late 1980s and early 1990s were accompanied by declining capacity utilisation rates, indicating the existence of some spare capacity in the economy. Since 1993 the economic growth rate has turned positive and has started to accelerate while the capacity utilisation rate increased. Weaker growth in 1996 and 1997 was also reflected in lower utilisation rates. The current capacity utilisation rate of 81 per cent is still well below the 86 per cent level achieved in 1981. The recent rise in private-sector fixed investment from 1996 in the face of a low capacity utilisation rate can partly be ascribed to the replacement of relatively obsolete machinery and equipment.

Graph 8: Real private-sector fixed investment and capacity utilisation



Statistical estimation of fixed investment in the private sector

The empirical results of the estimated equation for fixed investment in the private sector are described in this section. All the econometric calculations were carried out with quarterly, seasonally adjusted data. T-values of the estimated coefficients as well as the following summary statistics are provided:

\bar{R}^2	=	Adjusted coefficient of determination;
D-W	=	Durbin-Watson d-statistic;
RHO	=	Autocorrelation coefficient.

The period of estimation is stated immediately below the summary statistics for each equation.

The equations were specified in logarithmic format in order to allow the parameter estimates to reflect elasticities. All variables used in the estimation of the equations were measured in constant 1990 prices.

The equations were estimated with cointegration techniques comprising the two-step Engle-Granger procedure (Engle and Granger, 1987). The first step involves the estimation of a long-run equation, supported by relevant economic theory. The order of

integration of the variables involved was determined. In practice few macroeconomic time series are stationary in level terms, but most are stationary in first or second differences. The Dickey-Fuller (DF) and augmented Dickey-Fuller (ADF) test statistics were used to determine stationarity. The test results indicate that all the variables tested were non-stationary. However, the test statistics based on the differences over four quarters of these variables all exceeded the critical values on a 5 per cent significant level and were thus stationary.

The order of integration of the residuals obtained from the long-term equation was determined. The test results indicated stationarity and the residual item could therefore be included in the short-term error correction model.

The second step involved the estimation of a short-term equation or error correction model. The same variables used in the long-term equation were used as explanatory variables in the error correction model (ECM) equation. The ECM equation were estimated in differences over four quarters and the coefficient of determination \bar{R}^2 was consequently lower than in the case of the long-term equation.

The following general notation is used in the specification of the equations:

- Δ : the percentage change over four quarters of a variable;
- L: the subscript indicating the long-term equation;
- S: the subscript indicating the short-term equation; and
- ln: the natural logarithm of a variable.

Gross fixed investment in the private sector¹

The following explanatory variables are included in the equation explaining changes in gross fixed investment in the private sector (GFI):

- the desired capital stock (DCS);
- the capacity utilisation rate in the manufacturing sector (CAP); and
- the capital stock in the private sector, excluding the agricultural and gold-mining sector and private residential buildings, at constant 1990 prices (CS).

The weights of the lagged desired capital stock were determined by running a separate regression of the real fixed investment on the real capital stock and the desired capital stock. The coefficients of the lagged variables

were constrained to follow a second degree polynomial with both starting and end points restricted to zero.

The weights for the lagged desired capital stock were determined as:

Period	Weights
0	0,143
1	0,229
2	0,257
3	0,229
4	0,143

Long-term equation:

$$\ln(GFI_L) = B_0 + B_1 \ln(DCS) + B_2 \ln(CAP(-1)) + B_3 \ln(CAP(-2)) + B_4 \ln(CS(-1))$$

COEFFICIENT ESTIMATE T-STATISTIC

B0	-23,37	8,69
B1	0,43	7,34
B2	1,56	3,02
B3	1,72	3,57
B4	1,01	11,37

$$\bar{R}^2 = 0,93$$

$$D.W = 2,01$$

$$RHO = 0,49$$

$$\text{Sample period} = 81:q1 - 97:q2$$

$$\text{Augmented Dickey-Fuller test on residual item} = -4,76$$

[Critical value = -4,53 (1% level)]

Short-term equation:

The dependent variable in the short-term equation is the change over four quarters in gross fixed investment (ΔGFI). All the explanatory variables in the equation resemble the change over four quarters in the variables. The explanatory variables of the long-term equation was also used to explain changes in private-sector fixed investment in the short-term equation:

$$\Delta \ln(GFI_S) = B_1 \Delta \ln(DCS) + B_2 \Delta \ln(CAP(-2)) + B_3 \Delta \ln(CS(-1)) - B_4 (\text{RESIDUAL}_L(-4))$$

COEFFICIENT ESTIMATE T-STATISTIC

B1	0,50	8,54
B2	3,05	10,29
B3	1,02	5,48
B4	-1,07	6,29

$$\bar{R}^2 = 0,78$$

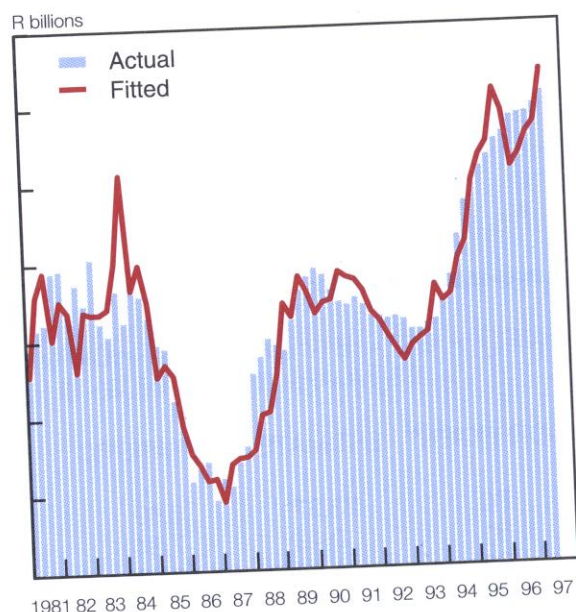
$$D.W = 1,25$$

$$\text{Sample period} = 82:q1 - 97:q2$$

The actual and fitted values of the equation for private business-sector fixed investment are compared in Graph 9.

¹ Excluding the agricultural sector, private residential construction, fixed capital outlays by public corporations and the gold-mining industry, at constant 1990 prices.

Figure 9: Actual and fitted values of fixed investment in the private sector



cluding remarks

A neoclassical theory of optimal capital accumulation described by Jorgenson proved to be a helpful model to explain private business-sector fixed investment in South Africa. The user cost of capital is central to this model because it encapsulates the impact changes of interest rates, the prices of capital goods and tax rates in a single variable. Generally speaking, the model provides a reasonably accurate description of private-sector investment behaviour in the South African economy over the period from 1980.

The equation used to describe fixed investment in the private sector in the macro-econometric model of the Reserve Bank is predominantly based on the neoclassical investment theory of Jorgenson. In addition to the desired capital stock and the user cost of capital, the capacity utilisation rate was also utilised to explain changes in fixed investment.

The importance of investment in productive assets was officially recognised when the Ministry of Finance announced the macroeconomic strategy for employment, redistribution and growth. A package of tax incentives was announced to encourage investment, including special allowances for qualifying plant and equipment which will be purchased up to September 1999, as well as

a tax holiday available to approved projects on the basis of regional location, job creation and for priority industries. The new tax incentives and the relaxation of exchange control measures will enhance South Africa's attractiveness for local and foreign investors. In so far as these incentives will reduce the user cost of capital, it will contribute to a higher rate of investment spending and the strengthening of the growth capacity of the South African economy.

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Appendix A. The firm's optimisation problem

The maximising problem can be simplified by assuming $T = 0$, that is taxes are not considered for the time being. The Lagrange equation for maximising Equation 3 can then be described as:

$$L = \int_0^{\infty} e^{-rt} R_t + \lambda_0(t)(Q - F(L, K)) + \lambda_1(t)(\dot{K} - I + \delta K) dt$$

$$\text{Let } f = e^{-rt} R_t + \lambda_0(t)(Q - F(L, K)) + \lambda_1(t)(\dot{K} - I + \delta K)$$

$$f = e^{-rt}(pQ - wL - qK) + \lambda_0(t)(Q - F(L, K)) + \lambda_1(t)(\dot{K} - I + \delta K) \quad (4)$$

The first order conditions for maximising the firm's present value are obtained when the first derivatives of the function f with respect to Q , L , I , K , \dot{K} , λ_0 , and λ_1 are equated to zero.

$$\frac{\partial f}{\partial Q} = e^{-rt}p + \lambda_0(t) = 0$$

$$\therefore \lambda_0(t) = -e^{-rt}p \quad (5a)$$

$$\frac{\partial f}{\partial L} = -e^{-rt}w - \lambda_0(t) \frac{\partial F}{\partial L} = 0$$

$$\therefore \frac{\partial F}{\partial L} = \frac{-e^{-rt}w}{\lambda_0(t)} \quad (5b)$$

$$\frac{\partial f}{\partial I} = -e^{-rt}q - \lambda_1(t) = 0$$

$$\therefore \lambda_1(t) = -e^{-rt}q \quad (5c)$$

$$\frac{\partial f}{\partial K} = -\lambda_0(t) \frac{\partial F}{\partial K} + \lambda_1(t)\delta = 0$$

According to Allen (1967: 529) it can be assumed that

$$\frac{\partial f}{\partial K} = \frac{d}{dt} \frac{\partial f}{\partial \dot{K}}$$

$$\text{thus } \frac{\partial f}{\partial K} - \frac{d}{dt} \frac{\partial f}{\partial \dot{K}} = -\lambda_0(t) \frac{\partial F}{\partial K} + \delta \lambda_1(t) -$$

$$\frac{d}{dt} \lambda_1(t) = 0 \quad (5d)$$

$$\frac{\partial f}{\partial \lambda_0} = Q - F(L, K) = 0$$

$$\therefore Q = F(L, K) \quad (5e)$$

$$\frac{\partial f}{\partial \lambda_1} = \dot{K} - I + \delta K = 0$$

$$I = \delta K + \dot{K} \quad (5f)$$

The marginal return on labour can be obtained by substituting equation 5a into equation 5b.

$$\frac{\partial f}{\partial L} = \frac{-e^{-rt}w}{\lambda_0(t)} \quad (5b)$$

$$\text{thus } \frac{\partial f}{\partial L} = \frac{-e^{-rt}w}{-e^{-rt}p}$$

$$\frac{\partial f}{\partial L} = \frac{w}{p} \quad (6)$$

The present value of the firm is therefore maximised when the marginal product of labour is equal to the ratio of the price of labour services to the product price, also referred to as the real wage.

The marginal return on capital can similarly be derived in the following way:

$$\lambda_1(t) = -e^{-rt}q \quad (5c)$$

$$\frac{d}{dt} \lambda_1(t) = e^{-rt}qr - e^{-rt} \frac{dq}{dt} \quad (7)$$

Substitute equations 5a, 5b, and 7 in equation 5d:

$$-\lambda_0(t) \frac{\partial F}{\partial K} + \delta \lambda_1(t) - \frac{d}{dt} \lambda_1(t) = 0 \quad (5d)$$

$$-e^{-rt}p \frac{\partial F}{\partial K} - \delta q e^{-rt} - (-e^{-rt} \dot{q} + e^{-rt}qr) = 0$$

$$\therefore p \frac{\partial F}{\partial K} = \delta q - \dot{q} + qr$$

$$p \frac{\partial F}{\partial K} = q(\delta + r - \frac{\dot{q}}{q})$$

$$\therefore \frac{\partial F}{\partial K} = \frac{q \left(\delta + r - \frac{\dot{q}}{q} \right)}{p}$$

$$\text{Let } c = q(\delta + r - \frac{\dot{q}}{q})$$

$$\text{then } \frac{\partial F}{\partial K} = \frac{c}{p} \quad (8)$$

where c indicates the user cost of capital.

Appendix B. The effect of tax incentives

The effect of tax incentives can be illustrated in the following way:

Suppose a firm wishes to increase its capital stock by one unit, and the cost of one unit of capital is q and that the depreciation rate of capital is δ per period over the economic life of the asset. The initial outlay of the firm is q and the replacement expenditure in each future period is δq .

The output in each period will be increased by the marginal product of capital, that is $\frac{\partial Q}{\partial K}$. If the additional unit of output can be sold at a price p , then the gross revenue in each period will be increased by $p \frac{\partial Q}{\partial K}$. The net revenue will be increased by $p \frac{\partial Q}{\partial K} - \delta q - T_i$, where T_i is the increase in direct taxes in period i . If the increase in depreciation charges for tax purposes is indicated by D_i , then the increase in direct taxes is indicated by $T_i = u(p \frac{\partial Q}{\partial K} - D_i)$, where u represents the tax rate on firms. The firm will keep on adding one unit to its existing capital stock as long as the discounted value of the increases in net revenue exceeds the price of a unit of capital. The process can be illustrated in the following way:

$$\begin{aligned} & \sum_{i=1}^{\infty} [p \frac{\partial Q}{\partial K} - \delta q - u(p \frac{\partial Q}{\partial K} - D_i)] (1+r)^{-i} \\ &= \sum_{i=1}^{\infty} [(1-u)p \frac{\partial Q}{\partial K} - \delta q + u D_i] (1+r)^{-i} \\ &= [(1-u)p \frac{\partial Q}{\partial K} - \delta q] \sum_{i=1}^{\infty} (1+r)^{-i} + u \sum_{i=1}^{\infty} D_i (1+r)^{-i} \\ & \text{but } \sum_{i=1}^{\infty} (1+r)^{-i} = \frac{1}{r} \end{aligned}$$

The firm will therefore keep on investing as long as

$$(1-u)p \frac{\partial Q}{\partial K} \frac{1}{r} - \delta q \frac{1}{r} + u \sum_{i=1}^{\infty} D_i (1+r)^{-i} > q \quad (9)$$

where r is the interest rate at which the firm may borrow or lend.

Let d_i be the tax depreciation permitted on an investment of one unit, i periods after the investment has been made. The discounted value of depreciation charges stemming from an investment of one unit is indicated by $\sum_{i=1}^{\infty} d_i (1+r)^{-i}$.

The increase in the tax depreciation charges is calculated in the following way:

Periods after investment has taken place	Tax depreciation charges
1	$q d_1$
2	$q d_2 + \delta q d_1$
3	$q d_3 + \delta q d_2 + \delta q d_1$
4	$q d_4 + \delta q d_3 + \delta q d_2 + \delta q d_1$

If the tax depreciation charges are discounted and added, the following result is obtained:

$$\begin{aligned} \sum_{i=1}^{\infty} D_i (1+r)^{-i} &= \sum_{i=1}^{\infty} q d_i (1+r)^{-i} + \sum_{i=1}^{\infty} \delta q d_i (1+r)^{-i} (1+r)^{-1} + \\ & \sum_{i=1}^{\infty} \delta q d_i (1+r)^{-i} (1+r)^{-2} + \dots \end{aligned} \quad (10)$$

Let $B = \sum_{i=1}^{\infty} d_i (1+r)^{-i}$, then

$$\begin{aligned} \sum_{i=1}^{\infty} D_i (1+r)^{-i} &= qB + \delta qB (1+r)^{-1} + \delta qB (1+r)^{-2} + \dots \\ &= qB + \delta qB \sum_{i=1}^{\infty} (1+r)^{-i} \\ &= qB + \delta qB \frac{1}{r} \end{aligned} \quad (10a)$$

Equation 10a can now be substituted into equation 9:

$$(1-u)p \frac{\partial Q}{\partial K} \frac{1}{r} - \delta q \frac{1}{r} + uqB + u\delta qB \frac{1}{r} > q$$

$$(1-u)p \frac{\partial Q}{\partial K} - \delta q + ruqB + u\delta qB > rq$$

$$(1-u)p \frac{\partial Q}{\partial K} > rq + \delta q - ruqB - u\delta qB$$

$$> q(r + \delta - ruB - u\delta B)$$

$$> q[(r + \delta) - uB(r + \delta)]$$

$$> q(r + \delta)(1 - uB)$$

$$p \frac{\partial Q}{\partial K} > q(r + \delta)(1 - uB) / (1 - u) = c \quad (11)$$

Appendix C. The discounted value of depreciation allowances

$$= \int_0^{\theta} d(t) e^{-rt} dt$$

the straight-line depreciation method is assumed, the depreciation is constant over a period of θ , the lifetime for tax purposes. The depreciation per period is $\frac{1}{\theta}$ and

$$d(t) = \frac{1}{\theta}$$

$$us B = \int_0^{\theta} \frac{1}{\theta} e^{-rt} dt$$

$$= -\frac{1}{\theta} \frac{1}{r} e^{-rt} \Big|_0^{\theta}$$

$$= -\frac{1}{r\theta} e^{-r\theta} - \left(-\frac{1}{r\theta}\right)$$

$$= \frac{1}{r\theta} (1 - e^{-r\theta})$$

Kwartaallikse ekonomiese oorsig

Inleiding

Die skielike waardevermindering van die rand in 1996 en die verskillende beleidsreaksies daarop het ekonomiese gebeure in 1997 sterk beïnvloed. Terwyl die waardevermindering voortgeduur het, het dit onsekerheid onder binnelandse en buitelandse beleggers gesaai en verwagtings van stygende inflasie aangewakker. Die swakheid van die rand het die behoefte beklemtoon vir 'n beter ewewig tussen totale vraag en aanbod in die ekonomie om beleggersvertroue te herstel en die weg na volgehoue sterk ekonomiese groei oor die lang termyn te baan.

Teen die einde van 1997 was die proses van makro-ekonomiese konsolidasie grotendeels afgehandel en was die ekonomie in 'n heelwat gesonder toestand om sterk groei te hervat as wat die geval aan die begin van 1996 was. Dit was duidelik uit:

- beter ewewig tussen totale reële bruto binnelandse besteding en die reële bruto binnelandse produk;
- die stabilisering van die jaarlikse tekort op die lopende rekening van die betalingsbalans in verhouding tot die bruto binnelandse produk;
- die toenemende erkenning dat fiskale dissipline nodig is en die vasberadenheid om die omvang van die Begrotingstekort in verhouding tot die bruto binnelandse produk te verklein;
- die toename in die netto invloeiing van kapitaal na die land in bedrae wat die groot invloeiinge van 1995 oortref het;
- 'n aansienlike oorskot op die algehele betalingsbalans en die verdere sterk opbouing van die goud- en ander buitelandse reserves tot vlakke wat aanmerklik hoër was as op enige tydstip in 1996;
- 'n geleidelike verlaging in die groei in bankkrediet-verlening aan instansies in die private sektor nadat buitengewoon hoë koerse in 1996 aangeteken is;
- 'n betekenisvolle afname in inflasie tot toenames van kwartaal tot kwartaal wat teen die einde van 1997 beter met dié van die land se belangrikste handelsvennote tred gehou het;
- aanduidings dat die groei in totale arbeidseenheids-koste teen die derde kwartaal van 1997 aan die taan was; en
- die verloop van die rand teenoor 'n mandjie van geldeenheide – dit was bestendiger en sonder die wisselvallige bewegings wat in 1996 voorgekom het.

Daarenteen het die aanpassingsproses van die afgelope twee jaar op die kort termyn ook negatiewe gevolge gehad wat onvermydelik was indien die

groeivermoë van die ekonomie op die lang termyn versterk moes word. Dit het ingesluit:

- die verlangsamings op kort termyn in die koers van reële inkomegroei; en
- dalings in die vlakke van binnelandse werkverskaffing namate produsente toenemend kostebewus geword en die doeltreffendheid van hul besighede verhoog het ten einde internasionaal meer mededingend te word.

Hierdie aanpassingsprobleme op die kort termyn is vererger deur die onsekerhede weens die ekonomiese en finansiële probleme wat sekere Oos-Asiatiese ekonomieë gedurende die afgelope jaar ondervind het, en deur die skerp daling in die goudprys. Ekonomiese bedrywigheid het gevolglik stoom verloor en die groei in die reële bruto binnelandse produk het van net meer as 3 persent in 1996 tot slegs 1½ persent in 1997 afgeneem. In die tweede helfte van 1997 het die groei in produksie teen 'n jaarakoers selfs verder verlangsaam en was dit gedurende die laaste ses maande minder as 1 persent.

Die verlangsamings in produksiegroei gedurende die tweede helfte van 1997 het oor 'n wye spektrum van ekonomiese bedrywigheide voorgekom, maar was die opvallendste in die fabriekswese en handelsektore. Vervaardigers is blootgestel aan sterker mededinging in 'n toenemend oper ekonomie. Tesame met binnelandse kostedruk, stadige toenames in produksiepryse en swak groei in die totale vraag, is winsgrense in so 'n mate verklein dat die reële toegevoegde waarde van die fabriekswese in die tweede en derde kwartaal van 1997 afgeneem het. Die afwaartse druk op die reële inkomes van huishoudings en die verswakking van verbruikersvertroue het bygedra tot die daling in die reële toegevoegde waarde van die handelsektor. Hoewel die groei in die mynbousektor – wat deur dalende internasionale grondstofpryse geteister is – en dié in die dienstesektor nog positief was, het dit ook teen die einde van 1997 verlangsaam.

Die verlangsamings in private verbruiksbesteding wat reeds in die tweede helfte van 1996 duidelik geword het, het in 1997 voortgeduur. Dalende vlakke van werkverskaffing en verhoogde werksonekerheid het verbruikersvertroue verswak. Hoewel die groei in die besteding van verbruikers in 1997 aan bande gelê is, het huishoudings steeds verkies om sekere minimum bestedingsvlakke te handhaaf deur gebruik te maak van hul opgehoopde besparing. Saam met 'n verdere toename in huishoudings se skuld las het dit tot gevolg gehad dat die besparingskoers van huishoudings en die nasionale besparingskoers albei afgeneem het tot 'n vlak wat ontoereikend is vir die finansiering van vaste investering teen 'n tempo wat met vinnige werkskepping versoenbaar is.

Reële verbruiksbesteding deur die owerheid het in 1997 teen 'n buitengewoon vinnige koers gegroei en sodoende die ontsparingskoers van die algemene owerheid verhoog en die reeds baie lae nasionale besparingskoers selfs verder afgedruk. Reële bruto binnelandse vaste investering het in die tweede helfte van 1997 bly toeneem, maar teen 'n baie laer koers as in die voorgaande drie jaar. Vaste investering deur die openbare sektor was hoofsaaklik verantwoordelik vir hierdie verlangsamings in vaste-investeringsbedrywighede, terwyl maatskappye in die private sektor hul koers van kapitaalvorming teen die einde van 1997 matig verhoog het.

Soos reeds gemeld, het die stappe wat in reaksie op die oënskynlike swakheid van die algehele betalingsbalans gedurende 1996 gedoen is, die gewenste uitwerking van 'n groter ewewig tussen totale vraag en aanbod bewerkstellig. Die tekort op die lopende rekening van die betalingsbalans gedurende 1997 in geheel het egter nie veel van dié in 1996 verskil nie. Gedurende 1997 het 'n versnelling in die totale binnelandse vraag in die vierde kwartaal, 'n afname in die goudprys en internasionale grondstofpryse, en 'n afname in die verhouding van invoerpryse tot die pryse van binnelands vervaardigde goedere egter 'n groter kwartaalike seisoensaangepaste tekort op die lopende rekening tot gevolg gehad. Hoewel die tekort in verhouding tot die bruto binnelandse produk ook verruim het, was dit in die vierde kwartaal van 1997 steeds binne volhoubare perke. Die totale produksie het teen die einde van 1997 swak op die versterking in binnelandse vraag gereageer. Dit het die invoerpenetrasieverhouding skerp laat styg.

Die tekort op die lopende rekening in 1997 het gepaard gegaan met 'n skerp toename in die netto invloeiing van kapitaal wat met die versterking van die internasionale reserwes gehelp het. Invoerdekking het tot ongeveer 2½ maande se invoer van goedere en dienste verbeter. Die netto invloeiing van internasionale kapitaal was meesal in die vorm van portefeuljebeleggings, wat nietemin nie van 'n spekulatiewe aard hoef te wees nie. 'n Aansienlike deel van die invloeiing was verwant aan uitgiftes van Eurorand-effekte met redelike lang looptye en bateruilooreenkomste tussen binnelandse en buitelandse beleggers, en het sodoende die aard van langertermynbelegging aangeneem. Buitelandse regstreekse beleggers het egter steeds ietwat huiwerig voorgekom om hulself te verbind tot groot bedrae langtermynkapitaal, waarskynlik as gevolg van onsekerheid oor toekomstige wisselkoersbewegings, 'n wanverhouding tussen produktiwiteit en vergoedingsvlakke en besorgdheid oor gewelddadige misdaad.

Die opbou van internasionale reserwes gedurende 1997 het gehelp om die waarde van die rand te bestendig ná die skerp waardevermindering in die vorige jaar. Die rand het ook taamlik vinnig herstel nadat die gevolge van die probleme in Asië gedurende Oktober 1997 na die Suid-Afrikaanse effektemarkte uitgekring het – dit het die indruk gelaat dat die aansteeklikheid van die valutakrisis

in Asië van korte duur was. Hierdie bestendiging van die rand is behaal sonder amptelike pogings om die rand op enige bepaalde vlak te beskerm.

Verbruikersprysinflasie neig nou stewig afwaarts nadat dit in 1996 skerp toegeneem het as gevolg van die waardevermindering van die rand. Produksieprysinflasie het net so indrukwekkend afgeneem en die jongste inflasiekoerse van kwartaal tot kwartaal was nie heeltemal uit pas met die inflasieniging in Suid-Afrika se belangrikste handelsvennootlande nie. Vooruitsigte vir laer inflasie het klaarblyklik ook verbeter, gegewe die nuutgevonde bestendigheid van die wisselkoers van die rand en die verlangsamings in die groei van krediet aan die private sektor. Die oopmaak van die ekonomie het produsente voorts toenemend ontmoedig om pryse te verhoog ten einde mededingend met buitelandse leweransiers te bly.

Werknemersvergoeding het op 'n betreklik hoë vlak gebly. Enige toename in die huidige groei van nominale vergoeding per werker kon moeilik versoen word met die monetêre beleidsoogmerk van omvattende prysbestendigheid. Werkverskaffing in die sektore van die ekonomie buite die landbou het in die eerste drie kwartale van 1997 bly afneem. Dit was steeds 'n weerspieëling van die herstrukturering en rasionalisering van die werkswyses van produsente wat onder binnelandse kostedruk, aggressiewe buitelandse mededinging en swak internasionale grondstofpryse gebuk gegaan het. Daarbenewens het die verwydering van uitvoersubsidies binnelandse uitvoerders ook gedwing om aan te pas en die grootte van hul arbeidsmag te verklein.

Die Reserwebank se riglyne vir groei in M3 is onveranderd gelaat op 6 tot 10 persent vir 1997. Die boonste perk van die riglyngebied is deurgaans aansienlik oorskry. Dit het tot onlangs nog saamgeval met die volgehoue sterk groei in kredietverlening aan die private sektor deur monetêre instellings. Teen die derde kwartaal van 1997 het dit onteenseglik duidelik geword dat die groei in krediet aan die private sektor afgeneem het. 'n "Hersiene" of "gesuiwerde" definisie van krediet aan die private sektor, wat onder andere kredietverlening deur banke aan plaaslike owerhede uitsluit, het aangedui dat die verlangsamings in die groei in krediet aan die private sektor nog indrukwekkender was as wat deur die konvensionele definisie aangedui is. Hierdie verlangsamings in die groei in krediet aan die private sektor was oor die algemeen 'n weerspieëling van gedempte ekonomiese bedrywigheid, dalende inflasie en swakker besteding deur huishoudings.

Die afname in die groei in krediet aan die private sektor, die verbetering in die algehele betalingsbalans, stygende goud- en ander buitelandse reserwes en die verslapping van inflasiedruk, het die weg gebaan vir 'n verlaging van een persentasiepunt in Bankkoers in Oktober 1997. Die uitleenkoerse van banke het met weinig vertraging op die verlaging in Bankkoers gereageer, maar die reaksie van geldmarkrentekoerse was ietwat gedemp. Dit was hoofsaaklik aan twee faktore te

wyde: eerstens was die verlaging in Bankkoers reeds in die heersende markbepaalde koerse verdiskonteer, en tweedens het die afname in die netto buitelandse bates van die Reserwebank na die finansiële probleme in Asië die likiditeitekort in die binnelandse geldmark vergroot en opwaartse druk op korttermynrentekoerse geplaas. Geldmarkkoerse het nietemin in Januarie 1998 begin afneem namate die uitwerking van die probleme in Asië verflou en handelstoestande in die geld- en valutamarkte bestendig het.

Die hoofkenmerke van ontwikkelings in die finansiële mark in 1997 was die positiewe sentiment wat in die effektemark geheers het, sterk groeiende omsette in al die markte vir sekuriteite, die groter onbestendigheid in die aandelemark en die groter deelname deur nie-inwoners in die Suid-Afrikaanse markte. Die opbrengskoers op effekte het met bykans 250 basispunte vanaf die einde van 1996 tot die begin van 1998 afgeneem, wat die groeiende verwagting van 'n verslapping van monetêre beleid, 'n bestendige afname in inflasie en hewige nie-inwoneraankope weerspieël het. Aandelepryse, wat sedert die begin van 1997 sterk gestyg het as gevolg van stewige verdienstegroei en in afwagting van 'n afname in amptelike rentekoerse, het laat in Oktober baie onbestendig geword toe hulle skerp teruggesak het as gevolg van die verlies aan internasionale beleggersvertroue in opkomende markte. Nie-inwoners was baie bedrywiger in die Suid-Afrikaanse effektemarkte as voorheen. Hoë opbrengskoerse, die verslapping van inflasiedruk wat vooruitsigte vir 'n afwaartse beweging van die opbrengskoerskromme verbeter het, en die gewaarwording dat valutarisiko's verminder het, het nie-inwonerbeleggers weer na die binnelandse effektemarkte gelok.

Die bedrywigheid in die binnelandse primêre effektemark is oorheers deur uitgiftes van instellings in die openbare sektor. As gevolg van die hoë vlak van likiditeit in die maatskappysektor en die hoë koste van geleende fondse, het maatskappye in die private sektor verkies om kapitaal deur middel van die uitgifte van aandele te bekom. Maatskappye in die private sektor het hulle ook daarvan weerhou om groot bedrae in die internasionale kapitaalmarkte te bekom, maar 'n aantal organisasies in die openbare sektor het uitgiftes van effekte in die Eurorandmark verkies.

Die algehele leningsbehoefte van die openbare sektor as persentasie van die bruto binnelandse produk het in die eerste drie kwartale van die fiskale jaar 1997/98 toegeneem in vergelyking met die vorige fiskale jaar. Daarenteen is die tekort voor lenings en skuldaflossing op die Skatkisrekening as persentasie van die bruto binnelandse produk van die eerste drie kwartale van die fiskale jaar 1996/97 tot die eerste drie kwartale van 1997/98 verminder. Die deel van die begrote tekort wat in die eerste tien maande van die huidige fiskale jaar opgeneem is, was nogtans betekenisvol hoër as gedurende enige van die vorige vyf fiskale jare. Dit was

hoofsaaklik as gevolg van sommige provinsiale regerings wat hul begrotingstoewysings oorskry het, wat ook tot aansienlike toenames in hul skuldlas teenoor die banksektor gelei het.

Die eerste "Verklaring oor Mediumtermyn-Begrotingsbeleid" is op 2 Desember 1997 vrygestel en het algemene bestedings- en inkomsteplanne vir die volgende drie fiskale jare uiteengesit. 'n Sleutelement van die Verklaring is die "Beleidsraamwerk vir Besteding oor die Medium Termyn" wat 'n proses van rollende begrotings oor drie jaar ingelei het. Daar sal in die vervolg van staatsdepartemente verwag word om hul beleidsvoorstelle binne begrotingstoewysings oor drie jaar te formuleer. Die Verklaring het die mikpunte ter vermindering van die begrotingstekort behou, soos aangedui deur die *Makro-ekonomiese Strategie vir Groei, Werkverskaffing en Herverdeling*. In die Verklaring word ook onderneem om die groei in nominale owerheidsbesteding in bedwang te hou. Indien toekomstige ekonomiese groei nie aan heersende verwagtings voldoen nie, sal bestedingsgroei tot laer as die geprojekteerde bestedingsvlakke beperk word.

Binnelandse ekonomiese ontwikkelings

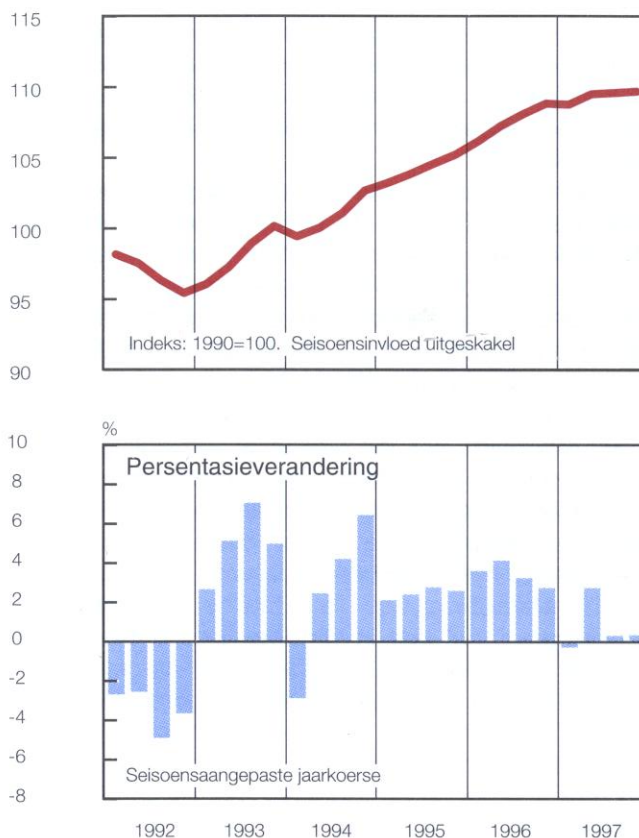
Binnelandse produksie

Ekonomiese bedrywigheid het in 1997 verlangsam en swakker groei in die totale binnelandse vraag weerspieël. Die *reële bruto binnelandse produk* wat in 1996 met meer as 3 persent gestyg het, het in 1997 met net 1½ persent toegeneem. Hierdie verlangsaming in bedrywigheid was veral in die tweede helfte van 1997 waarneembaar toe seisoensaangepaste groeikoerse van kwartaal tot kwartaal van slegs ½ persent teen 'n jaar koers aangeteken is. Dalings in fabrieksproduksie en in die reële produksie van die handelssektor gedurende die tweede helfte van 1997 was hoofsaaklik vir hierdie verlangsaming in ekonomiese groei verantwoordelik.

Die *reële toegevoegde waarde van die landbou-sektor* het in 1997 met 1 persent gedaal met 'n meer normale seisoen na die buitengewoon goeie oeste in 1996. Landbouproduksie het ook in die vierde kwartaal van 1997 effens gedaal as gevolg van 'n daling in koringproduksie wat die toenames in die reële inkome van veeteelt- en tuinbouprodusente teengewerk het.

Reële produksie *buite die landbousektor* het van 'n gemiddelde jaar koers van kwartaal tot kwartaal van ongeveer 2½ persent in die eerste helfte van 1997 tot sowat ½ persent in die tweede helfte van die jaar verlangsam. *Mynbouproduksie* het in die vierde kwartaal van 1997 teen 'n jaar koers van slegs 1½ persent toegeneem. Dit is minder as die hoë koers van 5 persent in die derde kwartaal en hoofsaaklik die gevolg van 'n volgehoue daling in die goudprys en internasionale

Reële bruto binnelandse produk



Tabel 1. Reële bruto binnelandse produk

Persentasieverandering teen seisoensaangepaste jaarkoerse

Sektore	1996					1997				
	1e kw	2e kw	3e kw	4e kw	Jaar	1e kw	2e kw	3e kw	4e kw	Jaar
Primêre sektore.....	26	16½	15½	2½	9	-13½	2	3	1	½
Landbou.....	99	65	59½	4	29	-31	-5	-½	0	-1
Mynbou.....	-½	-5	-7½	1	-1½	1½	7	5	1½	1
Sekondêre sektore	½	3	½	2½	1	6	6	-½	0	3
Fabriekswese	-1	3	-1	2	½	7	6½	-1	-½	3½
Tersiêre sektore	1	3	2	3	3	-½	1	0	½	1
Handel.....	-2½	5½	0	3	3½	-2	2	-1½	-½	½
Vervoer, opberging en kommunikasie	1	2	3	2½	3	½	4½	3	2½	2½
Finansiële en ander dienste....	3½	3	4	4	3½	2	2	1	1½	2½
Totaal	3½	4	3	3	3	-½	2½	½	½	1½
Nie-landbousektore	½	2	½	2½	2	2	3½	½	½	2

grondstofpryse wat die vooruitsigte van hierdie sektor vertroebel het.

Die reële toegevoegde waarde van die *fabriekswese* het teen koerse van 1 persent in die derde kwartaal van 1997 en ½ persent in die vierde kwartaal gedaal. Hierdie dalings het verband gehou met 'n afplatting in die groei van die buitelandse vraag na Suid-Afrikaans vervaardigde goedere, strawwe mededinging wat invoermededingende nywerhede in die gesig moes staar, die algemeen swakker binnelandse finale vraag en die voorwaartse skakelingseffekte van die laer landbouproduksie. 'n Skielike sterk versnelling in die groei van fabrieksproduksie tot jaarkoerse van 7 persent in die eerste kwartaal van 1997 en 6½ persent in die tweede kwartaal het nietemin daarvoor gesorg dat die reële toegevoegde waarde van die fabriekswesesektor in 1997 in die geheel ongeveer 3½ persent hoër as in 1996 was.

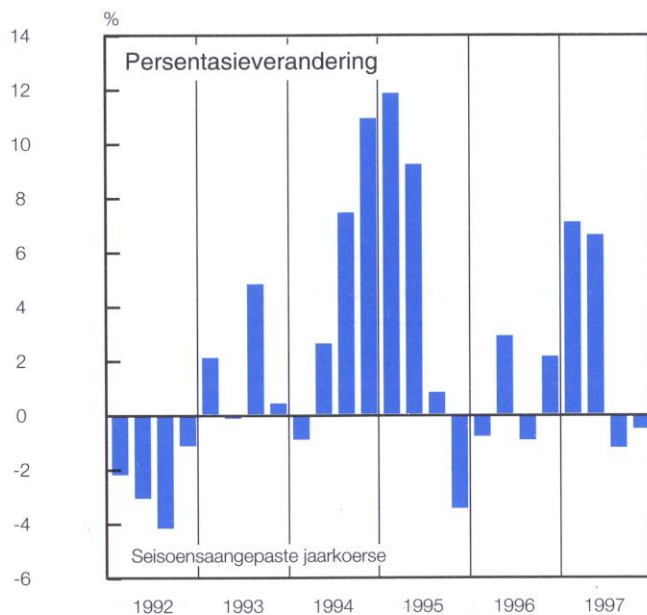
Die groei in die produksie van die sektor wat *elektrisiteit, gas en water* voorsien, het van 4 persent en 6 persent in die eerste twee kwartale van 1997 tot ½ persent in die derde kwartaal en 1 persent in die vierde kwartaal verlangsaam. Die reële toegevoegde waarde van die *konstruksiesektor* het terselfdertyd ook verlangsaam namate die vraag in die huismark verswak en investering deur ondernemings in nuwe geboue afgeplat het. Tesame het hierdie verlangsamings tot dalende produksie teen 'n jaarkoerse van ongeveer ½ persent in die *sekondêre sektore* van die ekonomie in die laaste twee kwartale van 1997 bygedra.

Die insinking in die verkope van nuwe motorvoertuie in die vierde kwartaal het veroorsaak dat die reële

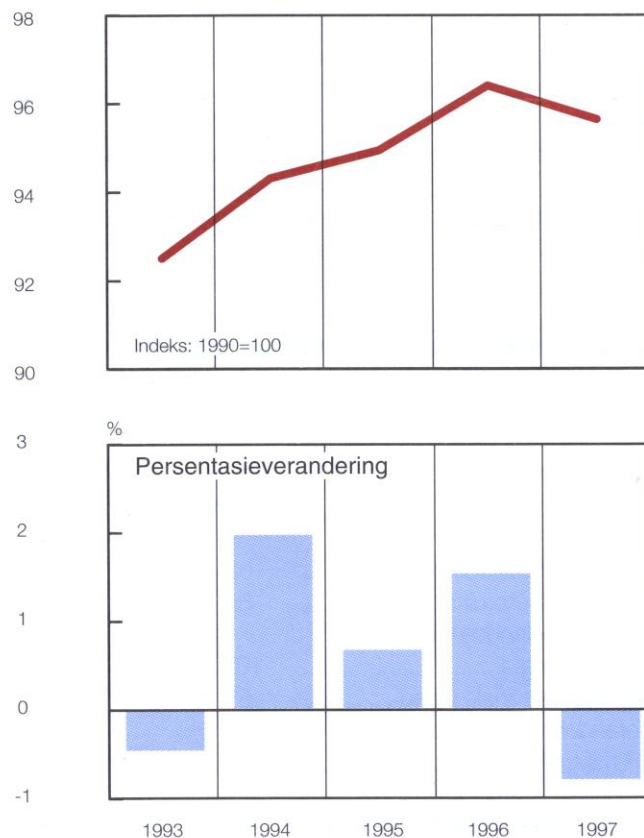
produksie in die motorhandel in die vierde kwartaal van 1997 skerp gedaal het. Dit is deels deur klein toenames in die reële toegevoegde waarde van die klein- en groothandel en verversings- en akkommodasiesektore teengewerk. As gevolg hiervan, het die produksiehoeveelhede van die *handelsektor* in die vierde kwartaal van 1997 teen 'n jaarkoerse van ½ persent gedaal vergeleke met 1½ persent in die derde kwartaal.

Hoewel die toename in die reële toegevoegde waarde van die sektor *vervoer, opberging en kommunikasie* effens laer as die koerse van 4½ persent en 3 persent in die voorafgaande twee kwartale was, is dit aangehelp deur die uitbreiding van die binnelandse telekommunikasienetwerk en die stygende invoerhoeveelhede, en was dit in die vierde kwartaal van 1997 nog steeds op 'n stewige vlak van 2½ persent. In die *finansiële dienste* sektor het die groei in produksie effens versnel van 'n jaarkoerse van 1 persent in die derde kwartaal van 1997 tot 1½ persent in die vierde kwartaal – as gevolg van die onstuimigheid in die finansiële markte van 'n aantal Asiatiese ekonomieë het die omsette in die markte vir buitelandse valuta en effekte gedurende die vierde kwartaal sterk toegeneem.

Reële toegevoegde waarde van fabriekswese



Reële bruto nasionale produk per capita



Die groei in die reële binnelandse produksie in 1997 is effens afgewater deur die toename in die netto faktor-betalings aan die res van die wêreld en 'n verswakking in die ruilvoet. Netto faktorbetalings aan nie-inwoners het toegeneem as gevolg van hoër rente- en dividend-betalings wat op die skerp styging in portefeuljekapitaalvloeiinge na Suid-Afrika gevolg het, terwyl die ruilvoet hoofsaaklik as gevolg van die dalende goudprys en swak internasionale grondstofpryse verswak het. Die reële *bruto nasionale produk* het in 1997 gevolglik met bykans 1½ persent toegeneem, dit wil sê minder as die groei in die reële bruto binnelandse produk en aansienlik laer as die koers van 3½ persent wat in 1996 aangeteken is. Die reële bruto nasionale produk per hoof van die bevolking het gevolglik in 1997 met ongeveer 1 persent gedaal, vergeleke met 'n gemiddelde jaarlikse groei van ongeveer 1½ persent gedurende die voorafgaande drie kalender-jare.

Binnelandse besteding

Die groei van kwartaal tot kwartaal in die totale *reële bruto binnelandse besteding* het gedurende 1997 gewissel tussen 'n daling teen 'n jaarkoers van 2 persent in die eerste kwartaal van die jaar en toenames teen jaarkoerse van 5½ persent in die tweede kwartaal en 4½ persent in die vierde kwartaal van die jaar. As die kalenderjaartotale egter vergelyk word, het die groei in die reële bruto binnelandse besteding van 2½ persent in 1996 tot 1½ persent in 1997 gedaal. In die vierde kwartaal van 1997 het die groei in besteding sterk versnel as gevolg van 'n skerp toename in die reële verbruiks-besteding deur die algemene owerheid en 'n kleiner daling in reële voorraadinvestering as in die derde kwartaal.

Die groei in *reële private verbruiksbesteding* het van 'n jaarkoers van 1½ persent in die tweede kwartaal van 1997 tot 1 persent in die derde kwartaal en ½ persent in

die vierde kwartaal verlangsaam. Dit het die groter-wordende afname in die groei van kwartaal tot kwartaal in besteding aan nie-duursame goedere en groter absolute dalings in die besteding aan duursame goedere weerspieël. In 1997 in die geheel het reële private verbruiksbesteding teen 'n koers van 2 persent toegeneem, vergeleke met groei van 4 persent in 1996.

Die reële besteding van huishoudings aan *duursame goedere* het in die vierde kwartaal van 1997 teen 'n jaarkoers van 16½ persent gedaal en hierdie soort besteding deur huishoudings sodoende verminder tot 'n vlak wat 6 persent laer as die van die vorige jaar was. Uitsonderlike skerp dalings is in twee bestedingsklasse aangeteken, naamlik vervoertoerusting en meubels en huishoudelike toebehore. Besteding aan duursame goedere is oor die algemeen makliker om uit te stel en het daarom 'n verloop wat meer saamval met die alge-

Tabel 3. Reële private verbruiksbesteding

Persentasieverandering teen seisoensaangepaste jaarkoerse

Komponente	1997				
	1e kw	2e kw	3e kw	4e kw	Jaar
Duursame goedere	-3	-2	-2½	-16½	½
Semi-duursame goedere.....	4	1	-½	2½	3
Nie-duursame goedere.....	3	2½	1½	1	2½
Dienste.....	-2	2½	3	5	1
Totaal	1	1½	1	½	2

Tabel 2. Reële bruto binnelandse besteding

Persentasieverandering teen seisoensaangepaste jaarkoerse

Komponente	1996					1997				
	1e kw	2e kw	3e kw	4e kw	Jaar	1e kw	2e kw	3e kw	4e kw	Jaar
Private verbruiksbesteding	3½	4	3	3	4	1	1½	1	½	2
Owerheidsverbruiksbesteding	6½	11	9	3½	6	6	7½	9	11½	7
Bruto binnelandse vaste investering.....	10½	6½	5	5	8	2	3	3	1½	3½
Binnelandse finale vraag	5½	6	4½	3½	5	2½	3	3	3	3½
Verandering in voorrade (R miljard)*	1,2	6,7	2,4	0,4	2,7	-2,7	-2,3	-4,4	-3,0	-3,1
Bruto binnelandse besteding ...	-1	15½	-5	2	2½	-2	5½	0	4½	1½

* Konstante 1990-pryse teen jaarkoerse

mene konjunktuerneiging as besteding aan nie-duursame goedere en dienste. In die huidige fase van ekonomiese konsolidasie is huishoudings ook geneig om besteding aan duursame goedere in 'n groter mate in te kort as besteding aan nie-duursame en semi-duursame goedere en dienste.

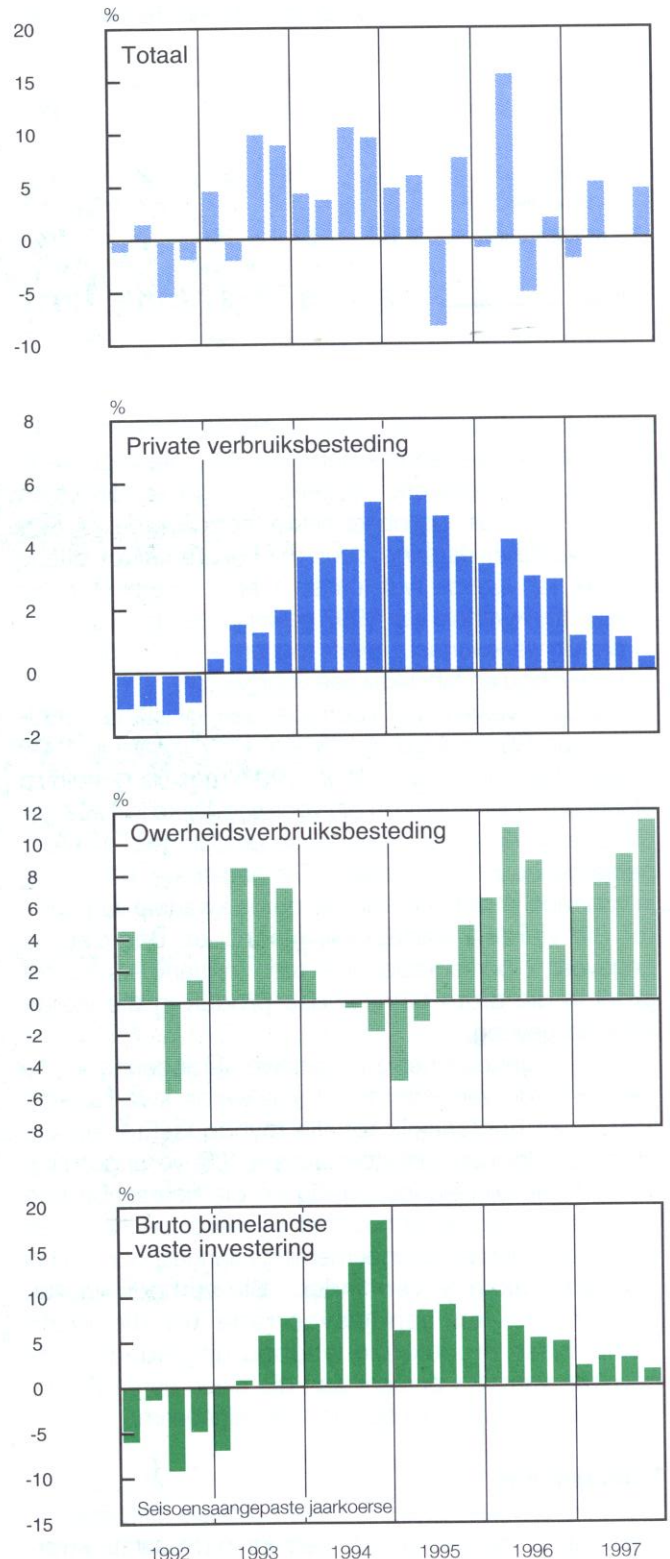
Die verlansaming in die besteding van huishoudings gedurende 1997 kan onder andere toegeskryf word aan die stadiger groei in die reële persoonlike beskikbare inkome. Dit was grotendeels die gevolg van dalende werkverskaffingsvlakke, 'n verlansaming in die bruto inkome van boere, hoër belastingvorderings vanaf huishoudings en 'n versnelling in die deflator vir private verbruiksbesteding tot 'n vlak wat min of meer gelyk was aan die koers van vergoedingskikkings. Verbruikersvertroue kan ook teen die einde van 1997 getaan het namate die skuldverhoudings van huishoudings toeneem en eiendoms- en aandelewaardes geneig het om te stagneer of daal. Dit het die netto welvaart van huishoudings oënskynlik verlaag en die middele verminder wat huishoudings gedink het tot hul beskikking is..

Die toename van kwartaal tot kwartaal in die totale *reële verbruiksbesteding deur die algemene owerheid* het van 9 persent teen 'n jaarkoers in die derde kwartaal van 1997 tot 11½ persent in die vierde kwartaal versnel. Dit het die groei van jaar tot jaar in 1997 tot 7 persent laat toeneem teenoor die 6 persent in 1996. Die sterk toename in die reële verbruiksbesteding deur die algemene owerheid was die netto gevolg van 'n skielike toename in reële besteding aan intermediêre goedere en dienste, met die uitsondering van werknemersdienste, en 'n klein daling in die reële vergoeding van werknemers. Al drie owerheidsvlakke het tot die hoë groeikoerse bygedra, maar besteding deur die provinsiale regerings het aansienlik meer as dié van die sentrale regering en plaaslike owerhede gestyg. Die verhouding van algemene owerheidsverbruiksbesteding tot die bruto binnelandse produk het gevolglik van 20½ persent in 1996 tot 21½ persent in 1997 toegeneem.

Die groei van jaar tot jaar in die *reële bruto binnelandse vaste investering* het van 8 persent in 1996 tot 3½ persent in 1997 gedaal. Hierdie verlansaming kon in die kapitaalbesteding van al drie institusionele sektore waargeneem word: in die private sektor het dit van 6 persent in 1996 tot 3 persent in 1997 gedaal, vir openbare korporasies het dit van 10½ persent tot 5½ persent afgeneem en vir openbare owerhede van 15 persent tot 4 persent.

Die groei van kwartaal tot kwartaal in die reële bruto binnelandse vaste investering het van 3 persent in die tweede en derde kwartaal van 1997 tot 1½ persent in die vierde kwartaal verlangsaam. Die lae koers van toename in die vierde kwartaal van 1997 is hoofsaaklik deur 'n daling in *vaste kapitaalvorming deur die openbare sektor* (openbare owerhede en openbare korporasies gesamentlik) teen 'n seisoensaangepaste jaarkoers van 1½ persent veroorsaak. Hoër reële kapitaalbesteding deur Telkom, Eskom en die algemene owerheid is meer as ten

Verandering in reële bruto binnelandse finale vraag



Tabel 4. Reële bruto binnelandse vaste investering
 Persentasieverandering teen seisoensaangepaste jaarkoerse

Institusionele sektore	1997				
	1e kw	2e kw	3e kw	4e kw	Jaar
Private sektor.....	1	2	2½	3	3
Openbare sektor ..	6	5	4½	-1½	4½
Openbare					
owerhede.....	3	1½	2	-2	4
Openbare korporasies	8½	8	6½	-1	5½
Totaal	2	3	3	1½	3½

volle deur dalings in vaste kapitaalbesteding deur Transnet en sakeondernemings van die algemene owerheid teengewerk. In teenstelling met die vaste investering in die openbare sektor het die groei in *reële bruto vaste investering deur die private sektor* effens versnel van koerse wat tussen 1 en 2½ persent in die eerste drie kwartale van 1997 gewissel het, tot 3 persent in die vierde kwartaal. Sterk toenames het in die landbou, mynbou en fabriekswese voorgekom.

Nadat *investering in voorrade* teen konstante 1990-pryse van R6,3 miljard in 1995 tot R2,7 miljard in 1996 gedaal het, het voorrade in 1997 met R3,1 miljard afgeneem. Die afname in die voorraadvlakke in 1997 het die groei in die bruto binnelandse produk met 'n volle 2 persentasiepunte verminder. Die negatiewe investering in voorrade is nietemin van die derde kwartaal van 1997 tot die vierde kwartaal verminder, en daardeur is ongeveer 2 persentasiepunte teen 'n jaarkoers tot die groei in die bruto binnelandse produk in die vierde kwartaal gevoeg.

Die volgehoue netto negatiewe verandering in die reële waarde van voorrade in die vierde kwartaal van 1997 was hoofsaaklik tot die mynbousektor en die groot- en kleinhandelsektore beperk. Die verlengsaming in die finale binnelandse vraag en die heersende hoë koste om voorrade te hou, het vervaardigers sowel as groot- en kleinhandelondernemings aangespoor om hul voorraadvlakke te verminder. Die verhouding van nywerheids- en handelsvoorrade tot die bruto binnelandse produk, die landbou uitgesonder, het gevolglik van 18½ persent aan die einde van 1996 tot 17½ persent aan die einde van 1997 afgeneem.

Faktorinkome

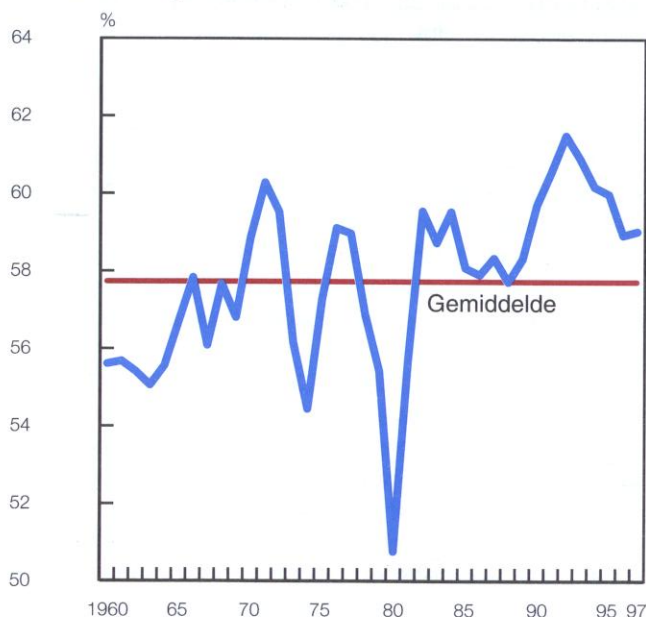
Die groei van jaar tot jaar in *totale nominale faktorinkome* teen markpryse het van 10½ persent in die eerste kwartaal van 1997 tot 9½ persent in die vierde kwartaal verlangsaam. Insgelyks het die groei in faktorinkome vir die kalenderjaar van 12 persent in 1996 tot 9½ persent in 1997 verlangsaam. Hierdie verlengsamings het uit laer

groei van sowel die bedryfsurpluse van sakeondernemings as die vergoeding van werknemers gespruit.

Die groei oor vier kwartale in die totale nominale bruto bedryfsurpluse van sakeondernemings het van 10½ persent in die eerste kwartaal van 1997 tot 8½ persent in die vierde kwartaal afgeneem. Hierdie verlengsaming in die groei van die bruto bedryfsurplus kon oor 'n wye verskeidenheid van sektore waargeneem word, wat van die landbou tot die mynbou en die handel gewissel het. In die landbousektor is die bruto inkomste van boere nadelig deur dalings in die mielie- en koringoeste geraak. Die mynbousektor is deur dalende internasionale grondstofpryse beïnvloed, wat ook op die bedryfswinste van die belangrikste grondstofgebaseerde vervaardigingsbedrywe 'n invloed gehad het. In die fabriekswese het produksiekoste oor die algemeen ook vinniger as produksiepryse gestyg, wat afwaartse druk op totale winsgrense geplaas het.

Die koers van toename oor vier kwartale in die totale vergoeding van werknemers het van 10 persent in die eerste kwartaal van 1997 tot 9 persent in die vierde kwartaal verlangsaam, meer as gevolg van dalings in werkverskaffingsvlakke as 'n afplatting in die groei van die nominale vergoeding van werknemers. Ondanks die stadiger groei in die totale vergoeding van werknemers, het die aandeel van arbeid in die waarde van totale produksie in 1997 op 59 persent gebly – dieselfde as in 1996. Die langtermyn gemiddelde van hierdie verhouding word op 57½ persent bereken.

Arbeidsvergoeding as persentasie van bruto binnelandse produk



Binnelandse besparing

Die verhouding van bruto binnelandse besparing tot die bruto binnelandse produk het in die eerste twee kwartale van 1997 rondom 'n vlak van ongeveer 15½ persent gewissel, maar daarna skerp gedaal tot 14½ persent in die daaropvolgende twee kwartale. Dit het die binnelandse besparingskoers van 17 persent van die bruto binnelandse produk in 1996 tot 15 persent in 1997 verlaag.

Die netto ontsparing deur die algemene owerheid as persentasie van die bruto binnelandse produk het van gemiddeld 3½ persent in die eerste drie kwartale van 1997 tot byna 4 persent in die vierde kwartaal toegeneem – 'n weerspieëling van die groeiende wanbalans tussen die lopende inkomme en uitgawe van die algemene owerheid. 'n Verswakking in die netto besparing van die maatskappysektor en 'n duideliker daling in die netto besparing van huishoudings het die netto besparingskoers van die private sektor in 1997 tot 5½ persent van die bruto binnelandse produk verlaag, vergeleke met 7 persent in 1996. Die besparingskoers van huishoudings het in die vierde kwartaal van 1997 trouens beswaarlik 'n positiewe waarde getoon.

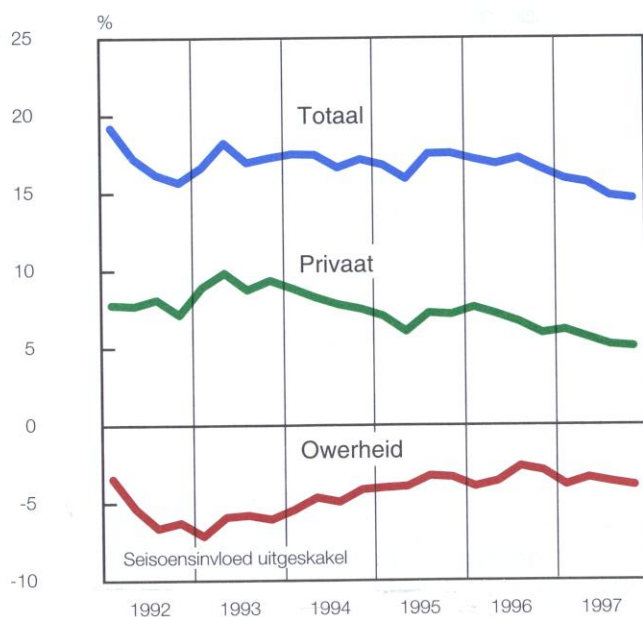
Skuldverpligtings van private huishoudings het van 66 persent van beskikbare inkomme in 1996 tot 68 persent in 1997 toegeneem met die gevolg dat die verhouding van besparing deur huishoudings tot persoonlike beskikbare inkomme oor dieselfde tydperk van 2 persent tot 1 persent gedaal het. Omdat verbruikers geneig is om verbruik eweredig oor tyd te versprei, is onbestendige veran-

derings in die besparingsverhouding dikwels die gevolg van kortstondige wisselings in inkomme. Die onlangse daling in die besparingskoers van huishoudings kon dus 'n onverwagse verlangsaming in die groei van persoonlike beskikbare inkomme eerder as 'n blywende toename in die verbruiksgeneigdheid weerspieël het.

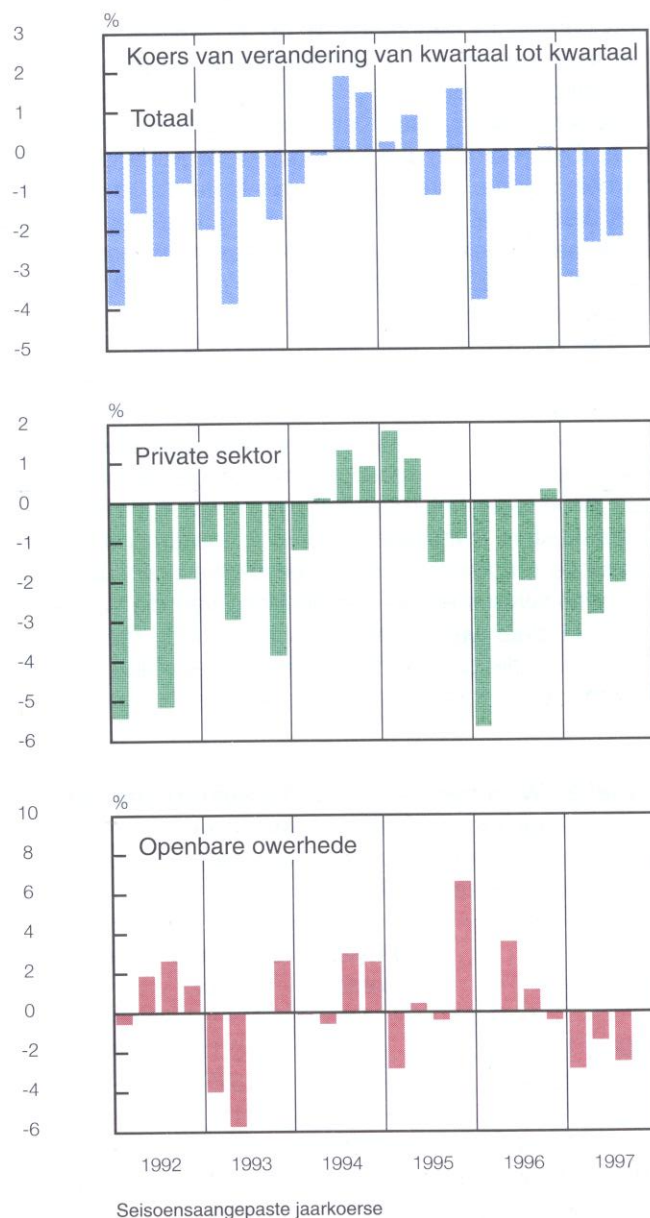
Werkverskaffing

As gevolg van verdere afdankings in die private sektor en pogings om die werkerskorps van die openbare sektor te verminder, het totale werkverskaffing in die formele sektore van die ekonomie buite die landbou in die eerste

Bruto binnelandse besparing as persentasie van bruto binnelandse produk



Werkverskaffing buite die landbou



drie kwartale van 1997 bly daal. Werkverskaffing in die sektore van die ekonomie buite die landbou wat gereeld aangeteken word, het teen seisoensaangesuiwerde jaarkoerse van 3,3 persent in die eerste kwartaal van 1997, 2,4 persent in die tweede kwartaal en 2,2 persent in die derde kwartaal afgeneem. Werkverskaffing in die formele sektore van die ekonomie buite die landbou het van die einde van 1996 tot aan die einde van die derde kwartaal van 1997 met 104 000 werkgeleenthede verminder.

Die private en openbare sektor het in elk van die eerste drie kwartale van 1997 werkverliese beleef. Verliese in werkverskaffing in die private sektor gedurende die derde kwartaal het byna oor die volle spektrum van bedrywigheid voorgekom, maar was die duidelikste in die fabriekswese, konstruksiewese, elektrisiteits-opwekking, motorhandel, die versekeringsbedryf en goudmynbou. Die afnames in werkverskaffing in die openbare sektor gedurende die derde kwartaal van 1997 het voorgekom op sowel nasionale as provinsiale regeringsvlak en ook onder die geledere van die landboubemarkingsrade wat in die proses van ontbinding was. Die afname in aangetekende werkverskaffing in die formele sektore van die ekonomie buite die landbou is ook weerspieël in 'n toename van 3,1 persent in die totale aantal geregistreerde werkloos in die eerste agt maande van 1997, vergeleke met die ooreenstemmende tydperk van 1996.

Die gebrek aan voldoende werkskepping in Suid-Afrika weerspieël deels die gevolge van die blootstelling van 'n ekonomie wat nie ten volle mededingend is nie aan volwaardige internasionale mededinging. Die uitskakeling van uitvoeraansporingskemas en die vermindering van invoerregte het maatskappye met hoë produksiekostestrukture kwesbaar gelaat in 'n toenemend mededingende omgewing, met die gevolglike rasionalisering van werkswyse en die vermindering van die werkerskorps in plaas van ander kostebesparende maatreëls. Dit is moontlik dat hierdie en ander toepaslike aangeleenthede gedurende 1998 tydens 'n Presidensiële

Werkeberaad bespreek sal word met die oogmerk om maniere te vind om die arbeidsabsorberingsvermoë van die ekonomie te verhoog.

Die *Wet op Basiese Diensvoorwaardes* is vroeg in November 1997 deur die Parlement aangeneem. Die oogmerk met hierdie wet is om beskerming te bied vir werkers in sektore waar geen bedingingsmeganismes bestaan nie, om oormatige werksure te voorkom, kinderarbeid te verbied en aangeleenthede betreffende geslagsdiskriminasie aan te spreek. Die hoofbepalings van die wet sluit die volgende in:

- 'n 45-uur werkswaek met die oog daarop om dit progressief tot 40 ure te verminder;
- 'n verhoging in die oortydkoers van tyd plus 'n derde tot tyd plus die helfte;
- 'n minimum van vier maande kraamverlof;
- drie weke jaarlikse verlof en ses weke betaalde siekteverlof elke 36 maande; en
- 'n minimum werksouderdom van 15 jaar, of indien die werk onvanpas is vir 'n kind van daardie ouderdom, dan 18 jaar.

Die wet maak voorsiening vir 'n sekere mate van buigsaamheid sodat die bepalinge deur kollektiewe bedinging aangepas kan word, mits basiese regte nie geskend word nie.

Arbeidskoste en produktiwiteit

Hoewel dit wil voorkom asof daar 'n toenemende bewuswording is dat verhogings in vergoeding aan produktiwiteitsgroei gekoppel moet wees, is daar weinig bewys van 'n besliste verlangsaam in die groei van nominale arbeidsvergoeding. Ondanks die dalende vlakke van *werkverskaffing in die formele sektore van die ekonomie buite die landbou*, het die nominale vergoeding per werker in hierdie sektore teen 'n koers van 10,0 persent in 1996 toegeneem, en teen koerse van verandering oor vier kwartale wat wissel tussen 9,3 persent en 10,9 persent in die eerste drie kwartale van 1997. Sowel die private as openbare sektore van die ekonomie het volgehoue sterk groei in nominale vergoeding getoon (sien Tabel 6). In die eerste drie kwartale van 1997 was loonskikkings effens hoër as die gepaardgaande verbruikersprysinflasie, wat 'n aanduiding is van 'n verhoging oor daardie tydperk in die reële koopkrag van diegene wat teen vergoeding werksaam was.

Die koers van toename oor vier kwartale in die nominale vergoeding per werker het die groei in uitsetpryse, soos dit deur die prysdeflator vir die bruto binnelandse produk buite die landbou weerspieël word, bly oorskry. Die verhouding van vergoeding per werker tot uitsetpryse, oftewel die *inflasie-aangepaste vergoeding per werker*, het in 1995 met 0,8 persent en in 1996 met 0,2 persent gestyg, maar toe versnel tot koerse van toename oor vier kwartale van 0,9 persent in die eerste kwartaal van 1997, 2,8 persent in die tweede kwartaal en 1,3 persent in die derde kwartaal.

Tabel 5. Werkverskaffing in die sektore van die ekonomie buite die landbou

Persentasieverandering oor een kwartaal teen seisoensaangepaste jaarkoerse

	Private sektor	Openbare sektor	Totaal
1996: 1e kw	-5,7	-0,1	-3,8
2e kw	-3,3	3,6	-1,0
3e kw	-2,0	1,1	-0,9
4e kw	0,3	-0,4	0,0
1997: 1e kw	-3,5	-2,9	-3,3
2e kw	-2,9	-1,4	-2,4
3e kw	-2,1	-2,5	-2,2

Tabel 6. Nominale vergoeding per werker

Persentasieverandering oor een jaar

	Private sektor	Openbare sektor	Alle werknemers
1996: 1e kw	12,7	8,5	11,3
2e kw	10,2	9,7	10,2
3e kw	11,0	8,3	10,2
4e kw	8,7	7,4	8,4
Jaar	10,6	8,5	10,0
1997: 1e kw	7,9	11,7	9,4
2e kw	10,3	11,8	10,9
3e kw	9,4	9,1	9,3

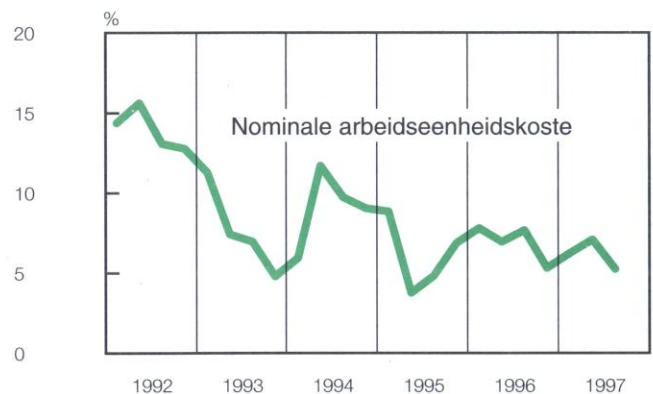
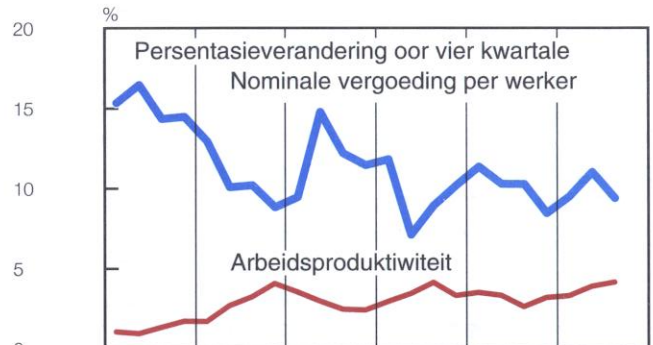
Sterk groei in produktiwiteit het verhinder dat die oormatige groei in nominale arbeidskoste vergeleke met die groei in uitsetpryse druk op die bedryfsurplusse van werkgewers uitoefen. Die rasionalisering van werks wyses wat telkens tot die vermindering in werkverskaffingsgetalle gelei het, en 'n afname van 64 persent in die getal mandae wat verloor is as gevolg van stakings en werkstopsettings in 1997, het bygedra om produktiwiteit (gemeet as uitset per werker in die sektore van die ekonomie buite die landbou) met 3,0 persent in 1996 te verhoog en met 'n gemiddelde koers van 3,6 persent in die eerste drie kwartale van 1997 vergeleke met die ooreenstemmende tydperk van die vorige jaar.

Omdat produktiwiteitstoenames nie ten volle met stygings in die gemiddelde vergoeding per werker tred gehou het nie, het nominale arbeidseenheidskoste bly groei en sodoende opwaartse druk op die produksiepryse van binnelands geproduseerde goedere en dienste geplaas. Dit wil egter voorkom asof hierdie druk gedurende 1997 ietwat stoom verloor het – die toename oor een jaar in nominale arbeidseenheidskoste het van 6,8

Tabel 7. Arbeidskoste en produktiwiteit

Persentasieverandering oor een jaar

	Inflasie-aangepaste vergoeding per werker	Arbeidsproduktiwiteit	Nominale arbeidseenheidskoste
1996: 1e kw	2,1	3,3	7,7
2e kw	0,5	3,1	6,8
3e kw	0,2	2,4	7,6
4e kw	-1,8	3,0	5,2
Jaar	0,2	3,0	6,8
1997: 1e kw	0,9	3,1	6,1
2e kw	2,8	3,7	7,0
3e kw	1,3	3,9	5,1

Arbeidsproduktiwiteit, vergoeding en arbeidseenheidskoste buite die landbou

persent in 1996 tot 6,1 persent in die eerste drie kwartale van 1997 afgeneem.

Dit sal moeilik wees om enige toename in die huidige groeikoers van nominale vergoeding per werker met die oorhoofse monetêre beleidsoogmerk van verdere dalings in die koers van produksie- en verbruikersprysinflasie te versoen. Hoewel hoër vergoedingsgroei moontlik deur dalende winsgrense en swakker bedryfsurplusse geabsorbeer kan word, kan so 'n proses nie onbepaald voortduur nie. Die belangrikste aspek van die proses van koste-absorbering oor die afgelope paar jaar, was die besnoeiing van die werkerskorps om hoër produktiwiteitsvlakke te bewerkstellig. Werkloosheid het gevolglik toegeneem namate werkverskaffing afgeneem en die bevolking wat in staat is om te werk, bly groei het.

Inflasie

Inflasie in verbruikerspryse, soos gemeet aan die koers van toename van jaar tot jaar in die *omvattende verbruikersprysindeks*, het van 7,4 persent in 1996 tot 8,6 persent in 1997 gestyg. Hierdie oënskynlik hoër koers van inflasie in 1997 is ietwat misleidend aangesien dit eerder die gevolg was van 'n statistiese oordrag van stygende inflasie in die tweede helfte van 1996 vanweë

die verswakking van die wisselkoers van die rand in daardie jaar, as wat dit die gevolg van 'n herlewing van sterk inflasiedruk was.

Die omvattende verbruikersprysinflasie, soos gemeet oor tydperke van twaalf maande, het van 9,9 persent in April 1997 tot 6,1 persent in Desember 1997 afgeneem. Hierdie besliste afwaartse neiging in die toename in verbruikerspryse in 1997 is aangehelp deur nie-herhalende gebeurtenisse soos die heelwat stadiger koers van toename in voedselpryse en die verlaging in verbandkoerse en -paaielemente na die verlaging in Bankkoerse in Oktober.

Na die uitskakeling van die uitwerking van hierdie eenmalige gebeurtenisse uit die verbruikersprysindeks was die afname in die *onderliggende inflasie* (dit wil sê die verandering in die omvattende verbruikersprysindeks, met uitsluiting van die pryse van voedsel en nie-alkoholiese drank, huiseienaarskoste en die belasting op toegevoegde waarde) ietwat minder indrukwekkend as die afname in die omvattende verbruikersprysinflasie. Onderliggende inflasie het van 9,7 persent in Februarie 1997 tot 7,3 persent in Desember afgeneem, dit wil sê 'n afname van meer as een persentasiepunt minder as die omvattende verbruikersprysinflasie. Onderliggende inflasie soos gemeet van kwartaal tot kwartaal teen 'n seisoens-aangepaste jaarkoers, het teweens van 6,7 persent in die derde kwartaal van 1997 tot 8,1 persent in die vierde kwartaal toegeneem.

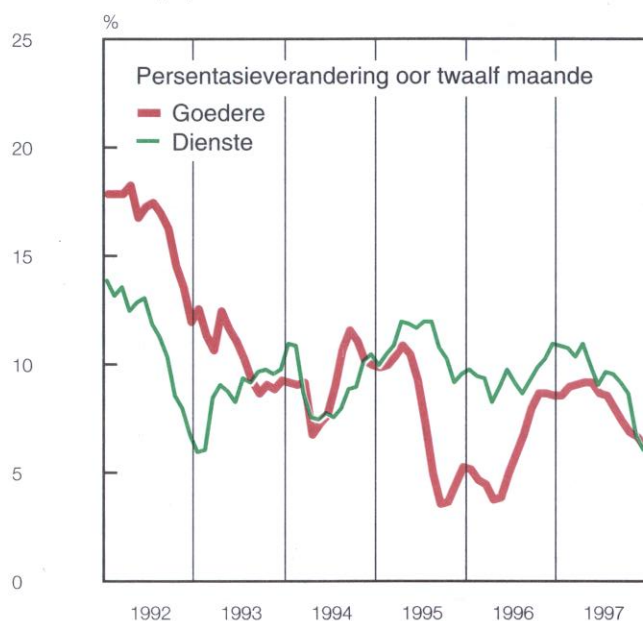
Tabel 8. Verbruikersprysinflasie

Persentasieverandering van kwartaal tot kwartaal teen jaarkoerse

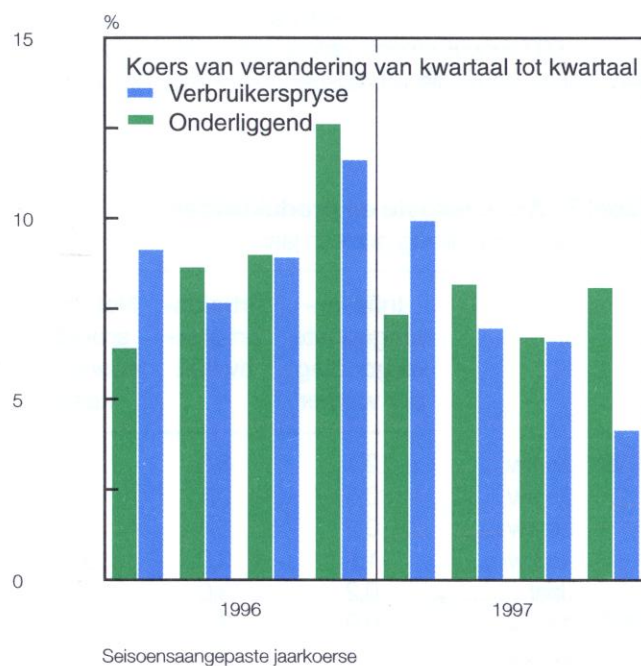
	Onderliggende inflasie	Omvattende inflasie
1996: 1e kw	6,4	9,1
2e kw	8,6	7,6
3e kw	9,0	8,9
4e kw	12,6	11,6
1997: 1e kw	7,3	9,9
2e kw	8,1	7,0
3e kw	6,7	6,6
4e kw	8,1	4,1

Die verandering in die pryse van *verbruikersdienste*, wat gewoonlik geneig is om heelwat stadiger te reageer op veranderinge in produktiwiteit en monetêre omstandighede as die pryse van *verbruikersgoedere*, het deels vanweë die verlaging van verbandkoerse, aansienlik meer as die verandering in die pryse van verbruikersgoedere afgeneem. Die toename oor twaalf maande in die pryse van verbruikersdienste het van April tot Desember 1997 met 4,9 persentasiepunte gedaal teenoor 'n afname van 3,0 persentasiepunte in die inflasie in verbruikersgoedere. Die toename oor twaalf maande in die pryse van verbruikersdienste het trouens in Desember 1997 vir die

Verbruikerspryse



Inflasie



eerste keer sedert November 1994 onder die ooreenstemmende toename in die pryse van verbruikersgoedere gedaal.

Ander aanwysers van prysinflasie het die siening dat inflasie stewig afwaarts neig, bevestig. Die verandering van jaar tot jaar in die *omvattende produksieprysindeks* het van 9,6 persent in 1995 tot 6,9 persent in 1996 en 7,1 persent in 1997 afgeneem. Die omvattende produksieprysinflasie, soos gemeet oor tydperke van twaalf maande, het van 9,6 persent in Maart 1997 tot 4,0 persent in Desember gedaal – die laagste koers van toename sedert September 1971. Die pryse van binnelands geproduseerde goedere het op hul beurt in Desember 1997 met slegs 4,9 persent gestyg, teenoor 9,7 persent so kort gelede as April 1997. Die aansienlike vordering wat gedurende 1997 met die vermindering van binnelandse produksieprysinflasie gemaak is, kan aan matige toenames, en in sommige gevalle selfs afnames, in die pryse van verwerkte voedsel, landbou-, bosbou- en visserijprodukte, elektrisiteit, gas en water, alkoholiese drank en tabak, en tekstiele en klerasie toegeskryf word.

Die relatiewe sterkte en bestendigheid van die rand gedurende 1997 het 'n betekenisvolle bydrae gelewer tot die verlaging in inflasie in die tweede helfte van daardie jaar. Die verandering oor twaalf maande in die pryse van

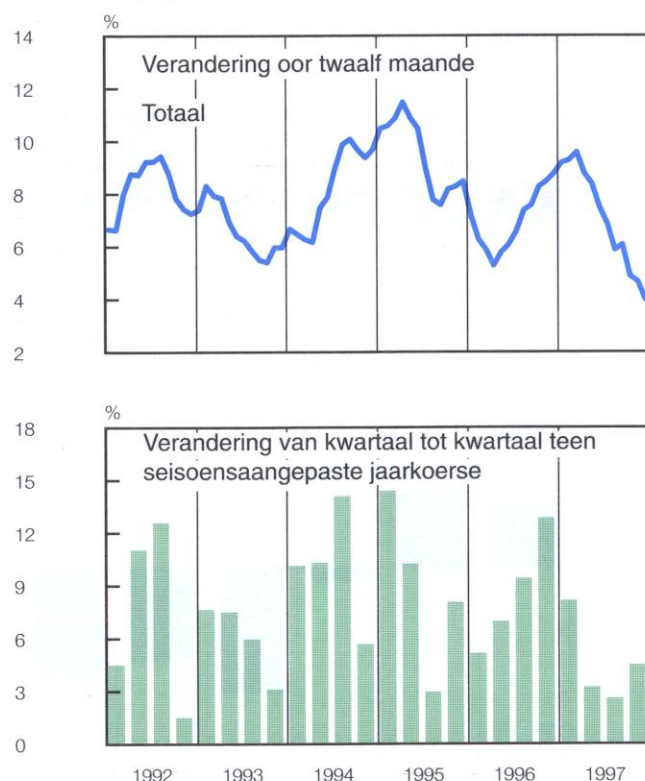
Tabel 9. Produksieprysindeks

Persentasieverandering oor twaalf maande

	Binnelands geproduseerde goedere	Ingevoerde goedere	Alle goedere
1997: Jan	9,2	9,6	9,2
Feb	9,2	10,3	9,3
Mrt	9,5	10,1	9,6
Apr	9,7	5,4	8,8
Mei	8,9	6,4	8,4
Jun	8,5	4,1	7,5
Jul	7,5	3,9	6,9
Aug	6,5	2,8	5,9
Sep	6,5	3,8	6,1
Okt	5,7	1,3	4,9
Nov	5,3	2,0	4,7
Des	4,9	0,7	4,0

ingevoerde goedere het van 10,3 persent in Februarie 1997 tot 0,7 persent in Desember gedaal namate die prysverhogende uitwerking van die waardevermindering van die rand in 1996 afgeneem het. Hierdie afwaartse beweging in ingevoerde prysinflasie is aangehelp deur 'n afname in die wêreldprys van ru-olie, wat daartoe gelei het dat die prys in rand van ingevoerde olie van R110 per vat in Desember 1996 tot R86 per vat in Desember 1997 gedaal het.

Produksiepryse



Buitelandse handel en betalings

Lopende rekening

Die *tekort op die lopende rekening* van die betalingsbalans in 1997 in die geheel het maar min van dié van die voorafgaande jaar verskil. Die tekort het van R7,3 miljard in 1996 tot R8,8 miljard in 1997 toegeneem en as 'n persentasie van die bruto binnelandse produk effens gestyg van 1,3 persent in 1996 tot 1,5 persent in 1997. Hierdie konsolidasie van die relatiewe grootte van die tekort op die lopende rekening was hoofsaaklik 'n gevolg van die beter balans tussen totale vraag en aanbod in die binnelandse ekonomie.

Gedurende 1997 het die *kwartaallikse tekort* op die lopende rekening van die betalingsbalans (seisoensaangepas en teen 'n jaarkoers) vanaf die eerste helfte tot die tweede helfte van die jaar merkbaar verswak. Op 'n kwartaallikse grondslag het die tekort op die lopende rekening van R5,3 miljard in die tweede kwartaal van 1997 tot R9,0 miljard in die derde kwartaal en R14,1 miljard in die vierde kwartaal vergroot. In verhouding tot die bruto binnelandse produk was die tekort op die lopende rekening in die vierde kwartaal van 1997 vermoedelik steeds binne volhoubare perke, naamlik gelykstaande aan 2,3 persent van die bruto binnelandse produk.

Die vergroting van die tekort op die lopende rekening in die vierde kwartaal van 1997 was merendeels die gevolg van 'n skerp toename in die waarde van die goedere-invoer. Hierdie toename is slegs gedeeltelik deur 'n klein toename in die totale waarde van die goedere- en netto gouduitvoer geneutraliseer. Netto betalings vir dienste en oordragte aan die res van die wêreld het ook in

die vierde kwartaal van 1997 toegeneem en sodoende die verswakking in die lopende rekening vererger.

Die skerp opwaartse beweging in die waarde van die invoer was naby verwant aan die betreklik hoë grensinvoergeneigdheid van die Suid-Afrikaanse ekonomie. Toenames in reële bruto binnelandse besteding lei normaalweg tot meer-as-eweredige toenames in die hoeveelheid goedere ingevoer. Dit het weer in die vierde kwartaal van 1997 gebeur toe die volume van die goedere-invoer met 3 persent gestyg het, wat 'n jaarlikse groeiakoers van 13 persent impliseer. Dit het die waarde van die goedere-invoer in die vierde kwartaal van 1997 tot ongeveer 5 persent hoër as die waarde in die derde kwartaal laat styg. Toenames het in die meeste invoer-

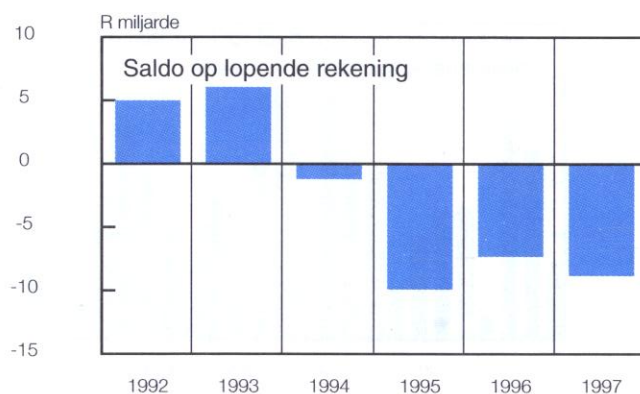
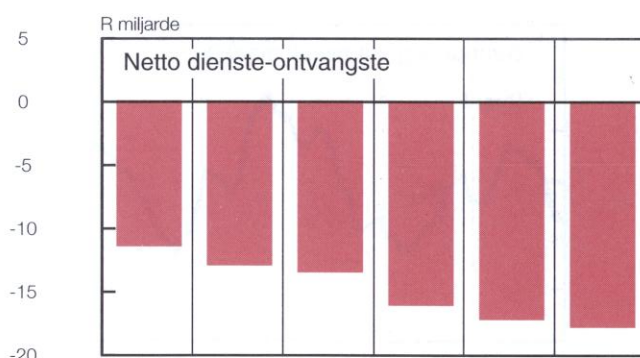
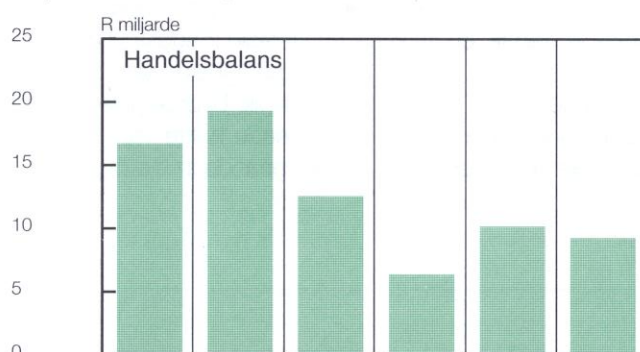
Tabel 10. Lopende rekening van die betalingsbalans

Seisoensaangepaste jaarkoerse

R miljarde

	1996				1997	
	Jaar	1e kw	2e kw	3e kw	4e kw	Jaar
Goedere-uitvoer.....	101,4	107,7	115,9	115,3	117,6	114,1
Netto goud-uitvoer.....	26,3	26,8	24,7	26,0	25,7	25,8
Goedere-invoer.....	-117,7	-123,6	-128,6	-132,1	-139,0	-130,8
Netto dienste- en oordrag-betalings...	-17,3	-17,7	-17,3	-18,2	-18,4	-17,9
Saldo op lopende rekening...	-7,3	-6,8	-5,3	-9,0	-14,1	-8,8

Lopende rekening



kategorieë buiten landbouprodukte voorgekom. Die invoer van veral voertuie en vervoertoerusting, masjinerie en elektriese toerusting en ru-olie het in die vierde kwartaal van 1997 sterk toegeneem.

Afgesien van die invloed van 'n taamlike sterk binne-landse finale vraag in die vierde kwartaal van 1997, is die volume van die goedere-invoer ook aangewakker deur 'n afname in die koers van toename in die pryse van ingevoerde goedere in verhouding tot die pryse van binne-lands vervaardigde goedere. Die gesamentlike uitwerking van hierdie twee kragte het Suid-Afrika se invoerpenetrasieverhouding (dit wil sê die verhouding van die reële goedere-invoer tot reële bruto binnelandse besteding) van 27 persent in die eerste kwartaal van 1997 tot 'n algehele hoogtepunt van 28½ persent in die vierde kwartaal laat styg. Vir die jaar in die geheel het die fisiese omvang van die goedere-invoer met 5 persent gestyg, wat die invoerpenetrasieverhouding van 26½ persent in 1996 tot 27½ persent in 1997 laat toeneem het.

Die waarde van *goedere-uitvoer* (seisoensaangepas en teen 'n jaarkoers), wat in die derde kwartaal van 1997 ietwat teruggesak het, het in die vierde kwartaal van 1997 met 2 persent tot R117,6 miljard toegeneem. Nadat die *hoeveelheid goedere uitgevoer* in die derde kwartaal van 1997 effens gedaal het, het dit in die vierde kwartaal grotendeels onveranderd gebly. Die volume van die uitvoer van vervaardigde goedere, wat oor die afgelope paar jaar deurlopend toegeneem het, het in die derde kwartaal van 1997 oor die algemeen onveranderd gebly en in die vierde kwartaal afgeneem. Merkbare dalings is

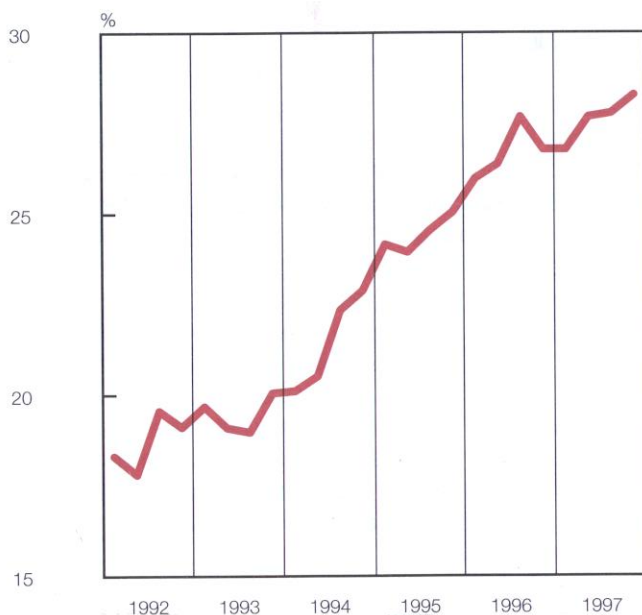
in die vierde kwartaal van 1997 in die uitvoer van chemiese en tekstielprodukte aangeteken.

Die *pryse in rand van Suid-Afrikaanse uitvoergoedere* het egter in die vierde kwartaal van 1997 matig met ongeveer 1 persent gestyg, grotendeels as gevolg van 'n daling in die nominale effektiewe wisselkoers van die rand. Internasionale grondstofpryse wat betrekking het op Suid-Afrika se mandjie van uitvoergoedere, was in die vierde kwartaal van 1997 taamlik laag – gemiddeld sowat 6 persent laer as in die tweede kwartaal.

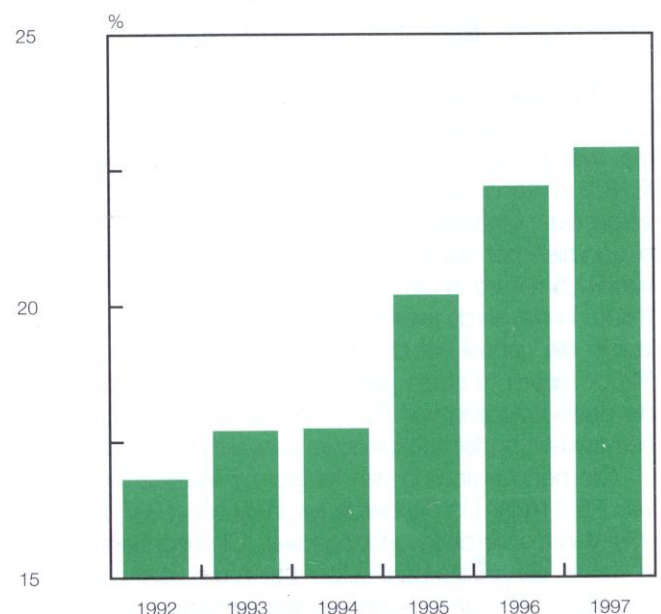
Goedere-uitvoerwaardes het in 1997 in die geheel met 12½ persent toegeneem teenoor 23½ persent in 1996. Die volume van die goedere-uitvoer het in so 'n mate toegeneem dat die verhouding van die reële goedere-uitvoer tot die reële bruto binnelandse produk van 20 persent in 1995 tot 22 persent in 1996 en 23 persent in 1997 toegeneem het. Die toegang tot nuwe markte sedert die vroeë negentigerjare het oënskynlik 'n belangrike rol in die uitbreiding van die land se uitvoerbasis gespeel.

Die waarde van die *netto gouduitvoer* (seisoensaangepas en teen 'n jaarkoers) het effens gedaal van R26,0 miljard in die derde kwartaal van 1997 tot R25,7 miljard in die vierde kwartaal, hoofsaaklik weens 'n vermindering van 3 persent in die fisiese omvang van die netto gouduitvoer. Die gerealiseerde uitvoerprys (in rand) deur binnelandse goudprodusente het in die vierde kwartaal met ongeveer 2 persent gestyg, ondanks 'n daling in die vasstellingsprys van goud op die Londense mark van VSA\$324 per fyn ons in die derde kwartaal van

Invoerpenetrasieverhouding



Reële goedere-uitvoer as persentasie van reële bruto binnelandse produk



1997 tot VSA\$307 per fyn ons in die vierde kwartaal. Die verskil tussen die gerealiseerde goudprys en die kontantprys op die Londense mark is natuurlik hoofsaaklik die gevolg van termynverkope van goud en ander verskansingspraktyke wat goudprodusente aangegaan het. Die potensiële prysverhogende uitwerking van 'n toename in die fisiese vraag na goud in Januarie 1998 toe sommige produsente kortposisies moes afsluit, is meer as teengewerk deur gerugte van aansienlike toekomstige goudverkope deur die Suid-Koreaanse sentrale bank. Dit het in Januarie 1998 tot 'n daling in die maandelikse gemiddelde vasstellingsprys van goud tot VSA\$289 per fyn ons gelei.

Vir die jaar 1997 in die geheel, het die gemiddelde prys van goud per fyn ons op VSA\$331 te staan gekom; aansienlik minder as die gemiddelde prysvlak van VSA\$388 per fyn ons wat in 1996 aangeteken is. Ondanks 'n effense daling in die fisiese hoeveelheid goud wat geproduseer is van 497 ton in 1996 tot 'n geraamde 495 ton in 1997, het die volume van die netto gouduitvoer in 1997 met ongeveer 5½ persent toegeneem op grond van verkope uit voorrade wat vroeër opgebou is.

Netto dienste- en oordragbetalings aan nie-inwoners (seisoensaangepas en teen 'n jaarkoers) het van R17,3 miljard in die tweede kwartaal van 1997 tot R18,2 miljard in die derde kwartaal en R18,4 miljard in die vierde kwartaal gestyg. Die tekort op die diensterekening het in 1997 toegeneem, hoofsaaklik weens 'n toename in dienstebetalings, veral rentebetalings wat met die inwaartse belegging in Suid-Afrika verband hou en wat toenames in die ontvangstes voortspruitend uit dienste aan nie-inwoners oorskry het. Die styging in ontvangste vir dienste was grotendeels afkomstig uit verhoogde reis- en akkommodasiebesteding deur buitelandse besoekers en 'n aansienlike styging in rente- en dividendontvangste voortspruitend uit die onlangse vlag van uitwaartse belegging deur Suid-Afrikaanse organisasies.

Kapitaalrekening

Die netto invloeiing van kapitaal nie verwant aan reserves nie, wat in die eerste drie kwartale van 1997 altesaam R18,3 miljard beloop het, is in die vierde kwartaal volgehou. Ondanks die probleme in die Oos-Asiatiese ekonomieë het die netto invloeiing van kapitaal nogtans van R1,5 miljard in die derde kwartaal van 1997 tot R1,9 miljard in die vierde kwartaal toegeneem. Vir die kalenderjaar in die geheel het die netto invloeiing van kapitaal op R20,2 miljard te staan gekom, wat aansienlik meer is as die netto invloeiing van R2,7 miljard in 1996 toe die rand herhaaldelik onder spekulatiewe aanvalle deurgeloo het.

Die netto invloeiing van langtermynkapitaal het egter van R8,3 miljard in die derde kwartaal van 1997 tot R2,6 miljard in die vierde kwartaal gedaal. Die openbare sektor sowel as die private banksektor het in die vierde kwartaal van 1997 netto uitvloeiinge van langtermynkapitaal na die res van die wêreld ondervind. Hierdie vloeiinge is egter geneutraliseer deur 'n aansienlike inwaartse beweging

Tabel 11. Netto kapitaalbewegings nie verwant aan reserves nie

R miljarde

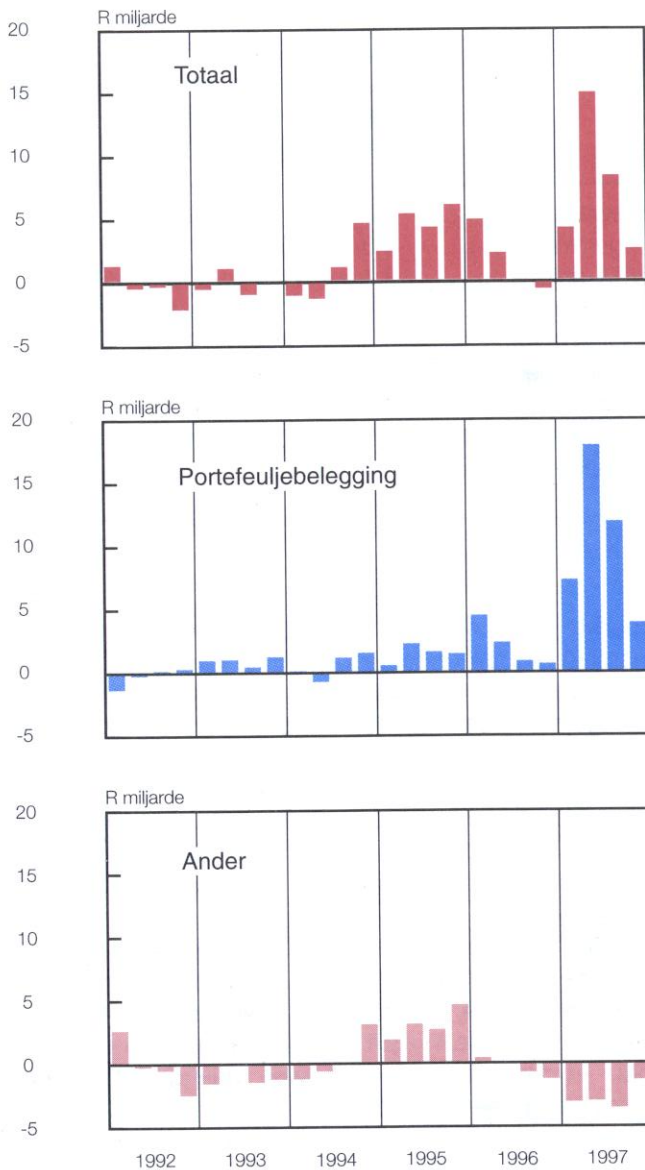
	1996		1997			
	Jaar	1e kw	2e kw	3e kw	4e kw	Jaar
Lantermynkapitaal						
Openbare owerhede.....	8,0	1,0	12,2	2,1	-2,5	12,8
Openbare korporasies	-1,3	1,4	4,8	0,8	-0,2	6,8
Monetêre sektor.....	-1,3	-0,2	-0,1	-0,3	-0,2	-0,8
Private sektor.....	1,3	2,0	-2,0	5,7	5,5	11,2
Totale langtermynkapitaal	6,7	4,2	14,9	8,3	2,6	30,0
Korttermynkapitaal						
Monetêre sektor.....	9,9	2,3	3,3	-4,5	0,0	1,1
Ander, onaangete-kende transaksies ingesluit.....	-13,9	-2,7	-5,2	-2,3	-0,7	-10,9
Totale korttermynkapitaal	-4,0	-0,4	-1,9	-6,8	-0,7	-9,8
Totale kapitaal	2,7	3,8	13,0	1,5	1,9	20,2

van internasionale langtermynkapitaal na die binnelandse private nie-banksektor. Die netto uitwaartse beweging van langtermynkapitaal vanaf die openbare sektor en vanaf private bankinstellings word verklaar deur redelike groot terugbetalings van buitelandse vaste kapitaalverpligtinge en buitelandse beleggers se netto verkope van sekuriteite wat op die Effektemark van Suid-Afrika genoteer is.

Die netto invloeiing van langtermynkapitaal na die private nie-banksektor het effens gedaal van R5,7 miljard in die derde kwartaal van 1997 tot R5,5 miljard in die vierde kwartaal. Netto aankope deur nie-inwoners van aandele wat op die Johannesburgse Aandelebeurs genoteer is, het in die vierde kwartaal R6,6 miljard beloop, wat die totale netto invloeiing van kapitaal langs hierdie weg op R26,2 miljard in 1997 in die geheel te staan gebring het. Suid-Afrikaanse organisasies het in die vierde kwartaal van 1997 bates ter waarde van R4,4 miljard bekom deur middel van bateruiltransaksies met buitelandse beleggers en ter waarde van R3,7 miljard deur die buitelandse plasing van aandele vir finansieringsdoeleindes. Buiten moontlike sekondêre handelings was hierdie transaksies neutraal ten opsigte van netto kapitaalbewegings en veranderings in buitelandse reserves.

Soos in die bygaande grafiek getoon word, is langtermynkapitaalinvloeiinge na Suid-Afrika in 1997 deur portefeuljebeleggingsvloeiinge oorheers. Hierdie vorm van kapitaal word allerweë beskou as minder bestendig

Langtermynkapitaalbewegings



as buitelandse regstreekse belegging en kan in die geval van 'n skielike ommekeer van vloeiinge 'n potensieel destabiliserende uitwerking op algemene makro-ekonomiese ewewig hê. Die potensiaal vir die ontwinging van die Suid-Afrikaanse sekuriteitemarkte deur 'n skielike ommekeer van portefeuljefondse word egter getemper deur die besondere aard van 'n aansienlike deel van die onlangse kapitaalvloeiinge. Eerstens het hierdie vloeiinge 'n relatief langertermynbelegging in die ekonomie weerspieël in soverre hulle met Eurorand-uitgiftes met 'n lang looptyd verband gehou het, en tweedens het dit ook die karakter van 'n langertermynbelegging aangeneem waar hierdie vloeiinge die

teenhanger van 'n bateruiltransaksie tussen 'n inwoner en 'n buitelandse belegger gevorm het.

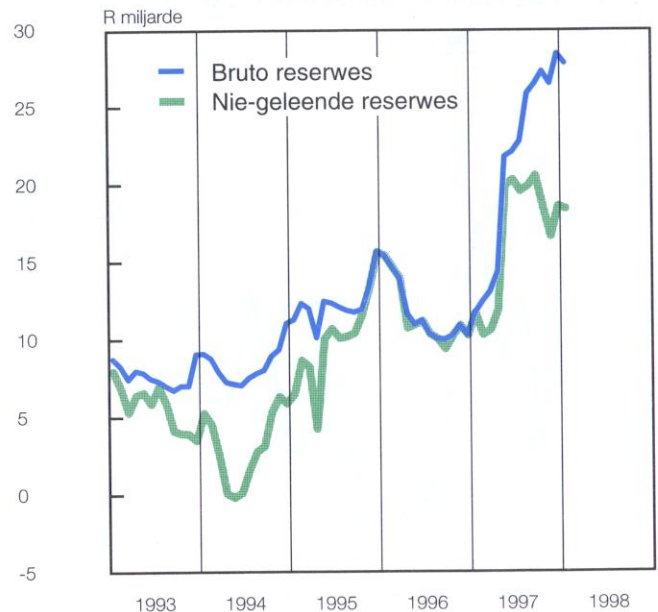
Die netto uitvloeiing van *korttermynkapitaal* nie verwant aan reserves nie, maar met inbegrip van metingsfoute en onaangetekende transaksies, het van R6,8 miljard in die derde kwartaal van 1997 tot R0,7 miljard in die vierde kwartaal afgeneem namate nie-bankinstellings in die private sektor hul korttermyn buitelandse verpligtinge verminder het. Hoewel Suid-Afrikaanse banke gedurende 'n betreklike stram tydperk in die binnelandse geldmark van korttermyn buitelandse fondse gebruik gemaak het, is hierdie vloeiinge gedurende die vierde kwartaal van 1997 geheel en al deur 'n afname in handelsverwante lenings deur ander instellings teen-gewerk.

Buitelandse reserves

Suid-Afrika se *netto goud- en ander buitelandse reserves* het vir die tweede agtereenvolgende kwartaal gedaal toe dit in die vierde kwartaal van 1997 met R1,2 miljard afgeneem het. In 1997 in die geheel, het die land se netto buitelandse reserves nietemin met R11,4 miljard gestyg, vergeleke met 'n afname van R4,6 miljard in 1996.

Deels as gevolg van 'n toename van R3,9 miljard in die korttermyn buitelandse verpligtinge van die Reserwebank, het die land se bruto goud- en ander buitelandse reserves vanaf die einde van September 1997 tot aan die einde van Desember 1997 met R3,0 miljard tot R36,6 miljard gestyg. Dit het 'n toename van R19,8 miljard vanaf die einde van 1996 verteenwoordig, maar daar

Buitelandse reserves van die Reserwebank



moet kennis geneem word van die benutting van korttermyn buitelandse kredietfasiliteite ten bedrae van R9,8 miljard deur die Reserwebank gedurende die loop van 1997. Gemeet in Amerikaanse dollar, het die totale bruto buitelandse reserwes van \$3,6 miljard aan die einde van 1996 tot \$7,5 miljard aan die einde van 1997 toegeneem. In verhouding tot die waarde van die invoer van goedere en dienste, was die bruto reserwes aan die einde van 1997 gelykstaande aan ongeveer 10 weke se invoer van goedere en dienste – net twee weke se invoer minder as wat allerweë as 'n "gesonde vlak" van buitelandse reserwes beskou word.

Aan die einde van November 1997 het die Reserwebank se netto oop posisie in buitelandse valuta (dit wil sê die Bank se netto termynposisie in buitelandse valuta verminder met sy netto besit aan kontant goud- en buitelandse reserwes) op VSA\$17,1 miljard te staan gekom, teenoor VSA\$22,2 miljard aan die einde van Desember 1996. Die verandering in die netto oop posisie gedurende 1997 is 'n bewys van betekenisvolle vordering met die bereiking van die verklaarde beleidsoogmerk om die Bank se buitelandse valutablootstelling stelselmatig te verminder. Die beperkings op die besit aan buitelandse kontantvaluta deur gemagtigde handelaars tot 'n gesamentlike bedrag van VSA\$1,5 miljard is met ingang van 16 Januarie 1998 afgeskaf.

Wisselkoerse

Ontwikkelings in die Suid Afrikaanse mark vir buitelandse valuta is gedurende die vierde kwartaal van 1997 sterk beïnvloed deur gebeure in die internasionale finansiële

Tabel 12. Veranderings in die wisselkoerse van die rand

Persent

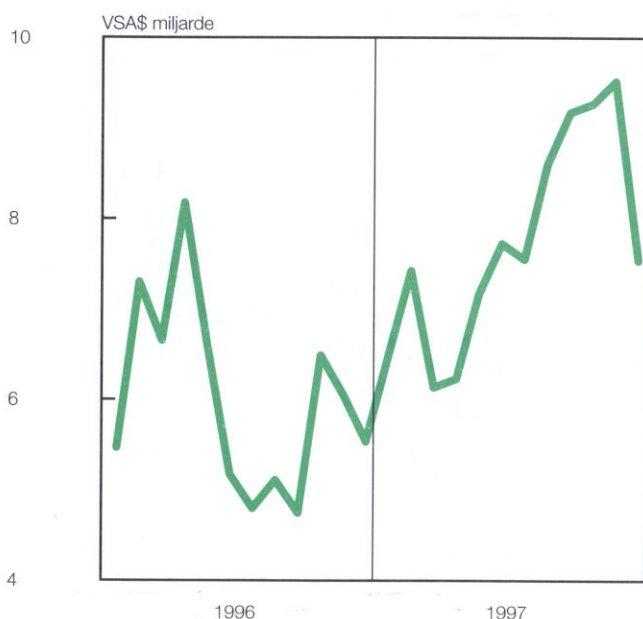
	30 Sep 1997 tot 31 Okt 1997	31 Okt 1997 tot 31 Des 1997	31 Des 1996 tot 31 Des 1997	31 Des 1997 tot 20 Feb 1998
Geweegde				
gemiddelde.....	-4,3	0,5	-0,3	-1,4
VSA-dollar.....	-3,1	-1,1	-3,8	-1,5
Britse pond.....	-6,4	-0,2	-1,6	-0,3
Duitse mark.....	-5,6	2,5	10,6	0,1
Japanse jen.....	-4,0	7,0	7,7	-4,0
Nederlandse				
gulden.....	-5,5	2,5	11,1	0,0
Italiaanse lira.....	-5,4	2,6	10,7	0,4

markte. Probleme in 'n aantal Oos-Asiatiese ekonomieë het die onbestendigheid in die plaaslike mark vir buitelandse valuta verhoog. As gevolg hiervan het die gemiddelde daaglikse omset in hierdie mark van VSA\$7,4 miljard in die eerste nege maande van 1997 tot VSA\$9,3 miljard gedurende Oktober en VSA\$9,5 miljard in November toegeneem. Handelstoestande het in Desember ietwat kalmer geword toe die gemiddelde daaglikse omset tot VSA\$7,5 miljard afgeneem het.

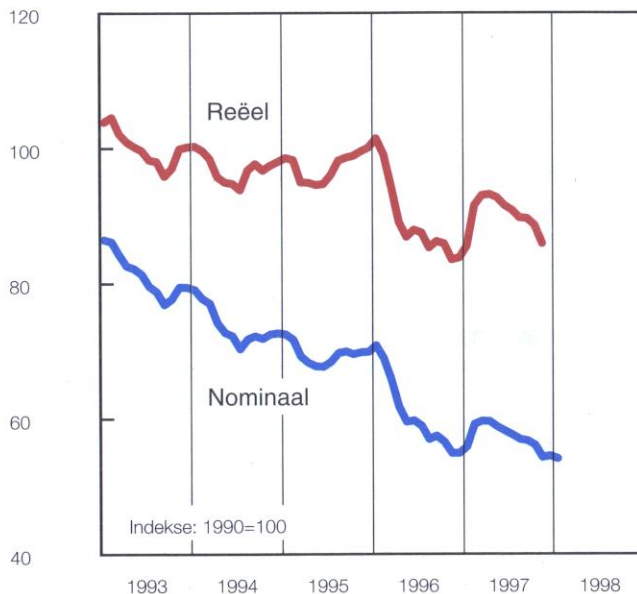
Die nominale effektiewe wisselkoers van die rand, wat per saldo in September 1997 met 0,4 persent geappresieer het, het in Oktober met 4,3 persent gedaal toe die probleme in Asië na Suid-Afrika begin oorspoel het. In die daaropvolgende twee maande tot aan die einde van Desember 1997, het die nominale effektiewe wisselkoers met 0,5 persent toegeneem en vervolgens in die eerste sewe weke van 1998 met 1,4 persent gedaal. Indien die inflasieverskil tussen Suid-Afrika en sy vernaamste handelsvennote in ag geneem word, wil dit voorkom asof die valutamark herstel het van die ontwrigting wat deur die probleme in Asië meegebring is en matige bestendigheid tot die mark teruggekeer het. Dit lyk asof die invloed van wisselkoersprobleme in Asië van korte duur was.

Die stabilisering en uiteindelijke verstewiging van die handelsgewegde waarde van die rand in die nadraai van die valutaprobleme in Asië het plaasgevind sonder amptelike inmenging om die wisselwaarde van die rand op enige voorafbepaalde vlak te beskerm. Gedurende hierdie gebeure het die Reserwebank die mark nietemin van tyd tot tyd betree om dollars te voorsien, maar hierdie inmenging was bedoel om likiditeit te voorsien wanneer private markdeelnemers huiwerig was om van hul buitelandse valutabesit afstand te doen en nie soseer om die eksterne waarde van die rand te beskerm nie.

Gemiddelde netto daaglikse omset in die Suid-Afrikaanse mark vir buitelandse valuta



Effektiewe wisselkoerse van die rand



Die rand, wat 21,9 persent van sy waarde in 1996 teenoor 'n mandjie van geldeenhede verloor het, was in 1997 baie bestendiger toe dit met slegs 0,3 persent gedeprimeer het, ondanks die sterk afwaartse druk in die vierde kwartaal van 1997. Vanaf die einde van 1996 tot aan die einde van 1997 het die rand van R4,68 tot R4,87 teenoor die VSA-dollar beweeg, 'n deprimeering van slegs 3,8 persent. Teenoor die Duitse mark, die Italiaanse lira en die Nederlandse gulden het die rand egter oor dieselfde tydperk met onderskeidelik 10,6 persent, 10,7 persent en 11,1 persent geappreieer.

Die daling in die gemiddelde vlak van die nominale effektiewe wisselkoers van die rand in 1997 was kleiner as die inflasieverskil tussen Suid-Afrika en sy vernaamste handelsvennootlande. Die gemiddelde vlak van die *effektiewe wisselkoers aangepas vir die inflasieverskil* was gevolglik in 1997 0,5 persent bo die gemiddelde van 1996. Gedurende 1997 het die inflasie-aangepaste effektiewe wisselkoers met ongeveer 3 persent van Desember 1996 tot Desember 1997 geappreieer.

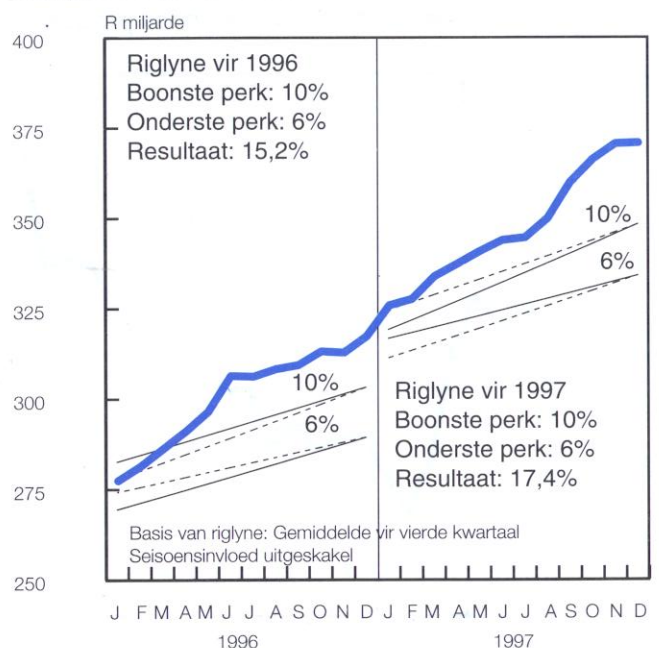
Monetêre ontwikkelings, rentekoerse en finansiële markte

Geldvoorraad

Die *groeikoerse in M3* (seisoensaangepas en teen 'n jaarkoers) het gedurende 1997 binne 'n breë band gewissel; dit het aanvanklik, tot die middel van die jaar, afwaarts beweeg, net om teen die einde van die jaar vinnig te versnel. Die groeikoers oor twaalf maande in M3 het van 16,8 persent in Januarie 1997 tot 12,7 persent in Junie gedaal, maar toe tot 17,8 persent in November en 17,2 persent in Desember versnel. Die kwartaallikse gemiddelde waarde van M3 het van 18,1 persent teen 'n jaarkoers in die eerste kwartaal van 1997 tot 12,1 persent in die derde kwartaal verlangsaam, maar weer vinnig tot 23,1 persent in die vierde kwartaal toegeneem. Die groei in die kwartaallikse gemiddelde waarde van M3 vanaf die basis van die 1997-riglynjaar tot die vierde kwartaal van 1997 was 17,4 persent; dit was aansienlik hoër as die boonste perk van 10 persent van die riglyngebied.

Die vinnige groei in die geldvoorraad het deels verband gehou met die toenemende vraag na geld vir transaksiedoeleindes voortspruitend uit volgehoue inflasie (hoewel dit laer as in vorige jare was), en die vraag wat ontstaan het uit die hoër vlakke van ekonomiese bedrywigheid soos weerspieël in groot toenames in die omset in die finansiële markte en deur groei in die reële

Riglyne vir groei in M3



Tabel 13. Groei van kwartaal tot kwartaal in monetêre totale

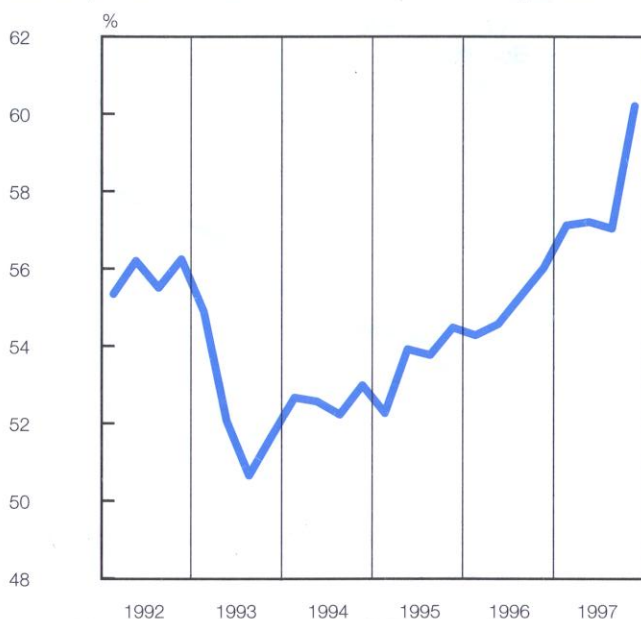
Persent

Tydperk	M1A	M1	M2	M3
1997: 1e kw	22,5	23,3	24,2	18,1
2e kw	9,1	-1,3	13,5	16,4
3e kw	25,7	21,4	11,0	12,1
4e kw	51,0	53,1	29,8	23,1

binnelandse produksie en besteding. Geld het ook sy betekenis as waardedraer ietwat herwin namate inflasie na laer vlakke beweeg en reële depositokoerse gestyg het. Die onseker vooruitsigte vir finansiële markte wat uit die finansiële probleme in die Asiatiese lande voortgespruit het, het verder die verskuiwing na deposito-tipe beleggings pleks van ander finansiële bates versterk.

Die verhouding van M3 tot die nominale bruto binnelandse produk (dit wil sê die omgekeerde van die inkome-omloopsnelheid van M3) het gevolglik van 56,0 persent in die vierde kwartaal van 1996 tot 60,3 persent in die vierde kwartaal van 1997 toegeneem. Die toename in beleggers se voorkeure vir likiditeit gedurende 1997 is ook weerspieël in die hoër groeikoerse oor twaalf maande in die enger monetêre totale (dit wil sê M1A, M1, M2) in verhouding tot die groei in M3 en die skerper toename in die groeikoerse van kwartaal tot kwartaal van die enger totale vergeleke met die versnelling in die groei van M3.

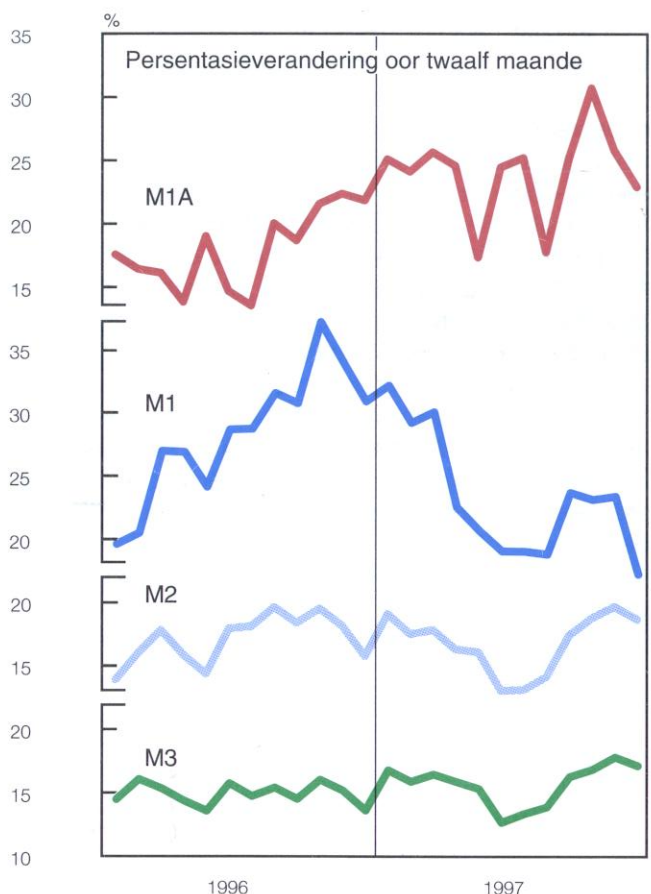
M3 as persentasie van bruto binnelandse produk



Die deviesebeheerbeperkings met betrekking tot die bedrag wat 'n Suid-Afrikaanse inwoner in 'n deposito-rekening betitel in buitelandse valuta by 'n binnelandse bank mag hou, is ook vanaf 1 Julie 1997 verslap. Sodanige saldo's by nie-bankinstellings en nie-regeringsinstellings het dienoooreenkomstig van R1,8 miljard aan die einde van Julie 1997 tot R2,1 miljard aan die einde van Desember toegeneem. In die geval van individue alleenlik het die bedrag wat gedeponeer is in rekenings wat in buitelandse valuta betitel is van slegs R15,3 miljoen tot 'n steeds betreklik onbeduidende bedrag van R48,4 miljoen oor dieselfde tydperk toegeneem.

Onder die *statistiese teenhangers* van die toename van R54,8 miljard in die M3-geldvoorraad gedurende 1997, was daar toenames van R52,0 miljard in die monetêre sektor se eise teen die private sektor en R9,8 miljard teen die regeringsektor. Die toename van R4,3 miljard in die netto buitelandse bates van die monetêre sektor het ook tot die groei in M3 bygedra. Hierdie toenames is deels teengewerk deur 'n afname in die "netto ander bates" van die monetêre sektor – laasgenoemde het onder andere voortgespruit uit surplusse

Monetêre totale



Tabel 14. Statistiese teenhangers van veranderinge in M3

R miljard

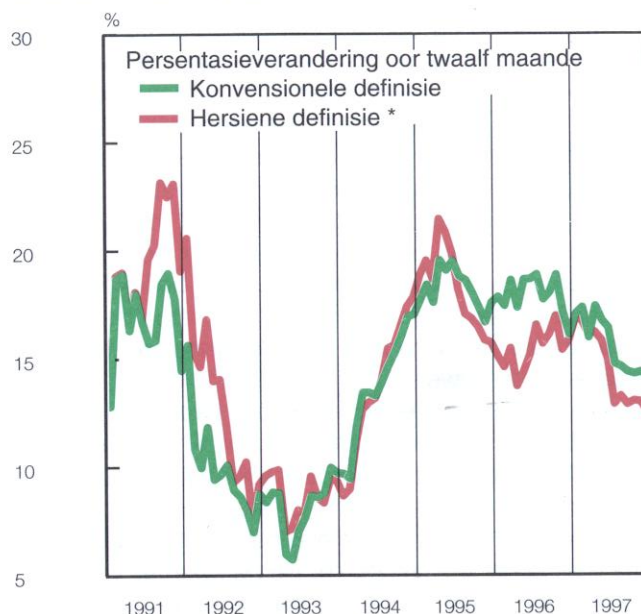
Teenhangers	1997				Jaar
	1e kw	2e kw	3e kw	4e kw	
Netto buitelandse bates	-2,2	6,5	1,9	-1,9	4,3
Netto eise teen die regering	4,6	-3,3	4,0	4,5	9,8
Eise teen die private sektor	16,1	14,2	9,5	12,3	52,0
Netto ander bates en laste	-1,2	-11,2	0,4	0,6	-11,3
Totale verandering in M3	17,4	6,2	15,8	15,4	54,8

weens die Reserwebank se termyntransaksies in die termynmark vir buitelandse valuta. Die volledige stel rekeningkundige teenhangers van die toename in M3 in 1997 word in die tabel aangedui.

Kredietverlening

Kredietverlening aan die private sektor was die belangrikste faktor wat verantwoordelik was vir die vinnige groei in die geldvoorraad. Die koers van toename oor twaalf maande in kredietverlening deur monetêre instellings aan die private sektor het nietemin van 17,3 persent in Februarie 1997 tot 14,2 persent in Desember afgeneem. Volgens 'n hersiene weergawe van die definisie van

Kredietverlening aan private sektor



* Uitgesluit lenings aan plaaslike owerhede; ingesluit lenings ingevolge herverkoop-ooreenkomste en buitelandse finansiering deur geleen

bankkredietverlening aan die private sektor (wat lenings aan plaaslike owerhede uitsluit, maar lenings en voorskotte onder terugverkoop-ooreenkomste aan "ander partye" en buitelandse finansiering in banke se eie name en deur geleen aan "ander kliënte" insluit), het die groei oor twaalf maande slegs 12,4 persent in Desember 1997 beloop. Gemeet van kwartaal tot kwartaal, het die groei in die gebruiklike definisie van kredietverlening aan die

Tabel 15. Kredietverlening aan die private sektor volgens soort krediet

Persentasieverandering oor twaalf maande

Tydperk	Beleggings	Wissels verdis-konteer	Afbetalings-verkope	Bruikhuur-finansiering	Verband-voorskotte	Ander lenings en voorskotte	Totaal
1997: Jan	2,6	-13,2	21,1	16,6	16,7	20,0	17,1
Feb	1,4	-2,2	20,2	15,1	16,6	20,9	17,3
Mrt	-1,5	-16,0	18,1	14,3	16,1	19,6	16,0
Apr	4,7	-6,2	19,5	12,9	15,8	22,5	17,4
Mei	10,2	-10,9	15,8	11,9	15,4	22,1	16,7
Jun	9,9	-15,8	14,3	8,9	15,0	23,2	16,4
Jul	15,8	-14,9	12,2	6,6	13,7	20,2	14,7
Aug	5,6	-0,7	11,6	5,6	13,1	21,2	14,6
Sep	-1,0	13,0	10,6	0,5	12,7	22,4	14,4
Okt	10,8	21,9	11,6	-1,4	12,2	21,0	14,3
Nov	14,1	11,7	9,7	-2,3	11,8	22,8	14,4
Des	9,5	8,2	9,2	-3,0	11,5	23,6	14,2

private sektor van 21,2 persent in die tweede kwartaal van 1997 tot 9,5 persent in die derde kwartaal en 10,6 persent in die vierde kwartaal afgeneem.

'n Ontleding van monetêre instellings se eise teen die private sektor volgens *soort krediet* toon dat die koers van toename oor twaalf maande in *verbandvoorskotte* vinnig van 16,9 persent in Desember 1996 tot 11,5 persent in Desember 1997 verlangsaam het – die laagste vlak sedert Februarie 1983. Trae toestande in die eiendomsmark en geringe toenames in duursame verbruiksbesteding het tot die afname in die groeiakoers van verbandvoorskotte bygedra. Die hoë koste van verbandvoorskotte het huishoudings natuurlik ook tot versigtigheid gemaak in hul gebruikmaking van verbandfinansieringsgeriewe.

Die persentasieverandering oor twaalf maande in totale *afbetalingsverkoopkrediet en bruikhuurfinansiering* het van 19,6 persent in Januarie 1997 tot 5,1 persent in Desember 1997 afgeneem. Die uitstaande bedrae aan kredietverlening deur monetêre instellings vir bruikhuurfinansiering het gedurende die vierde kwartaal van 1997 tot laer as 'n jaar vantevore gedaal en die afname in motorvoertuigverkope in die vierde kwartaal van 1997 weerspieël. Totale uitbetalings ten opsigte van nuwe besigheid in afbetalingsverkope en bruikhuurtransaksies het van R41,5 miljard in 1996 tot R38,5 miljard in 1997 afgeneem. Dit beteken 'n daling van 14,5 persent in die inflasie-aangepaste totaal.

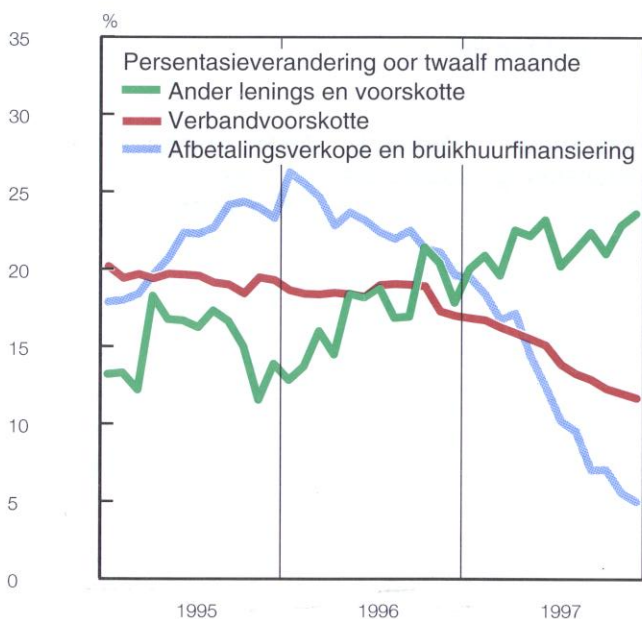
Die sterkste dryfkrag vir groei in kredietverlening aan die private sektor in die tweede helfte van 1997 is verskaf

deur toenames in *oortrokke rekeninge en ander lenings en voorskotte*. In elke maand vanaf April 1997 het die koers van toename oor twaalf maande in hierdie kredietkategorie 20 persent oorskry en 22,8 persent in November en 23,6 persent in Desember beloop. Die sterk vraag na bedryfskapitaal deur die maatskappysektor, lenings deur sakeondernemings om kop bo water te hou te midde van swak vraag, en die omskakeling van buitelandse handelsfinansiering van buitelandse na binnelandse bronne van krediet, was onder die vernaamste redes wat aanleiding gegee het tot die toename in die vraag na oortrokke rekeninge en ander lenings en voorskotte.

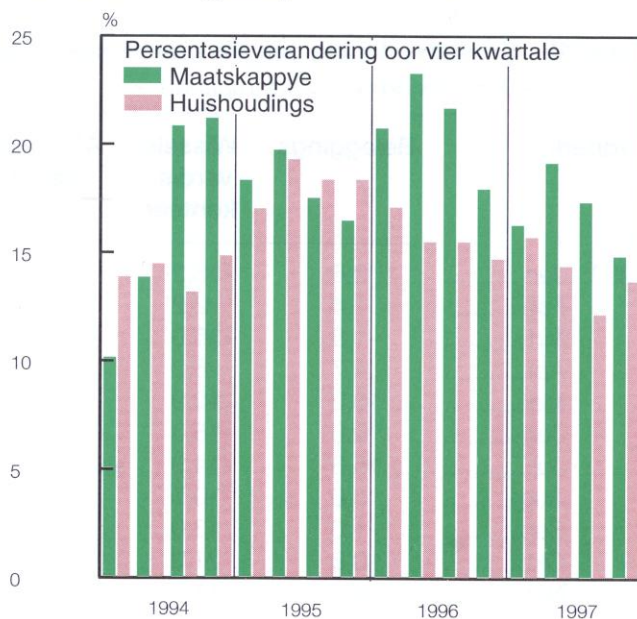
Die verskuiwing in die relatiewe belangrikheid van kredietverlening deur die monetêre sektor van huishoudings na die maatskappysektor het in die vierde kwartaal van 1997 voortgeduur. Uitgedruk as persentasieverandering, het die groei oor twaalf maande in kredietverlening aan huishoudings 13,7 persent in Desember 1997 beloop, dit wil sê nog steeds minder as die groei oor twaalf maande van 14,8 persent in kredietverlening aan die maatskappysektor gedurende dieselfde tydperk.

Plaaslike filiale en takke van buitelandse banke het hul aandeel in die gekonsolideerde balansstaat van die banksektor gedurende 1997 redelik vinnig verhoog, al was dit vanaf 'n baie lae basis. Teen die einde van 1997 het hierdie filiale en takke krediet aan instellings in die private sektor verleen tot 'n bedrag gelykstaande aan slegs 2,1 persent van totale bankkredietverlening aan die private sektor – ten spyte van 'n drie-en-'n-halfvoudige toename

Kredietverlening aan private sektor volgens soort krediet



Kredietverlening aan private sektor



Tabel 16. Kredietverlening deur plaaslike filiale en takke van buitelandse banke

Einde van	Persentasie- verandering oor twaalf maande	Persentasie van totale bank- krediet aan die private sektor
1992	9,7	0,7
1993	80,3	1,1
1994	-2,1	0,9
1995	19,3	0,9
1996	98,9	1,6
1997	49,3	2,1

in hul uitleenbedrywighede oor die afgelope drie jaar.

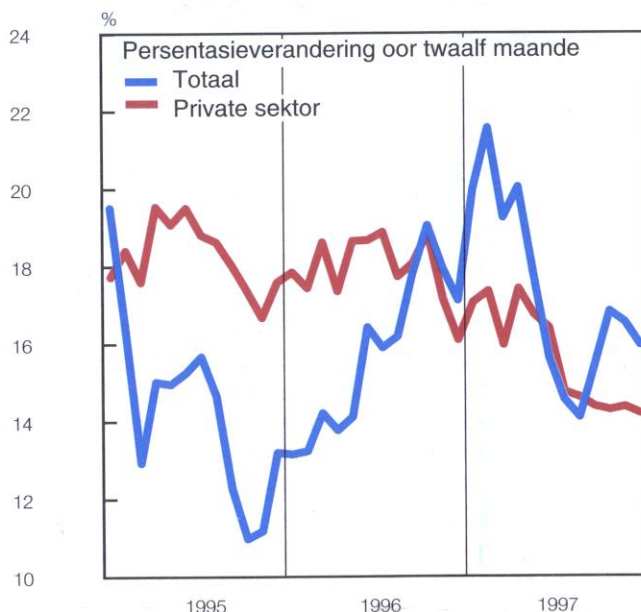
Netto eise van monetêre instellings teen die regering-sektor het gedurende 1997 sterk toegeneem met die gevolg dat die groei koers oor twaalf maande van totale kredietverlening die groei in kredietverlening aan die private sektor deurgaans oorskry het, behalwe vir die maande Junie tot Augustus. Totale groei in krediet, gemeet oor tydperke van twaalf maande, het nietemin van 20,1 persent in April 1997 tot 14,1 persent in Augustus verlangsaam, maar toe per saldo tot 16,4 persent in Desember versnel. Die toenames in banke se netto eise teen die regeringsektor was eerder die gevolg van 'n groter besit aan staatseffekte deur banke as 'n afname in regeringsdeposito's by die monetêre sektor.

Rente- en opbrengskoerse

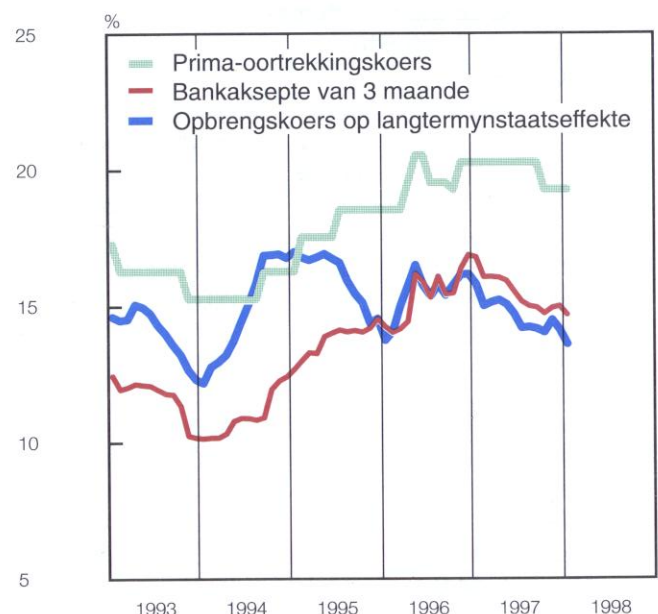
Opbrengskoerse op effekte, wat gewoonlik ten tye van ekonomiese verlangsaaming neig om te daal, het gedurende 1997 afgeneem namate die inflasieverwagtings vervaag en die bewegings van die wisselkoers van die rand heelwat bestendiger as gedurende 1996 geword het. Die algemeen afwaartse beweging van opbrengskoerse op effekte is by twee geleenthede tydelik onderbreek: in Maart en April 1997, toe onsekerheid oor die begrotingsvoorstelle van die Nasionale Regering en die moontlike uitwerking van die gedeeltelike verslapping van deviesebeheer op inwoners tot 'n styging in opbrengskoerse aanleiding gegee het, en weer teen die einde van Oktober toe die onstuimigheid in sommige Asiatiese finansiële markte die Suid-Afrikaanse markte vir sekuriteite beïnvloed het.

Die *maandelikse gemiddelde opbrengskoers op langtermynstaatsseffekte* het van 16,2 persent in Desember 1996 tot 14,0 persent in Oktober 1997 afgeneem, maar toe tot 14,5 persent in November toegeneem namate die uitwerking van die finansiële probleme in Asië na Suid-Afrika oorgespoel het. Opbrengskoerse op effekte het daarna hul afwaartse beweging hervat en die maandelikse gemiddelde waarde het tot 14,1 persent in Desember 1997 en 13,6 persent in Januarie 1998 teruggesak. Die bewegings van die *daaglikse gemiddelde opbrengskoers op langtermynstaatsseffekte* gedurende die vierde kwartaal van 1997 het, soos verwag kon word, onbestendiger vertoon as die maandelikse gemiddeldes: die daaglikse gemiddelde koers het tot 13,76 persent op 22 Oktober afgeneem – die laagste vlak in 1997 – maar

Kredietverlening deur monetêre instellings



Rente- en opbrengskoerse



toe vinnig tot 15,07 persent op 28 Oktober toegeneem. Sedert die effektemark kalmer en nie-inwoners weer netto aankopers van effekte geword het, het die daaglikse gemiddelde waarde van die opbrengskoerse op effekte tot 13,57 persent teen die einde van Januarie 1998 gedaal.

Die *maandelikse gemiddelde inflasie-aangepaste opbrengskoers op langtermynstaats-effekte*, wat oor die tydperk vanaf Februarie 1997 tot Augustus op ongeveer 5 persent afgeplat het, het tot 6,2 persent in Oktober toegeneem namate verbruikersprysinflasie oor een jaar skerper begin afneem het, terwyl die maandelikse gemiddelde van nominale opbrengskoerse op effekte oor die algemeen onveranderd gebly het. Met die betreklik vinnige daling in verbruikersprysinflasie in die vierde kwartaal van 1997, het die inflasie-aangepaste opbrengskoers op langtermynstaats-effekte tot 7,6 persent in Desember toegeneem.

Die *koers op bankaksepte met 'n looptyd van drie maande*, wat bewegings in geldmarktoestande oor die algemeen redelik akkuraat verteenwoordig, het geleidelik afwaarts beweeg van 16,15 persent aan die einde van Januarie 1997 tot 'n koers van 14,85 persent aan die einde van September en 14,2 persent op 23 Oktober. Verwagtings van dalende inflasie en vooruitsigte van 'n verlaging in amptelike uitleenkoerse was van die ver naamste oorsake vir die afname in geldmarkrentekoerse gedurende 1997. Toe die gevolg van die finansiële

probleme in die Asiatiese ekonomieë na ander opkomende markte uitgekring het, het die koers op bankaksepte met 'n looptyd van drie maande skielik gestyg tot 14,9 persent aan die einde van Oktober 1997 en 15,0 persent aan die einde van November. Met die hervatting van normale handelstoestande het die koerse effens gedaal tot 14,9 persent aan die einde van Desember 1997 en 14,45 persent aan die einde van Januarie 1998.

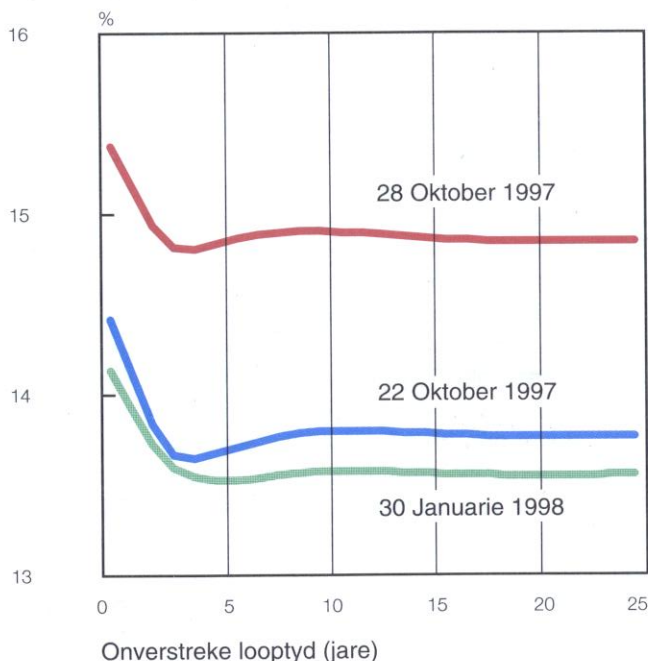
Die afwaartse neiging in geldmarkrentekoerse is ook weerspieël in 'n afname in die *tenderkoers op skatkiswissels met 'n looptyd van drie maande* van 15,84 persent aan die einde van Januarie 1997 tot 14,49 persent aan die einde van Oktober. Ondanks die afname van een persentasiepunt in Bankkoers op 20 Oktober 1997, het die tenderkoers op skatkiswissels van drie maande tot 14,59 persent aan die einde van November en 14,79 persent aan die einde van Desember gestyg. Opwaartse druk op die tenderkoers op skatkiswissels van drie maande is hoofsaaklik veroorsaak deur die groot geldmarktekort wat banke by geleentheid genoep het om gebruik te maak van onderpand wat kwalifiseer vir tweede-vlaktoegang tot die Reserwebank se akkommodasiefasiliteite gedurende November en Desember. Die sterk vraag na skatkiswissels met 'n looptyd van drie maande om akkommodasie teen onderpand van tweedevlakkbates te vermy het verhoed dat die koers op hierdie wissels so sterk soos ander geldmarkrentekoerse gestyg het en gevolglik veroorsaak dat die verskil tussen die tenderkoers op skatkiswissels en die koers op bankaksepte gedurende November 1997 aansienlik vergroot het. Teen die einde van Januarie 1998 het die tenderkoers op skatkiswissels met 'n looptyd van drie maande tot 14,25 persent afgeneem.

Tesame met die algemeen afwaartse beweging in rente- en opbrengskoerse, het die *opbrengskoers-kromme* gedurende 1997 afwaarts beweeg en op 22 Oktober 'n vorm aangeneem wat duidelik omgekeerd was in die aflossingsgebied van minder as drie jaar en met 'n merkbare plat helling oor langer looptye. Met die verskerpte onsekerhede in die tweede helfte van Oktober, het die opbrengskoerskromme oor die volle aflossingstruktuur merkbaar opwaarts beweeg, maar oor die algemeen die vorm en helling behou wat geheers het voordat die opwaartse regstelling plaasgevind het. Die opbrengskoerskromme het daarna weer afwaarts beweeg, maar met geldmarkrentekoerse wat effens meer gedaal het as opbrengskoerse op effekte met 'n looptyd van drie jaar, was die negatiewe helling van die omgekeerde deel van die kromme op 30 Januarie 1998 effens minder steil as op 22 Oktober 1997. Te oordeel aan die onlangse veranderings in die vorm en helling van die opbrengskoerskromme, kon korttermynrente- en opbrengskoerse straks tydelik meer as voorheen op veranderings in die onderliggende likiditeit en algemene marktoestande gereageer het.

Tabel 17. Rente- en opbrengskoerse
Persent

Tydperk	Maandelikse gemiddelde opbrengskoers op langtermynstaats-effekte		Oorheersende koers op	
	Nominaal	Aangepas vir inflasie	Verbandlenings	Vaste deposito's van 12 maande
1997: Jan.....	15,8	5,9	20,0	14,5
Feb.....	15,0	4,8	20,0	14,5
Mrt.....	15,2	5,1	20,0	14,5
Apr.....	15,2	4,9	20,0	14,5
Mei.....	15,1	5,1	20,0	14,5
Jun.....	14,7	5,5	20,0	14,5
Jul.....	14,2	4,8	20,0	14,5
Aug.....	14,2	5,2	20,0	14,5
Sep.....	14,2	5,7	20,0	14,5
Okt.....	14,0	6,2	20,0	14,5
Nov.....	14,5	7,3	19,0	13,5
Des.....	14,1	7,6	19,0	13,5
1998: Jan.....	13,6	7,5	19,0	13,5

Opbrengskoerskrommes



Gunstige finansiële ontwikkelings is in aanmerking geneem toe die Reserwebank Bankkoers op 20 Oktober 1997 met een persentasiepunt van 17 persent tot 16 persent verlaag het. Dit het die stadiger groei in finansiële totale in die derde kwartaal van 1997, veral die M3-geldvoorraad en kredietverlening aan die private sektor, dalende inflasie, 'n heelwat bestendiger verloop van die nominale effektiewe wisselkoers van die rand en stygende goud- en buitelandse valutareserwes ingesluit. In reaksie op hierdie verlaging in Bankkoers het die banke hul *prima-oortrekkingskoers*, wat sedert 21 November 1996 onveranderd was op 20,25 persent, met een persentasiepunt tot 19,25 persent en hul *oorheersende koers op verbandlenings* tot 19 persent verlaag. Die inflasie-aangepaste koers op verbandlenings het van 9,8 persent in Desember 1996 tot 12,2 persent in Desember 1997 toegeneem omdat die afname in verbruikersprysinflasie die afname in die nominale koers wat banke op verbandlenings hef, oorskry het.

Ander *deposito- en uitleenkoerse* is ook of in die vierde kwartaal van 1997 of vroeg in 1998 aangepas. Die *oorheersende kleinhandelskoers op vaste deposito's van twaalf maande by banke* is in November 1997 met een persentasiepunt tot 13,5 persent verlaag. Die *standaardrentekoers* van toepassing op lenings wat uit die Staatsinkomstefonds toegestaan word, is van 14,0 persent in November 1997 tot 14,5 persent in Januarie 1998 verhoog, maar toe tot 13,75 persent in Februarie 1998 verlaag.

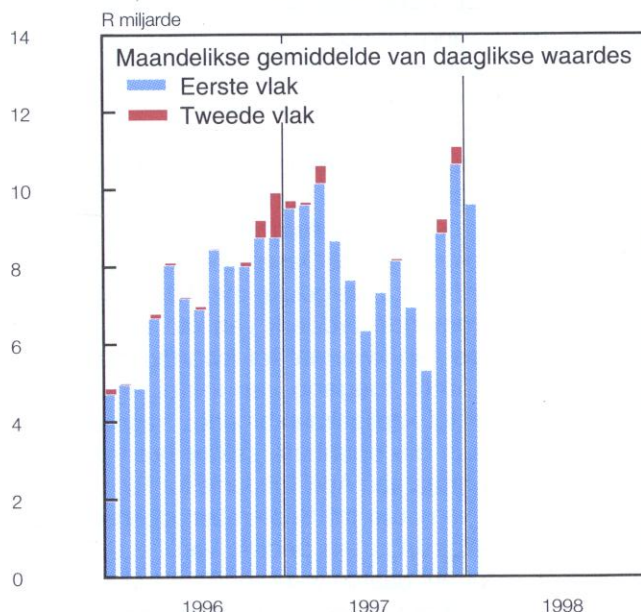
Geldmark

Geldmarktoestande wat in die eerste kwartaal van 1997 betreklik stram was, het gedurende die tweede en derde kwartaal verruim, maar in die vierde kwartaal weer vernou. Dit is weerspieël deur die bedrag aan *akkommodasie* wat op *maandeindes* deur die Reserwebank aan banke verleen is en wat van R8,7 miljard aan die einde van Januarie 1997 tot R10,5 miljard aan die einde van Maart toegeneem het. Die "geldmarktekort" het daarna tot R5,1 miljard aan die einde van Junie 1997 afgeneem en was steeds op 'n betreklik lae vlak van R6,5 miljard aan die einde van September.

Die afname in die netto buitelandse bates van die Reserwebank as gevolg van die onstuimigheid in die Asiatiese finansiële markte, tesame met seisoenale vloeiinge van banknote, het veroorsaak dat die hoeveelheid akkommodasie wat deur die Bank verleen is, skerp gestyg het tot R11,1 miljard aan die einde van November 1997 en R10,2 miljard aan die einde van Desember. Die vernouing van die mark in November en Desember 1997 het banke genoodsaak om die Reserwebank te nader met onderpand wat vir "tweedevlak"-akkommodasie teen strafrentekoerse kwalifiseer. Die "geldmarktekort" het vervolgens tot R7,6 miljard aan die einde van Januarie 1998 afgeneem.

Die betreklike stram geldmarktoestande wat in die vierde kwartaal van 1997 geheers het, was die gevolg van die dreinerings van likiditeit uit die mark deur 'n toename van R2,7 miljard in note en munte in omloop en 'n afname van R2,3 miljard in die netto buitelandse bates

Akkommodasie deur Reserwebank verleen



van die Reserwebank. Die vernouende uitwerking van hierdie ontwikkelings is gedeeltelik teengewerk deur verliese vanweë die Reserwebank se betrokkenheid by termyntransaksies in buitelandse valuta gedurende die vierde kwartaal wat likiditeit in die mark ingepomp het.

In Januarie 1998 het geldmarktoestande aansienlik verruim toe note en munte na die feestyd na die Reserwebank teruggevloei het. Regeringsdeposito's by die Reserwebank is ook in Januarie 1998 verminder terwyl banklikiditeit verder verhoog is deur die verliese wat as gevolg van die Reserwebank se transaksies in die termynmark vir buitelandse valuta gely is.

Die *Reserwebank se optrede* in die geldmark gedurende die vierde kwartaal van 1997 was daarop gemik om die geldmarktekort toe te laat om die onderliggende vraag en aanbod in die mark te weerspieël. Korttermynaanpassings is aan die bateportefeulje van die Korporasie vir Openbare Deposito's gemaak en ruiltransaksies in buitelandse valuta is met banke aangegaan om sodoende groot skommelings in die geldmarktekort teen te werk.

Effektemark

Genoteerde maatskappye in die private sektor het in 1997 hul bedrywighede om kapitaal te bekom op die primêre aandelemark toegespits en hul byna heeltemal daarvan weerhou om *uitgiftes van vasterentedraende sekuriteite*, dit wil sê omskepbare voorkeuraandele en skuldbriewe te maak. 'n Bedrag van slegs R2,8 miljoen is verkry deur die uitreiking van omskepbare voorkeuraandele en skuldbriewe in 1997, vergeleke met R2,2 miljard in 1996. 'n Bedrag van R1,2 miljard is egter gedurende 1997 deur maatskappye in die private sektor verkry deur die uitreiking van *effekte* wat op die Effektebeurs van Suid-Afrika genoteer is.

As gevolg van maatskappye in die private sektor se gebrek aan belangstelling in die uitreiking van *vasterentedraende sekuriteite*, is bedrywigheid in die binnelandse primêre mark vir vasterentedraende sekuriteite deur *entiteite in die openbare sektor* oorheers. Die netto bedrag wat deur instellings in die openbare sektor deur middel van uitgiftes van vasterentedraende sekuriteite in die eerste nege maande van die fiskale jaar 1997/98 (dit is van April tot Desember 1997) verkry is, het R16,8 miljard bedra, vergeleke met R12,3 miljard in die ooreenstemmende tydperk van die vorige jaar. Groot wisselings van kwartaal tot kwartaal het voorgekom in die netto toegang van instellings in die openbare sektor tot kapitaalmarkbronne; netto uitgiftes deur instellings in die openbare sektor het van R7,2 miljard in die kwartaal van April tot Junie tot R2,1 miljard in die kwartaal van Julie tot September afgeneem toe netto effekte-aflossings ten bedrae van R6,9 miljard gemaak is, maar het daarna weer tot R7,5 miljard in die kwartaal van Oktober tot Desember toegeneem.

Die *Nasionale Regering* het sy befondsingsbehoeftes in 1997 tot 'n bedrag van R3,8 miljard in die interna-

sionale primêre effektemark aangevul deur middel van uitgiftes van effekte wat in buitelandse geldeenheede betitel is, vergeleke met R3,4 miljard in 1996. In Junie 1997 is 'n Samoerai-effek van ¥40 miljard met 'n looptyd van sewe jaar uitgereik. Die verskil van 93 basispunte tussen die opbrengskoers op hierdie effekte en hul Japanse eweknie was aansienlik minder as die vorige Samoerai-uitgifte in 1995, wat teen 215 basispunte bo die opbrengskoers op vergelykbare effekte van die Japanse regering gewaardeer is. Die Suid-Afrikaanse regering het kort na dié Samoerai-uitgifte ook 'n Yankee-effek van VSA\$500 miljoen oor twintig jaar uitgegee, wat teen 'n verskil van 183 basispunte bo die opbrengskoers op vergelykbare effekte van die Federale Regering van die VSA gewaardeer is. Dit was dié internasionale leningsuitgifte met die langste looptyd wat nog deur Suid-Afrika uitgereik is, en was 'n weerspieëling van aansienlik groter beleggersvertroue in die land. Dit het die regering ook in staat gestel om die looptydprofiel van buitelandse skuld te verleng en te verbeter.

Nie-finansiële korporasies in die openbare en private sektor het hulle daarvan weerhou om effekte wat in buitelandse geldeenheede betitel is in die internasionale kapitaalmarkte uit te reik. Eskom, Transnet en die Ontwikkelingsbank van Suider-Afrika het verkies om R870 miljoen deur effekte wat in rand betitel is in die Euro-effektemark in 1997 te verkry. Eskom het 'n verdere bedrag van R137 miljoen in Januarie 1998 en die Ontwikkelingsbank van Suider-Afrika R1 miljard in Februarie in Eurorand verkry.

Die omset in die *sekondêre effektemark* het met 41 persent tot 'n totale bedrag van R4 269 miljard in 1997 toegeneem. 'n Kwartaallikse rekordomset ter waarde van R1 370 miljard is in die vierde kwartaal van 1997 aangeteken. Handelsbedrywigheid het daarna nog lewendig gebly en het R465 miljard in Januarie 1998 beloop. Van die belangrikste verklarings onderliggend aan die skerp toename in die omset was:

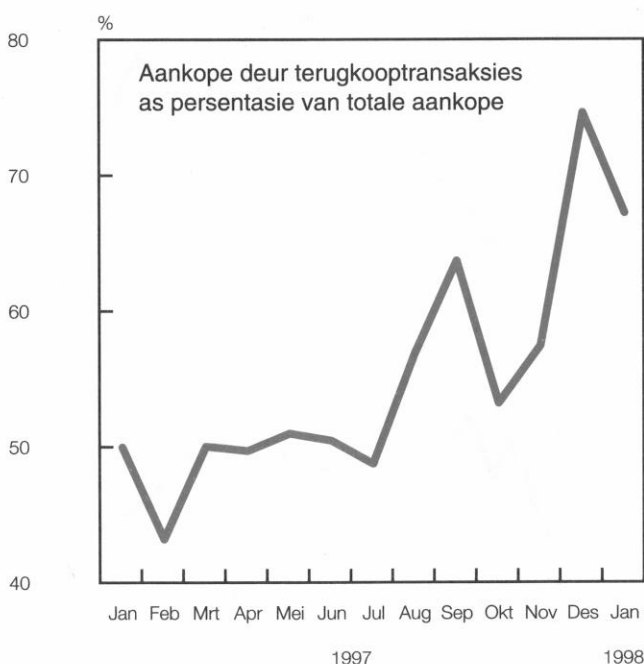
- die betreklik hoë opbrengskoeerse wat die belangstelling van nie-inwonerbeleggers geprikkel het;
- die vooruitsigte vir volgehoue bestendigheid van die rand;
- die behoefte om posisies voortspruitend uit die uitgiftes van Eurorand-effekte deur aankope in die Suid-Afrikaanse effektemark te verskans;
- die onstuimigheid in die Suidoos-Asiatiese finansiële markte en die lewenskragtigheid van die binnelandse effektemark te midde van onbestendige toestande in 'n aantal ontwikkelende markte;
- die verbeterde doeltreffendheid van die verhandeling van effekte in Suid-Afrika voortspruitend, onder andere, uit die verkorting van die vereffeningstydperk van effekte; en
- die beskikbaarheid van terugkooptransaksies waardeur markdeelnemers verkoop- en terugkooptransaksies kan gebruik om hul posisies van dag tot dag en verby verreffeningsdatums te 'dra'.

Tabel 18. Bedrywigheid in die effekte- en aandelemark

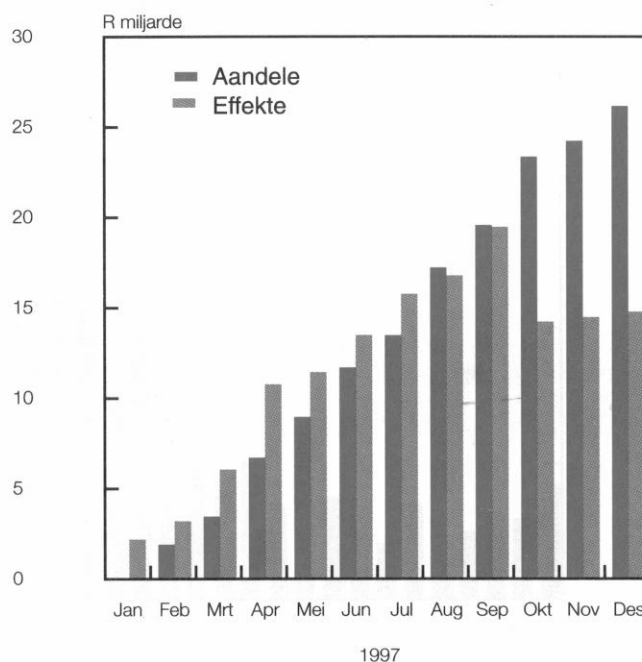
Tydperk	Sekondêre mark		
	Effekte verhandel	Aandele verhandel	
	Waarde	Aantal	Waarde
	R miljard	miljard	R miljard
1996: 1e kw.....	753	2,0	27,2
2e kw.....	781	1,9	27,4
3e kw.....	809	2,4	27,8
4e kw.....	680	2,7	34,6
Jaar.....	3 023	9,0	117,0
1997: 1e kw.....	883	3,9	41,2
2e kw.....	834	4,5	51,0
3e kw.....	1 182	4,9	58,7
4e kw.....	1 370	4,6	55,8
Jaar.....	4 269	17,9	206,7

Terugkooptransaksies, in die besonder, het in die loop van 1997 in gewildheid toegeneem. Aankope deur terugkooptransaksies as 'n persentasie van totale aankope het van 49 persent in die eerste helfte van 1997 tot 56 persent in die derde kwartaal en 60 persent

Omset in die effektemark



Nie-inwoners se kumulatiewe netto aankope van aandele en effekte



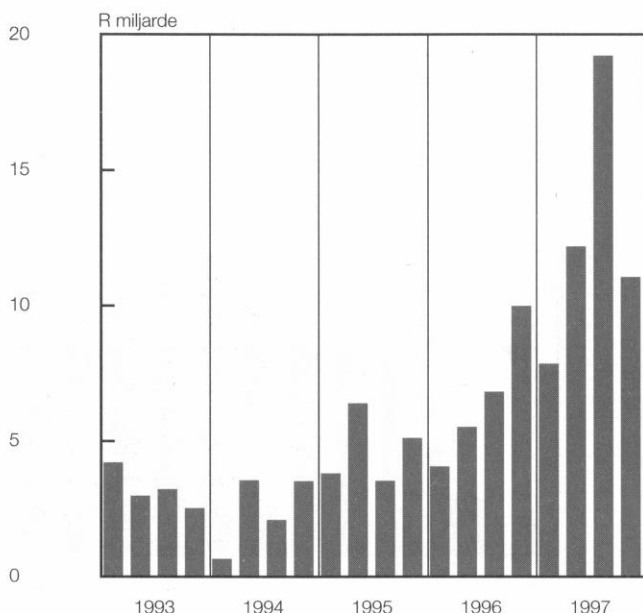
in die vierde kwartaal toegeneem. Die hoogste persentasie in 'n enkele maand is in Desember 1997 teen 75 persent aangeteken.

Ten spyte van netto verkope van effekte ten bedrae van R4,2 miljard in die vierde kwartaal van 1997, het die *kumulatiewe netto aankope van effekte deur nie-inwoners* R14,8 miljard in 1997 bedra, vergeleke met R3,4 miljard in 1996. Vereffening van 'n bedrag van R2,9 miljard van hierdie netto aankope gedurende 1997 was teen die einde van die jaar nog uitstaande. Die verdere afname in die opbrengskoerse op effekte vroeg in 1998 tot vlakke wat nog steeds aantrekliker was as opbrengskoerse in ander markte, en die vooruitsigte van verdere kapitaalwinste het nie-inwoners steeds na die Suid-Afrikaanse effektemark gelok en hul netto aankope het R3,6 miljard in die eerste ses weke tot middel-Februarie 1998 bedra.

Aandelemark

Anders as die primêre mark vir vasterentedraende sekuriteite, is die *primêre aandelemark* op groot skaal gebruik deur maatskappye wat op die Johannesburgse Aandelebeurs genoteer is en die *totale waarde van kapitaal* wat in hierdie mark verkry is, het van R26,4 miljard in 1996 tot R50,3 miljard in 1997 of met 91 persent toegeneem. Aandele wat uitgereik is vir die *verkryging van bates* wat nog nie genoteer is nie, het meer as drievoudig van R6,4 miljard in 1996 tot R21,6 miljard in 1997 toegeneem en *regte-uitgiftes van gewone aandele* het van R7,6 miljard tot R9,7 miljard oor dieselfde tydperk toegeneem. Hierdie twee bronne van finansiering was derhalwe verantwoordelik vir 43 persent

Kapitaal in die primêre aandelemark verkry



en 19 persent van die totale kapitaal wat in die primêre aandelemark in 1997 verkry is.

Die omset in die *sekondêre aandelemark* het in 1997 sterk toegeneem. Die *aantal* aandele wat op die Johannesburgse Aandelebeurs verhandel is, het van 1996 tot 1997 bykans verdubbel, terwyl die waarde van sulke aandele met ongeveer 77 persent tot R207 miljard toegeneem het. Maandelikse omsette het 'n hoogtepunt van R21,8 miljard in Oktober 1997 bereik, maar in die daaropvolgende maande tot R16,5 miljard in Desember teruggesak namate beleggersvertroue in ontwikkelende markte verswak het. Beleggerssentiment het merkbaar verbeter in die eerste weke van 1998 en die omset in die sekondêre aandelemark het tot R18,6 miljard in Januarie toegeneem.

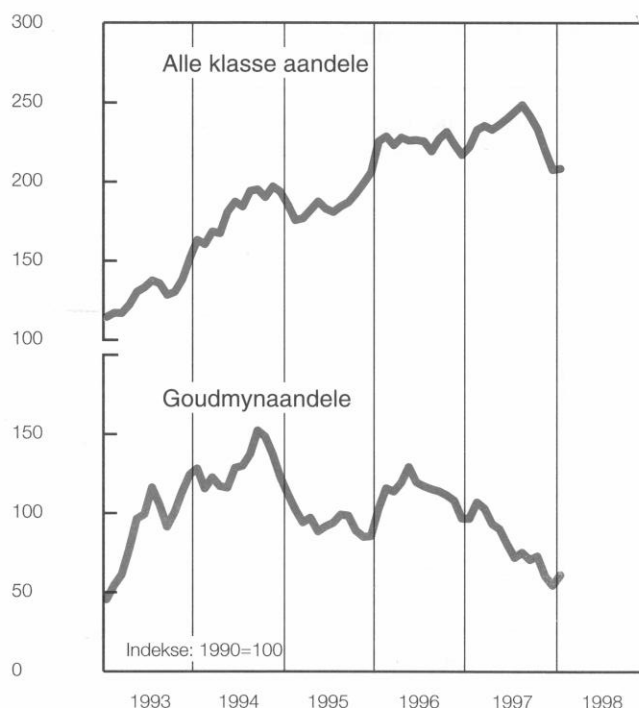
Die sterk vraag deur *nie-inwoner-beleggers* het die aandelemark in 1997 versterk. Die kumulatiewe netto aankope van aandele in die sekondêre aandelemark deur nie-inwoners het R26,2 miljard in 1997 bedra, of bykans vyf keer so veel as hul netto aankope van R5,3 miljard in 1996. Hoewel die intrinsieke waarde van Suid-Afrikaanse sekuriteite in die nadraai van die probleme in Asië se finansiële markte hersien is, het nie-inwoner-beleggers netto aankopers van aandele ten bedrae van R6,6 miljard in die vierde kwartaal van 1997 en R4,3 miljard in die eerste ses weke van 1998 gebly. Die gewaarwording van 'n kleiner risiko wat betref die wisselkoers, positiewe vooruitsigte wat betref prysbewegings in die aandelemark en die probleme in Asië, het nie-inwoner-beleggers klaarblyklik aangemoedig om die deel van hul

opkomendemark-portefeuljes wat aan aandele van Suid-Afrikaanse maatskappye toegewys is, te verhoog.

Die *maandelikse gemiddelde prysvlak* van alle klasse aandele wat sedert die begin van 1997 stelselmatig gestyg het, het die algemene onbestendigheid in die internasionale aandelemarkte in die tweede helfte van Oktober weerspieël en skerp gedaal. As gevolg van die stewige groei in verdienste en in afwagting van 'n afname in rentekoerse, het die gemiddelde vlak van alle klasse aandelepryse 'n rekordhoogtepunt in Augustus 1997 bereik – 'n toename van 14,6 persent vanaf Desember 1996. Dit het gebeur ten spyte van 'n skielike daling van 58,2 persent in die maandelikse gemiddelde prysvlak van *goudmynaandele* van Mei 1996 tot Desember 1997. Vanaf Augustus 1997 tot Desember het die maandelikse gemiddelde vlak van die indeks van alle aandelepryse met 16,5 persent afgeneem. Die maandelikse gemiddelde waarde van goudmynaandele het met 12 persent in Januarie 1998 gestyg toe die prys van goud bestendig geword het. Ondanks hierdie toename in die prys van goudmynaandele, het die indeks van alle aandelepryse in Januarie 1998 met slegs 0,4 persent toegeneem.

Die afname in aandelepryse vanaf Augustus 1997 is hoofsaaklik veroorsaak deur die verswakking van beleggersvertroue in opkomende markte as gevolg van die probleme in Asië en dit het tot 'n bykomende element van onbestendigheid in aandeleprysbewegings op die

Aandelepryse



Johannesburgse Aandelebeurs bygedra. Die *indeks van alle aandelepryse* het aanvanklik effens met 2,5 persent van 'n hoogtepunt op 7 Augustus 1997 tot 22 Oktober afgeneem. Binne die bestek van vier handelsdae tot en met 28 Oktober het die indeks van alle aandelepryse toe met 19 persent gedaal. Die indeks het in die daaropvolgende ses verhandelingsdae kortstondig herstel voordat dit weer verswak het en 'n laagtepunt vir die kalenderjaar op 12 Desember 1997 bereik het. Dit het verder met 6 persent tot 'n nuwe laagtepunt op 12 Januarie 1998 gedaal. Hoewel die mark in die tweede helfte van Januarie 1998 sterk herstel het, was die indeks van alle aandelepryse teen die einde van die maand steeds 14 persent laer as die hoogtepunt op 7 Augustus 1997.

Die maandelikse gemiddelde *dividendopbrengskoers* op alle klasse aandele het van 2,46 persent in Januarie 1997 tot 2,31 persent in Julie afgeneem namate aandelepryse sterk toegeneem het, maar toe tot 2,70 persent in Januarie 1998 toegeneem namate aandelepryse laer beweeg het. Die maandelikse gemiddelde *verdiens-te-opbrengskoers* (goudmynaandele uitgesluit) het eweneens van 7,01 persent in Desember 1996 tot 6,56 persent in Julie 1997 afgeneem voordat dit tot 7,62 persent in Januarie 1998 toegeneem het. Die *prys-verdiens-te-verhouding* van alle klasse aandele, met die uitsondering van goudmynaandele, was gemiddeld sowat 14,9 oor die tydperk Januarie tot September 1997, maar het toe tot 13,1 in Januarie 1998 afgeneem namate verdienstes verstewig en aandelepryse verswak het. Die verswakking van aandelepryse in die laaste kwartaal van 1997 het veroorsaak dat die gewildheid van effeketrustbeleggings redelik drasties getaan het.

Tabel 19. Opbrengskoerse en prysverhoudings

Tydperk	Dividend- opbrengs- koers Persent	Verdiens-te- opbrengs- koers* Persent	Prys- verdiens-te- verhouding*
1996: Des.....	2,46	7,01	14,27
1997: Jan	2,46	6,89	14,51
Feb	2,37	6,68	14,96
Mrt	2,40	6,62	15,11
Apr	2,41	6,66	15,01
Mei	2,40	6,70	14,93
Jun	2,37	6,87	14,55
Jul	2,31	6,56	15,23
Aug	2,33	6,59	15,17
Sep	2,44	6,77	14,76
Okt	2,53	7,13	14,03
Nov	2,62	7,14	14,00
Des.....	2,74	7,57	13,21
1998: Jan	2,70	7,62	13,13

* Uitgesonderd goudmynaandele

Transaksies in onderaandele van effeketrusts het van maandelikse gemiddelde netto verkope van R1,3 miljard in die eerste tien maande van 1997 tot gemiddelde netto verkope van R1,1 miljard per maand in November en Desember verander.

Die marklikiditeit van die Johannesburgse Aandelebeurs, gemeet aan die jaarlikse omset as 'n persentasie van markkapitalisasie, het van 6,2 persent in 1995 en 10,9 persent in 1996 tot 18,3 persent in 1997 verbeter. Hierdie verbetering was deels 'n weerspieëling van die groter deelname van nie-inwoners, die verhoogde doeltreffendheid van verhandeling op die Johannesburgse Aandelebeurs en die gedeeltelike verslapping van deviesebeheer wat binnelandse institusionele beleggers toegelaat het om bateruiltransaksies met nie-inwonerbeleggers aan te gaan. Ondanks die verbetering het marklikiditeit volgens internasionale standaarde steeds laag gebly, hoofsaaklik as gevolg van die oorblywende deviesebeheer wat beleggingsgeleenthede van binnelandse beleggers beperk en institusionele beleggers sodoende verhinder om hul portefeuljes aktief te verhandel.

Ander finansiële markte

Die buitengewone skerp toename in die vlakke van bedrywigheid in die aandelemark, die groter deelname van nie-inwoners in die binnelandse markte vir sekuriteite en die probleme in Asië se finansiële markte het verhandeling in die *formele mark vir afgeleide instrumente* in 1997 'n hupstoot gegee. Verhandeling in *aandele-, rentekoerstermyn- en -opsiekontrakte* het dienoooreenkomstig met 25,1 persent toegeneem vanaf die vlakke wat in 1996 bereik is. Verhandeling van aandelekontrakte het hierdie soort verhandeling verreweg oorheers en was verantwoordelik vir 99,6 persent van alle kontrakte wat aangegaan is. Die aantal *termynkontrakte* wat verhandel is, het met 26,8 persent en die aantal *opsies op termynkontrakte* wat verhandel is, het met 23,8 persent van 1996 tot 1997 toegeneem. Nie-inwoner-deelname in hierdie mark het ook skerp toegeneem van 'n gemiddelde van 8,8 persent van die oop posisie in 1996 tot 28,3 persent in Desember 1997.

Sedert die bekendstelling van *rand-dollar-termynkontrakte* in Mei 1997, is slegs 475 sulke kontrakte teen die einde van Januarie 1998 verhandel. Tot die einde van Januarie 1998 het die aantal *aandele-opsiekontrakte* wat sedert hul bekendstelling in September 1997 verhandel is, 98 110 beloop. Vanaf die bekendstelling van *sekuriteitsregte* op die Johannesburgse Aandelebeurs in Oktober 1997 is altesaam 117 miljoen kontrakte teen die einde van Januarie 1998 aangegaan.

Verhandeling in die *landboustermynmark* is oorheers deur mieliekontrakte wat van 2 700 in 1996 tot 20 200 in 1997 toegeneem het – 68 persent hiervan was witmielie-kontrakte. Slegs 163 termynkontrakte in *koring* is sedert hul bekendstelling in November 1997 tot aan die einde van Januarie 1998 verhandel.

Handelstoestande in die *vaste-eiendomsmark* in die geheel en die mark vir residensiële eiendomme in die besonder, het in 1997 taamlik traag gebly, hoofsaaklik vanweë die betreklik hoë koste van verbandfinansiering. Die waarde van transaksies het met 7,6 persent van 1996 tot 1997 toegeneem, terwyl die aantal transaksies met slegs 2,7 persent oor dieselfde tydperk toegeneem het. Die gemiddelde waarde per transaksie het dus 'n styging van minder as 5 persent in 1997 getoon, wat heelwat laer as die ooreenstemmende koers van verbruikersprysinflasie was.

Openbare finansies

Die Mediumtermyn-begrotingsbeleidsverklaring

Die Minister van Finansies het die *Verklaring oor Begrotingsbeleid op die Medium Termyn* van 1997 op 2 Desember vrygestel. In die Verklaring word die beleidsraamwerk vir die begroting vir die fiskale jaar 1998/99 uiteengesit, die owerheid se doelstellings en mikpunte beskryf, 'n verduideliking gegee van die ekonomiese omgewing waarbinne die doelstellings nagestreef word en 'n raming gemaak van die totale vlak van bronne wat beskikbaar sal wees.

Die Verklaring moet as 'n verdere stap in die ontwikkeling van 'n oop, deursigtige en samewerkende beleidvormingsproses beskou word. Dit konstitueer nie 'n nuwe beleid nie, maar stel 'n bedryfsplan voor van die nasionale begroting, wat ontwerp is om gestalte te gee aan beleidsdoelstellings wat in vorige beleidsdokumente beskryf is. Hierdie doelstellings is:

- om die algehele begrotingstekort en die vlak van owerheidsontsparring te verminder;
- om volgehoue toenames in die algehele belastinglas te voorkom;
- om verbruiksbesteding deur die algemene owerheid in verhouding tot die bruto binnelandse produk te verminder; en
- om die algemene owerheid se bydrae tot bruto binnelandse vaste investering te verhoog.

'n Sleutelement van die Verklaring is die bestedingsraamwerk (*Medium Term Expenditure Framework*) wat 'n proses van rollende begrotings oor drie jaar instel. Dit is die eerste stappe om die begrotingsproses oor die algemeen op te knap. Die klem sal op deursigtigheid, uitsetgedrewe program-begroting en politieke prioritisering val.

Die aanvaarding en publiserings van 'n bestedingsraamwerk deur die nasionale en provinsiale regerings vir drie jaar hou belangrike voordele in. Die belangrikste hiervan is:

- departemente en agentskappe sal aangemoedig word om hul beleidsvoorstelle binne realistiese begrotingvooruitskattings te beoordeel;
- 'n raamwerk sal geskep word waarbinne die regering die finansiële implikasies van beleidsvoorstelle kan beoordeel;
- mediumtermynbeplanning deur departemente en ander bestedingsliggame sal aangemoedig word, wat tot groter doeltreffendheid sal lei;
- die bestuur van die uitstel van besteding sal vergemaklik word omdat departemente en ander bestedingsliggame toegelaat sal word om kontrakte te sluit, wat toekomstige betalings insluit; en
- die geloofwaardigheid van fiskale mikpunte sal verbeter.

Tabel 20. Fiskale vooruitskattings
R miljarde

	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001
Nasionale begrotings- inkomste	162,0	178,1	195,7	216,2
Nasionale begrotings- besteding	186,8	202,1	218,5	241,5
Tekort.....	24,8	24,0	22,8	25,3
Persentasie van die bruto binnelandse produk				
Nasionale begrotings- inkomste	26,2	26,0	25,8	25,6
Nasionale begrotings- besteding	30,2	29,5	28,8	28,6
Tekort.....	4,0	3,5	3,0	3,0

Fiskale vooruitskattings op medium termyn

Die regering se inkomste- en bestedingvooruitskattings vir die fiskale jare 1998/99 tot 2000/01 het op die volgende aannames berus:

- groei in die reële bruto binnelandse produk sal toeneem van 2 persent in die fiskale jaar 1997/98 tot 3 persent in die fiskale jaar 1998/99, 4 persent in die fiskale jaar 1999/2000 en 5 persent in die fiskale jaar 2000/01; en
- die inflasiekoers sal afneem van 9 persent in die fiskale jaar 1997/98 tot 7,5 persent in die fiskale jaar 1998/99, 6,5 persent in die fiskale jaar 1999/2000 en 6 persent in die fiskale jaar 2000/01.

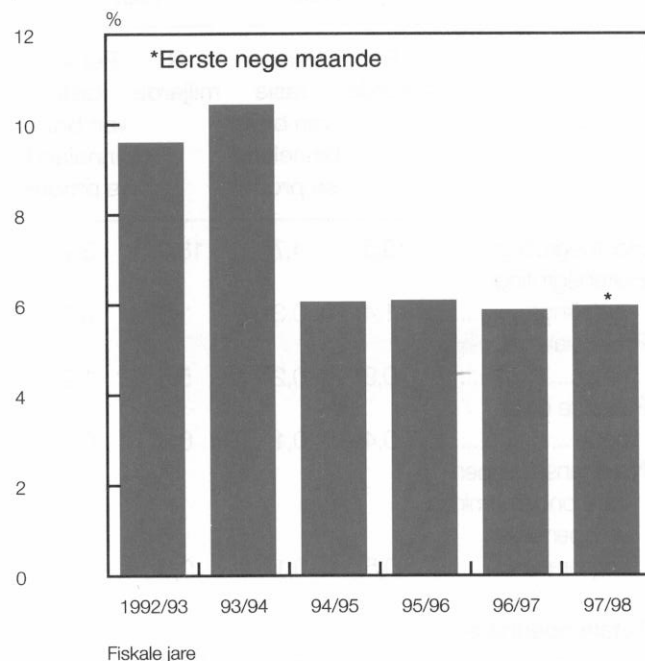
Hierdie aannames sal natuurlik in die toekoms in die lig van werklike ekonomiese prestasie aangepas word. Die fiskale vooruitskattings vir die jaar 1998/99 tot 2000/01 word in Tabel 20 voorgestel.

Wat owerheidsbesteding betref, is die regering verbind tot fiskale omsigtigheid. Indien die ekonomie nie so vinnig sou groei soos in die makro-ekonomiese vooruitskattings aangedui word nie, sal die groei in owerheidsbesteding laer as in die vooruitskattings moet wees.

Leningsbehoefte van die openbare sektor

Die *leningsbehoefte van die openbare sektor* (dit wil sê die tekort voor lenings en skuldaflissing van die gekonsolideerde sentrale regering, provinsiale regerings, plaaslike owerhede en die nie-finansiële openbare ondernemings en openbare korporasies) het van R21,9 miljard in die eerste drie kwartale van die fiskale jaar 1996/97 tot R27,1 miljard in die eerste drie kwartale van die fiskale jaar 1997/98 toegeneem. In verhouding tot die bruto binnelandse produk het die leningsbehoefte van die openbare sektor van 5,3 persent in die eerste drie

Leningsbehoefte van die openbare sektor as persentasie van bruto binnelandse produk



kwartale van die fiskale jaar 1996/97 tot 6,0 persent in die ooreenstemende tydperk van die fiskale jaar 1997/98 toegeneem.

Die groter leningsbehoefte van die openbare sektor kan hoofsaaklik aan die toename in die leningsbehoefte van die *provinsiale regerings* toegeskryf word, wat in die eerste nege maande van die fiskale jaar 1996/97 van R0,9 miljard tot R5,6 miljard in die eerste nege maande van die fiskale jaar 1997/98 toegeneem het. Dit was hoofsaaklik die gevolg van hoër vlakke van besteding deur 'n aantal provinsiale regerings aan onderwys, gesondheids- en welsynsdienste. Sommige van die provinsiale regerings het toegang tot bankkredietbronne verkry vir die finansiering van hul inkomstetekorte, wat gelei het tot 'n toename in die provinsiale regerings se skuld by banke van R332 miljoen aan die einde van Maart 1997 tot R2 834 miljoen aan die einde van Desember 1997.

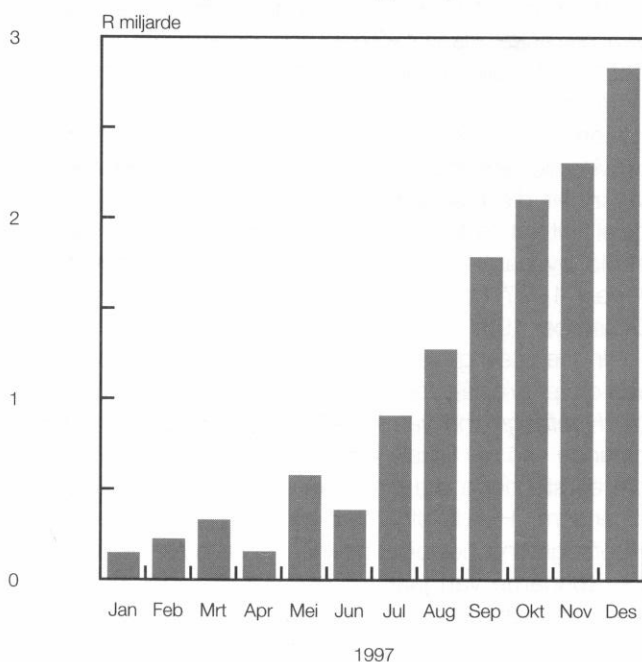
In teenstelling met die toename in die leningsbehoefte van die provinsiale regerings, het die *leningsbehoefte van die Hoofbegroting* van R19,5 miljard in die eerste nege maande van die fiskale jaar 1996/97 tot R18,0 miljard in die eerste nege maande van die fiskale jaar 1997/98 afgeneem. Hierdie afname in die leningsbehoefte van die Hoofbegroting het plaasgevind nieetenaande 'n koers van toename van jaar tot jaar van 6,8 persent in die oordragte aan die provinsiale regerings in die eerste nege maande van die fiskale jaar 1997/98. Daar is vir die fiskale jaar 1997/98 begroot vir oordragte van R80,4

Tabel 21. Leningsbehoefte van die openbare sektor

	April-Desember 1996		April-Desember 1997	
	R miljarde	Persen- tasie van bruto binneland- se produk	R miljarde	Persen- tasie van bruto binneland- se produk
Hoofbegroting	19,5	4,7	18,0	3,9
Buitebegrotings- instellings	1,4	0,3	1,6	0,3
Provinsiale rege- rings	0,9	0,2	5,6	1,2
Plaaslike ower- hede	0,4	0,1	0,9	0,2
Nie-finansiële open- bare ondernemings en openbare korporasies	-0,5	-0,1	0,8	0,2
Totale openbare sektor	21,9	5,3	27,1	6,0

miljard na die provinsiale regerings, wat dui op 'n toename van slegs 2 persent teenoor die werklike oordragte wat in die fiskale jaar 1996/97 gemaak is.

Bankskuld van provinsiale regerings



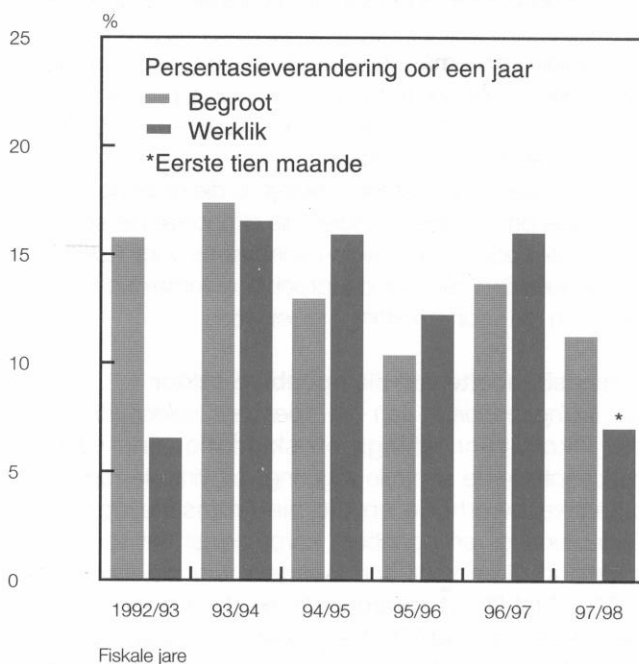
Besteding deur die algemene owerheid het in die eerste nege maande van die fiskale jaar 1997/98 teen 'n koers van 10,9 persent van jaar tot jaar toegeneem in vergelyking met 'n toename van 14,9 persent in die eerste nege maande van die vorige fiskale jaar. Ondanks hierdie verlansaming in die besteding van die algemene owerheid oor twaalf maande, het dit steeds in verhouding tot die bruto binnelandse produk van 36,9 persent in die eerste nege maande van die fiskale jaar 1996/97 tot 37,5 persent in die eerste nege maande van die fiskale jaar 1997/98 toegeneem.

Totale inkomste van die algemene owerheid het in die eerste nege maande van die fiskale jaar 1997/98 teen 'n koers van 8,9 persent van jaar tot jaar toegeneem, in vergelyking met 'n toename van 15,0 persent in die ooreenstemmende tydperk van die voorafgaande fiskale jaar. Dit het tot 'n effense afname in die verhouding van totale inkomste tot die bruto binnelandse produk van 31,4 persent in die eerste nege maande van die fiskale jaar 1996/97 tot 31,3 persent in die eerste nege maande van die fiskale jaar 1997/98 gelei.

Skatkisrekening

Skatkisuitreikings aan staatsdepartemente (aangepas om kontantvloeiinge te weerspieël) het in die eerste nege maande van die 1997/98-fiskale jaar R139,8 miljard of 74,8 persent van die totale begrote besteding vir die jaar in die geheel beloop. Dit het die toename van jaar tot jaar in skatkisuitreikings in die eerste nege maande van die fiskale jaar 1997/98 op 6,8 persent te staan gebring; die Begroting het vir die volle fiskale jaar vir 'n toename van

Begrote en werklike skatkisontvangste



Tabel 22. Persentasietoename in staatsinkomste in die fiskale jaar 1997/98

Inkomste-kategorieë	Begrote voorsiening vir die volle jaar	Toename van jaar tot jaar vir die eerste nege maande
Doeane en aksyns	8,0	1,3
Doeane	4,3	-5,2
Aksyns	15,9	16,7
Brandstofheffing	10,4	16,2
Betalings aan BLNS-lande*	20,0	20,0
Binnelandse inkomste	11,7	12,8
Inkomstebelasting	13,5	12,6
Belasting op toegevoegde waarde	11,4	13,8
Totale skatkisontvangste	11,2	8,2

* Botswana, Lesotho, Namibië en Swaziland

6,1 persent voorsiening gemaak. In verhouding tot die bruto binnelandse produk, het skatkisuitreikings in die eerste nege maande van die 1997/98-fiskale jaar 30,7 persent beloop teenoor 31,5 persent wat in die ooreenstemmende tydperk van die vorige jaar aangeteken is.

As skatkisuitreikings gedurende Januarie 1998 ook in aanmerking geneem word, het hierdie uitreikings in die eerste tien maande van die 1997/98-fiskale jaar R152,3 miljard bedra of 4,7 persent meer as in die eerste tien maande van die voorafgaande jaar. Skatkisuitreikings gedurende hierdie tydperk was gelyk aan 81,5 persent van die totale besteding wat vir die jaar in die geheel begroot is.

In die eerste nege maande van die fiskale jaar 1997/98 het *skatkisontvangste* (met die uitsluiting van buitengewone ontvangste) R118,8 miljard bedra of 8,2 persent meer as in die ooreenstemmende tydperk van die vorige fiskale jaar. 'n Toename van 11,2 persent was in die Begroting vir die fiskale jaar in die geheel voorsien.

Met die uitsondering van inkomstebelasting en doeaneregte, het al die ander algemene kategorieë van inkomste die begrotingsverwagtinge tot dusver oorskry. Die swak groei in die invordering van doeaneregte was deels te wyte aan die versnelde implementering van tariefverlagings waarop in die Finale Akte van die Uruguay Rondte van onderhandelings oor die internasionale handel ooreengekom is. Ondanks hierdie tekortkoming in

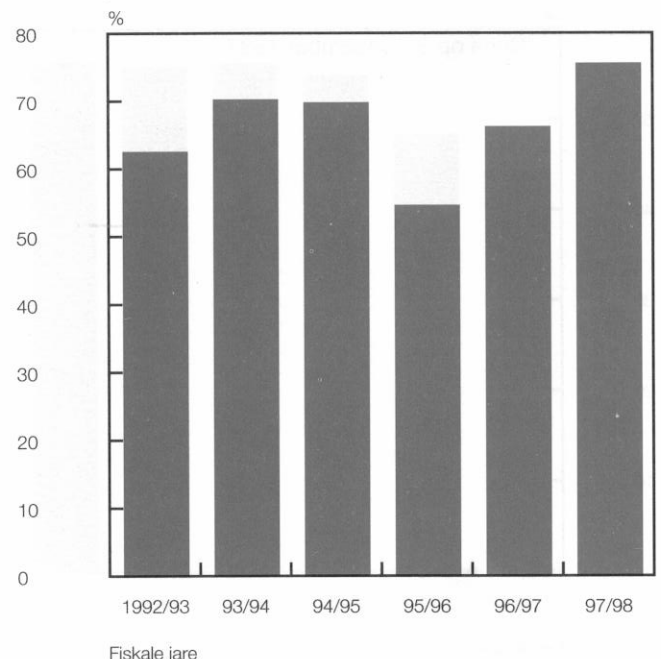
die groei van inkomste, het die kontraktuele verantwoordelikheid ten opsigte van die oordragte na lede van die Suid-Afrikaanse Doeanes-unie natuurlik onveranderd gebly.

Gedurende Januarie 1998 het skatkisontvangste met 1,9 persent in vergelyking met Januarie 1997 afgeneem. Dit het die koers van toename van jaar tot jaar in skatkisontvangste op 7,0 persent in die eerste tien maande van die fiskale jaar 1997/98 te staan gebring. Skatkisontvangste het gedurende hierdie tydperk 82,4 persent beloop van die totale inkomste van R162,0 miljard wat in die Begroting vir die fiskale jaar in die geheel voorsien is.

Die netto gevolg van die laer-as-begrote inkomste en hoër-as-begrote besteding was 'n *tekort voor lenings en skuldaflissing* van R20,9 miljard in die eerste nege maande van die fiskale jaar 1997/98. In die eerste nege maande van die fiskale jaar 1997/98 het die tekort voor lenings en skuldaflissing in verhouding tot die bruto binnelandse produk 4,6 persent bedra, in vergelyking met die 5,1 persent gedurende die ooreenstemmende tydperk van die vorige fiskale jaar en 4,0 persent wat vir die huidige fiskale jaar in die geheel voorsien is.

Die werklike tekort gedurende die *eerste tien* maande van die fiskale jaar 1997/98 het R18,7 miljard bedra wat 75,7 persent van die begrote tekort vir die jaar in die geheel verteenwoordig. Hierdie persentasie was aansienlik hoër as die 67,3 persent van die tekort vir die volle fiskale jaar wat in die eerste tien maande van die voorafgaande fiskale jaar gerealiseer het en die gemiddelde

Skatkistekort in eerste tien maande as persentasie van begrote tekort vir die fiskale jaar



van 64,8 persent wat in die voorafgaande vyf fiskale jare aangeteken is.

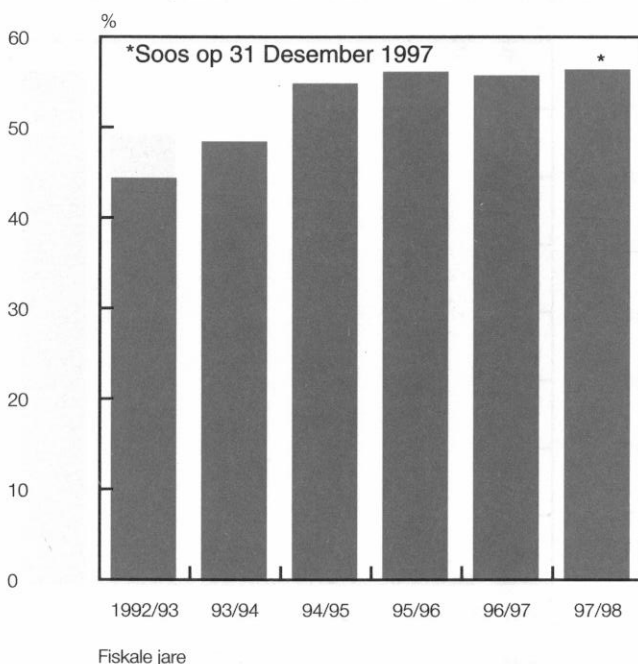
Soos in die volgende tabel aangedui word, is die grootste deel van die tekort in die eerste tien maande van die fiskale jaar 1997/98 deur middel van die uitreiking van nuwe staatseffekte gefinansier:

	R miljoene
Staatseffekte (diskonto ingesluit)	20 714
Min: Diskonto op staatseffekte	3 867
Netto ontvangste van staatseffekte uitgereik	16 847
Skatkiswissels	3 733
Buitengewone ontvangste	2 937
Buitelandse lenings	
Aflossing van IMF-lening**	-1 036
Ander lenings	3 758
Nie-bemarkbare sekuriteite	-99
Aflossing van Namibiese skuld	-203
Aflossing van Artikel 239-skuld*	-3 551
Oordrag vanaf IMF-rekeninge**	1 036
Toename in beskikbare kontantsaldo's	-4 679
Totale netto finansiering	18 743

* Skuld van die voormalige Transkei, Bophuthatswana, Venda en Ciskei en selfregerende state.

** Kontra-inskrywings

Totale staatskuld as persentasie van bruto binnelandse produk



Totale staatskuld het van R310,6 miljard aan die einde van Maart 1997 tot R336,1 miljard aan die einde van Desember 1997 gestyg. In verhouding tot die bruto binnelandse produk het die staatskuld van 55,8 persent aan die einde van Maart 1997 tot 56,5 persent aan die einde van Desember 1997 toegeneem. Staatskuld het in Januarie 1998 bly toeneem en aan die einde van die maand R336,3 miljard beloop.

Aansuiweringsbegroting vir die fiskale jaar 1997/98

In die Aansuiweringsbegroting wat op 13 Februarie 1998 in die Parlement ter tafel gelê is, is addisionele besteding van R9,1 miljard vir die fiskale jaar 1997/98 goedgekeur. Indien die uitstel van besteding na daaropvolgende fiskale jare en ander aanpassings egter in aanmerking geneem word, word die hersiene ramings van besteding vir die fiskale jaar 1997/98 met R2,7 miljard tot R189,5 miljard verhoog. Die hersiene bestedingsraming in die fiskale jaar 1997/98 in verhouding tot die bruto binnelandse produk sal na verwagting 30,5 persent wees, wat meer is as die aanvanklike begrotingsraming van 30,0 persent, maar minder as die 31,8 persent wat in die voorafgaande fiskale jaar gerealiseer het.

Die oorspronklike inkomsteraming van R162 miljard is onveranderd in die Aansuiweringsbegroting gelaat, wat 'n opwaartse aanpassing van R24,8 miljard tot R27,5 miljard in die Begrotingstekort tot gevolg het. Dit is gelyk aan 4,5 persent van die hersiene raming van die bruto binnelandse produk teenoor die verwagte tekort van 4,0 persent van die bruto binnelandse produk wat deur die Minister van Finansies in die vooruitsig gestel is toe hy sy oorspronklike begrotingsvoorstelle in Maart 1997 aan die Parlement voorgelê het.

Tabel 23. Aansuiweringsbegrotingsramings vir 1997/98

	R miljarde
Oorspronklike begrote besteding*	186,7
Plus: Addisionele besteding	7,0
	193,7
Min: Uitstel van besteding	3,6
Besparings en opskortings	0,6
Totale aangesuiwerde besteding	189,5
Totale inkomste	162,0
Aangesuiwerde tekort	27,5
Aangesuiwerde tekort as persentasie van die bruto binnelandse produk	4,5

* Hierdie bedrag sluit 'n bedrag van R2,1 miljard in waarvoor voorsiening gemaak is, maar wat nie in die Begroting van Maart 1997 goedgekeur is nie

Bruto vaste investering in die makro-ekonometriese model van die Reserwebank

deur C.J. Pretorius

Inleiding

'n Volgehoue toename in produktiwiteit of 'n uitbreiding van produksievermoë verteenwoordig twee van die belangrikste faktore wat nodig is om langtermyn ekonomiese groei te behaal. Die uitbreiding van 'n land se produksievermoë verg addisionele investering of kapitaalvorming. Internasionale studies dui daarop dat 'n hoë verhouding van investering relatief tot bruto binnelandse produksie een van die belangrikste voorvereistes is om volgehoue hoë ekonomiese groei te bewerkstellig.

Suid-Afrika se swak investeringsprestasie gedurende die tagtigerjare en die eerste deel van die negentigerjare kan gesien word as een van die vernaamste redes vir die beperkte uitbreiding van die land se groeivermoë. In verhouding tot die bruto binnelandse produk het vaste investering afgeneem van 27,8 persent in 1981 tot 15,5 persent in 1993 maar het sedertdien tot 17,0 per sent in 1996 toegeneem.

Soos in talle ander ontwikkelende lande, het die noodgedwonge regstelling van eksterne wanbalanse in Suid-Afrika gedurende die tagtigerjare gepaard gegaan met groot afnames, relatief tot die bruto binnelandse produk, in besteding aan investering en binnelandse besparings. Die laer vlakke van investering het laer ekonomiese groeikoerse en minder werkgeleenthede tot gevolg gehad. Wêreldwye integrasie en groter toegang tot internasionale markte en kapitaalbronne, tesame met laer begrotingstekorte wat sedert 1994 meer binnelandse besparings beskikbaar gestel het vir die finansiering van investering deur die private sektor, het tot 'n opwaartse neiging in private investering in die laaste paar jare gelei en gevolglik tot hoër ekonomiese groei.

Hoewel investering tans minder as 20 persent van die totale bruto binnelandse produk bedra, is hierdie bestedingskomponent baie belangrik om hoër ekonomiese groei te bewerkstellig. Die rede hiervoor is dat skommelings in die vlak van besteding aan investering oor die verloop van die konjunktuuksiklus neig om baie groter te wees as skommelings in enige van die ander makro-ekonomiese bestedingsgrootte.

Besteding aan investering word normaalweg in vier klasse verdeel, naamlik infrastrukturele investering in die openbare sektor, residensiële konstruksie, vaste investering deur die private sakesektor en die netto verandering in voorrade van sake-ondernemings. Die rede vir hierdie onderskeid is daarin geleë dat elkeen van hierdie klasse deur verskillende faktore bepaal word en dat hulle aansienlik verskillend op skommelings in ekonomiese bedrywigheid reageer. Hierdie artikel spits die aandag hoofsaaklik toe op vaste investering in die private sakesektor.

Die oogmerk met die artikel is om die vergelyking wat vaste investering in die private sektor te beskryf soos dit in die makro-ekonometriese model van die Reserwebank voorkom. Die eerste afdeling gee 'n oorsig van Jorgenson se neo-klassieke vaste-investeringsteorie waarop die geskatte investeringsfunksies in die model gegrond is. Die tweede afdeling bied 'n oorsig van mediumtermynneigings in bruto vaste investering soos dit in die nasionale rekening van Suid-Afrika aange-teken word. Die daaropvolgende afdelings beskryf die verklarende veranderlikes wat in die gedragsvergelyking voorkom, asook die spesifikasie en ekonometriese skatting van die investeringsvergelyking. 'n Paar samevattende opmerkings word in die laaste afdeling gemaak.

Die neo-klassieke vaste-investeringsteorie

Die neo-klassieke teorie van optimale kapitaalvorming, soos dit deur Irving Fisher (Fisher, 1930) in die twintigerjare geformuleer is, is wesenlik deur Jorgenson en andere aangepas. Die grootste aantrekkingskrag van Jorgenson se metodiek is dat dit 'n model vir investeringsbesteding ontwikkel het wat rentekoerse, die omvang van produksie, die pryse van kapitaalgoedere en die bestaande kapitaalvoorraad in 'n samehangende raamwerk saamvat. Die sentrale teoretiese kenmerk van die neo-klassieke teorie is die begrip van gebruikers-koste van kapitaal, wat beskryf kan word as die prys van dienste wat deur kapitaal gelewer word.

Die Cobb-Douglas-produksiefunksie kan gebruik word om die produksieproses van 'n individuele onderneming toe te lig. Die proses kan vereenvoudig word deur te aanvaar dat die onderneming slegs een produk produseer deur gebruik te maak van twee insette, naamlik kapitaal en arbeid. As die omvang van produksie aangedui word deur Q , arbeid deur L en die kapitaalvoorraad deur K , dan kan die produksiefunksie van die onderneming in tydperk t deur die volgende vergelyking aangedui word:

$$Q_t = F(L_t, K_t)$$

Die neo-klassieke teorie veronderstel dat die onderneming se oogmerk is om wins oor die ekonomiese leeftyd van die bates te maksimeer. Wins word omskryf as bruto inkomste minus die koste van lopende insette en belastinge. Inkomste word omskryf as die produk van die prys per eenheid van uitset en die hoeveelheid geproduseer. Arbeidskoste word omskryf as die loonkoers vermenigvuldig met die hoeveelheid arbeid in

diens gestel en kapitaalkoste as die produk van die eenheidskoste van kapitaaldienste en die hoeveelheid kapitaaldienste benut. Die wins van die onderneming kan gevolglik voorgestel word deur:

$$R = pQ - wL - qK - T \quad (1)$$

waar R = netto wins;
 p = prys per eenheid van die produk;
 Q = hoeveelheid geproduseer;
 w = loonkoers;
 L = hoeveelheid arbeid;
 q = koste van kapitaaldienste;
 K = hoeveelheid kapitaaldienste; en
 T = belastinge.

Die waarde van die onderneming in die tydperk $t = 0$ kan soos volg voorgestel word:

$$V = \int_0^{\infty} e^{-rt} (pQ - wL - qK - T) dt \quad (2)$$

waar r 'n verdiskonteringskoers onafhanklik van t voorstel.

Die teenswoordige waarde van die onderneming is gelyk aan die verdiskonteerde waarde van die verwagte toekomstige netto opbrengste. Die oogmerk van die onderneming is om vergelyking 2 te maksimeer onderhewig aan die volgende beperkings:

$$Q_t = F(L_t, K_t)$$

$$I_t = \delta K_t + K, \text{ waar } K = \frac{dK}{dt} \quad (3)$$

I_t verteenwoordig bruto vaste investering en δ die waardeverminderskoers. Vergelyking 3 veronderstel dat waardevermindering proporsioneel is aan die kapitaalvoorraad.

Die oplossing van die onderneming se optimaliseringsprobleem en die afleiding van 'n formule vir die gebruikerskoste van kapitaal word in Bylae A opgesom. Winste oor die leeftyd van 'n bate sal gemaksimeer word indien die grensproduk van arbeid gelyk is aan die verhouding van die prys van dienste deur arbeid gelewer tot die prys van die eindproduk, ook bekend as die reële loon:

$$\frac{\partial f}{\partial L} = \frac{w}{p}$$

Die optimale kapitaalvoorraad word bereik wanneer die grensproduk van kapitaal gelyk is aan die verhouding van die gebruikerskoste van kapitaal tot die prys van die produk, ook bekend as die reële gebruikerskoste van kapitaal:

$$\frac{\partial F}{\partial K} = \frac{c}{p}$$

waar c die gebruikerskoste van kapitaal aandui en omskryf word as:

$$c = q \left(\delta + r \frac{q}{q} \right) \quad (8)$$

Die gebruikerskoste van kapitaal kan ook gesien word as die implisiete prys van die koste van kapitaalgebruik in die produksieproses. Die onderneming behoort op te tree asof dit kapitaal aan homself verhuur en besluite neem in die lig van die implisiete koste van die gebruik van die kapitaal. In eenvoudige modelle bestaan die implisiete koste uit drie elemente:

- die koste wat met die verkryging van die bate verband hou;
- die koste wat met die leningskapitaal verband hou; en
- die waardevermindering van die kapitaal tydens die tydperk van gebruik verminder met enige kapitaalwinste van die onderneming gedurende daardie tydperk.

Die uitwerking van belastingbeleid op investering

Robert Coen (1968 : 200-211) het 'n ondersoek gedoen om die uitwerking van belastingtoegewings in die fabriekswese te bepaal. Belastingtoegewings kan kapitaaluitgawes op twee maniere aanwakker:

- Belastingtoegewings verhoog die na-belasting opbrengskoers op kapitaal deur die vermindering van die bedrag aan belasting wat op die inkomste uit bates betaal moet word.
- Belastingaansporings verminder die belastingverpligtinge en verhoog daardeur die kontantvloeï en fondse wat vir investeringsbesteding beskikbaar is.

Die neo-klassieke model verskaf 'n handige raamwerk om belastingbeleid te ontleed en die uitwerking daarvan op investeringsbesteding te bepaal. Coen het die begrip van gebruikerskoste van kapitaal uitgebrei om die belastingverpligtinge van ondernemings en die uitwerking van belastingtoegewings op investering in berekening te bring.

Die invloed van belastingkoerse op investeringsgedrag word in Bylae B opgesom. Daar word aangedui dat die onderneming sal aanhou om sy kapitaal uit te brei solank as die grensproduk van kapitaal die reële gebruikerskoste van kapitaal oorskry.

$$\therefore p \frac{\partial Q}{\partial K} > q (r + \delta) (1 - uB) / (1 - u) = c \quad (11)$$

$$\text{Dit wil sê } \frac{\partial Q}{\partial K} > [q (r + \delta) (1 - uB) / (1 - u)] / p$$

$$\text{of } \frac{\partial Q}{\partial K} > \frac{c}{p}$$

'n Toename in die koers waarteen belasting gehef word, hetsy deur 'n verhoging in die belastingkoers of deur 'n vermindering van aansporings, sal die gebruikerskoste van kapitaal verhoog en vaste investering ontmoedig. Daarenteen sal 'n verlaging in die koers waarteen belasting gehef word die gebruikerskoste van kapitaal verlaag en vaste investering aanmoedig.

Indien $u = 0$, dit wil sê as geen maatskappybelasting betaal word nie, sal vergelyking 11 vereenvoudig kan word na 'n vergelyking soortgelyk aan vergelyking 8, hoewel die kapitaalwinst nie in hierdie vergelyking in ag geneem is nie.

Belastingtoegewings

Hierdie ontleding kan uitgebrei word om belastingtoegewings ook in te sluit. Ten einde investering aan te moedig, kan 'n gedeelte k van kapitaalluitlegte teen belastingverpligtinge afgeskryf word. Die belastingkorting is dan kq en die eenheidsprys van kapitaalgoedere nadat voorsiening vir belastingtoegewings gemaak is, is $(1-k)q$. Die gebruikerskoste van kapitaal vereenvoudig derhalwe na:

$$c = q (r + \delta) (1 - k - uB) / (1 - u) \quad (12)$$

Indien die belastingtoegewings gepaard gaan met 'n waardeverminderingstoelaes op nuwe kapitaalluitlegte teen 'n koers van, sê b , dan word die verdiskonteerde waarde van die belastingbesparing wat deur die waardeverminderingstoelaes B bewerkstellig word, met $(1-b)B$ vervang. Die uitdrukking vir die gebruikerskoste van kapitaal verander dan na:

$$c = q (r + \delta) (1 - k - u (1 - b)B) / (1 - u) \quad (13)$$

Die invloed van belastingtoegewings op die gebruikerskoste van kapitaal kan dus saamgevat word deur:

- veranderinge in die korporatiewe belastingkoers (u);
- die uitwerking van waardeverminderingstoelaes (uB); en
- die toestaan van belastingtoegewings op nuwe investering (k).

Vir doeleindes van hierdie studie is aanvaar dat daar geen voorsiening vir belastingtoegewings gemaak word nie en dat $b = 0$; dit wil sê, die definisie soos in vergelyking 12 word gebruik vir die begrip gebruikerskoste van kapitaal (c).

Die berekening van die gebruikerskoste van kapitaal

Die formule wat gebruik word vir die berekening van die gebruikerskoste van kapitaal word deur die volgende vergelyking gegee:

$$c = q (r + \delta) (1 - uB) / (1 - u) \quad (12)$$

- waar
- c = gebruikerskoste van kapitaal;
 - q = die eenheidsprys van nuwe kapitaaltoerusting;
 - r = 'n rentekoers waarteen die onderneming finansiële bronne kan leen of uitleen;
 - δ = 'n waardeverminderingkoers;
 - u = maatskappybelastingkoers; en
 - B = die verdiskonteerde waarde van waardeverminderingstoelaes wat verband hou met kapitaalluitgawes van $R1$;

Dit is egter nie altyd moontlik om al die veranderlikes van die vergelyking vir die gebruikerskoste van kapitaal regstreeks te bereken of te meet nie en daarom is van die volgende ramings gebruik gemaak:

- q : Die eenheidskoste van nuwe kapitaalgoedere word benader deur die afgeleide deflator vir vaste investering.
- r : Die opbrengskoers op langtermynstaatseffekte wat op die effektemark verhandel word is as 'n langtermynrentekoers gebruik.
- δ : die waardeverminderingkoers vir 'n tydperk t word bereken as:

$$\delta_t = \frac{W_t}{K_{t-1}}$$

waar W_t = waardevermindering toegelaat in periode t en

K_{t-1} = kapitaalvoorraad teen die einde van periode $t-1$.

$$B = \sum_{i=1}^{\infty} d_i (1 + r)^{-i} \quad (10)$$

waar d_i = waardeverminderingstoelaes wat vir belastingdoeleindes toegelaat word.

Indien aanvaar word dat die bates oor tydperke θ afgeskryf word, dan kan die vergelyking vir die verdiskonteerde waarde van waardeverminderingstoelaes soos volg vereenvoudig word (soos in Bylae C):

$$B = \frac{1}{r\theta} (1 - e^{-r\theta})$$

Die leeftyd van die bate θ is gelyk aan die omgekeerde van die waardeverminderingkoers $\frac{1}{\delta}$.

Uit bogenoemde bespreking kan afgelei word dat die konsep van die gebruikerskoste van kapitaal 'n meer omvattende begrip is as dié van 'n rentekoers wat normaalweg in vaste investeringsfunksies gebruik word. Die begrip van die gebruikerskoste van kapitaal sluit veranderlikes in soos die algemene prysvlak, rentekoerse, belastingkoerse en waardeverminderingkoerse. Die invloed van hierdie veranderlikes word saamgevat in die veranderlike vir die gebruikerskoste van kapitaal.

Die sloeringstruktuur van vaste investering

Vaste investering vind normaalweg oor 'n lang tydperk plaas en daarom kan netto investering in die huidige tydperk gesien word as die resultaat van veranderinge in die kapitaalvoorraad en die gebruikerskoste van kapitaal oor 'n aantal voorafgaande tydperke. Die reële netto investering in tydperk t kan soos volg deur 'n kapitaalvoorraadaanpassings-model voorgestel word:

$$I_t = u(S) (K_t^* - K_{t-1}) + \delta K_{t-1} \quad (14)$$

waar I_t = reële bruto vaste investering;
 δ = waardeverminderingskoers;
 K = reële kapitaalvoorraad;
 K^* = gewenste kapitaalvoorraad;
 $u(S)$ = die sloeringstruktuur S , met $S_t = x_t - 1$

Die uitdrukking δK_{t-1} dui op die waardevermindering wat in tydperk t afgeskryf word. Vergelyking 14 kan vereenvoudig word om aan te dui hoe veranderinge in investeringsbesteding, waarskynlik met 'n tydsloering, op veranderinge in die gewenste kapitaalvoorraad, vorige veranderinge in investeringsbesteding en vorige veranderinge in die werklike kapitaalvoorraad sal reageer. Dit is aanvaarde gebruik in empiriese werk om die verspreiding van die gewigte van die gesloerde veranderlikes so te beperk dat dit 'n verloop aanneem wat deur 'n hoër-orde polinomiese funksie benader kan word.

Normaalweg is daar 'n lang tydsverloop vandat 'n investeringsbesluit geneem word totdat die werklike investering plaasvind. Aangesien die werklike kapitaalvoorraad nie onmiddellik op veranderinge in die gewenste kapitaalvoorraad reageer nie, is dit moontlik om die laer-orde koëffisiënte van die polinomiese sloeringstruktuur tot nul te beperk. Die polinomiese struktuur kan byvoorbeeld soos volg daaruit sien:

$$\alpha(S) = \alpha_4 S^4 + \alpha_5 S^5 + \alpha_6 S^6$$

Veranderinge in die huidige tydperk in die betrokke veranderlike kan dus beperk word sodat dit vir 'n voorafbepaalde aantal tydperke geen invloed op netto investering sal hê nie.

'n Verdere probleem is dat die gewenste kapitaalvoorraad nie regstreeks gemeet kan word nie en gevolglik met behulp van 'n ander stel aannames geskat moet word.

Bepaling van die gewenste kapitaalvoorraad

Volgens vergelyking 11 word die gewenste kapitaalvoorraad bereik wanneer die grensproduk van kapitaal gelyk is aan die reële gebruikerskoste van kapitaal, dit wil sê wanneer:

$$\frac{\partial Q}{\partial K} = \frac{c}{p}$$

Om 'n uitdrukking vir die vraag na kapitaal af te lei, word 'n spesifieke vraagfunksie soos die Cobb-Douglas-produksiefunksie veronderstel:

$$Q = A L^\alpha K^\beta$$

waar A , α , en β konstantes is en α die elasticiteit van uitset ten opsigte van arbeid en β die elasticiteit van uitset ten opsigte van kapitaal verteenwoordig. Optimaliseringsbesluitnemingsreëls toon dat winsmaksimering sal plaasvind wanneer:

$$K = \beta \frac{pQ}{c}$$

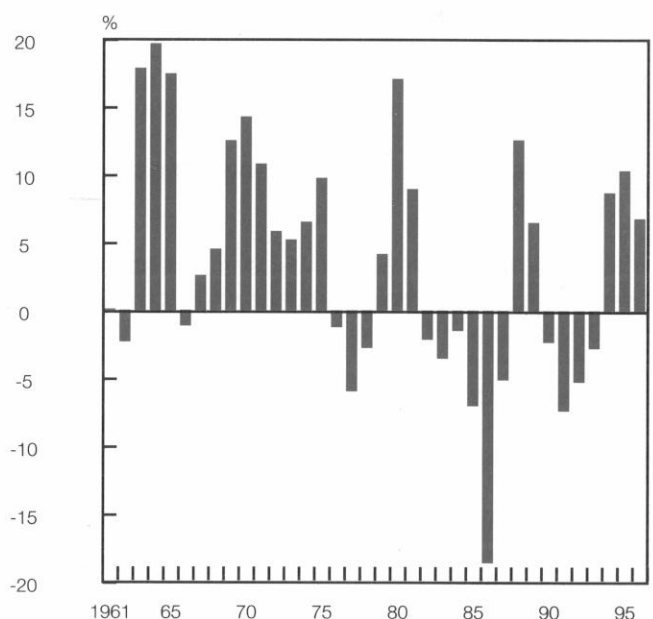
Die gewenste kapitaalvoorraad kan dus geskat word as die verhouding van die waarde van die uitset en die gebruikerskoste van kapitaal.

Die gewenste kapitaalvoorraad is dan gelyk aan $K^* = \frac{pQ}{c}$, waar pQ die toegevoegde waarde in 'n spesifieke sektor en c die gebruikerskoste van kapitaal in daardie sektor voorstel.

Mediumtermynneigings in bruto vaste investering

Die gemiddelde jaarlikse groeiakoers in totale reële bruto binnelandse vaste investering het sedert die sestigerjare beduidend gedaal. Die groeiakoers het gedaal vanaf 'n gemiddelde van byna 8 persent in die sestigerjare tot 'n

Grafiek 1: Groei in reële vaste investering, 1961-1996

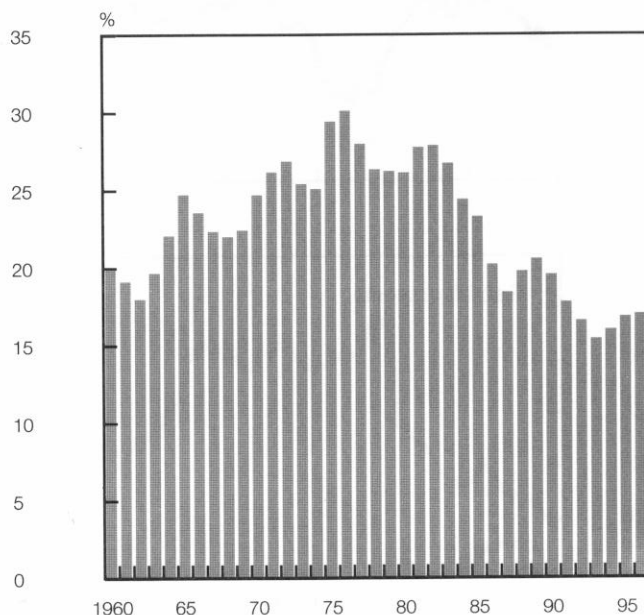


gemiddelde van 4,7 persent in die sewentigerjare en daarna tot 'n gemiddelde van minder as 1 persent in die tagtiger- en vroeë negentigerjare. Die ekonomiese opswaafase wat in Mei 1993 'n aanvang geneem het, is gekenmerk deur 'n sterk herstel in die groei van reële bruto vaste investering gedurende 1994 en 1995, maar die toenames in investeringsbesteding het aan die einde van 1996 weer ietwat verlangsaam. Die dalende groeitendens in bruto binnelandse vaste investering word in Grafiek 1 uitgebeeld.

Vaste investering se afnemende aandeel in die bruto binnelandse produk word in Grafiek 2 getoon. Bruto vaste investering as 'n persentasie van bruto binnelandse produk het van 'n gemiddelde van byna 27 persent in die sewentigerjare tot 'n gemiddelde van 17 persent in die vroeë negentigerjare gedaal. Hierdie verhouding het in 1976 'n hoogtepunt van 30,1 persent bereik, waarna dit afwaarts geneig het en in 1993 'n laagtepunt van slegs 15,5 persent bereik het. Die verhouding het sedertdien effens herstel tot 17,0 persent in 1996. Hierdie vlak van vaste investering is nietemin heelwat laer as die meer as 25 persent wat algemeen beskou word as 'n voorwaarde vir 'n volgehoue hoë ekonomiese groeikoers.

Tabel 1 toon dat dalings in die reële vaste investering deur openbare owerhede en openbare korporasies sedert die tagtigerjare hoofsaaklik verantwoordelik was vir die laer groei in investering. Die groei in vaste investering deur die private sektor het ook verlangsaam, maar tydperke van volgehoue dalende investering is nie in hierdie sektor ondervind nie.

Grafiek 2: Bruto vaste investering as persentasie van bruto binnelandse produk



Tabel 1. Gemiddelde jaarlikse groeikoerse in reële vaste investering volgens tipe organisasie

Persent

	Openbare owerhede	Openbare korporasies	Private sakeondernemings	Totaal
1961-1969	7,6	15,0	7,4	7,9
1970-1979	2,8	14,9	3,3	4,7
1980-1989	-2,4	-1,9	3,7	0,7
1990-1996	-6,3	-0,5	3,4	1,2
1960-1996	0,8	7,2	4,4	3,7

Die voortgesette inkrimping in reële vaste kapitaalvorming deur openbare owerhede kan toegeskryf word aan beduidende afnames in reële vaste investering deur die departemente sowel as sake-ondernemings van die algemene owerheid. Die dalende investering deur die algemene owerheid is deels 'n weerspieëling van die regering se groter beklemtoning van lopende uitgawes aan maatskaplike versorging asook probleme wat ondervind word met die vermindering van verbruik deur die owerheid.

Die dalende vaste kapitaalbesteding van openbare korporasies was deels 'n regstelling van die vroeëre skepping van oorskot kapasiteit deur sommige van hierdie ondernemings. Dit het ook deel gevorm van 'n doelgerigte kostebesnoeiingstrategie wat gemik was op die verbetering van die koste-doeltreffendheid van openbare korporasies.

Die oënskynlike onwilligheid van die private sektor om in nuwe projekte gedurende die tagtiger- en vroeë negentigerjare te belê, kan toegeskryf word aan 'n aantal faktore, waaronder:

- 'n hoë vlak van onbenutte produksievermoë in die fabriekswese;
- die relatief hoë belastingvlakke in Suid-Afrika;
- die rasionalisering in die goudmynbedryf;
- tydperke van droogte en die hoë vlak van landbouskuld;
- 'n algemene gebrek aan sakevertroue as gevolg van onsekerheid oor toekomstige politieke ontwikkelinge;
- burgerlike onrus en geweld in talle dele van die land; en
- meer onlangs, die hoë voorkoms van gewelddadige misdaad.

Sedert 1993 het kapitaalbesteding aan 'n aantal groot projekte soos Columbus en Alusaf bygedra tot die herlewing van vaste investering. Namate die herstel in

Tabel 2. Investerings volgens tipe bate as persentasie van totale vaste investering

	1960 tot 1969	1970 tot 1979	1980 tot 1989	1990 tot 1996
Landbou, bosbou en visserij	8,3	5,9	4,5	3,6
Mynbou en steengroewery.....	8,7	7,4	12,2	10,5
Fabriekswese	19,0	19,9	19,6	24,9
Elektrisiteit, gas en water	8,1	9,4	13,3	8,2
Konstruksie	1,1	1,8	1,5	1,3
Groot- en kleinhan- del, verversing en akkommodasie.....	6,4	6,5	5,7	6,9
Vervoer, opberging en kommunikasie ...	14,1	14,6	10,6	8,4
Finansies, verseke- ring, vaste eiendom en sakedienste	17,2	17,6	20,7	23,4
Gemeenskaps-, maatskaplike en persoonlike dienste.....	17,0	16,8	12,0	13,0

algemene ekonomiese bedrywigheid in 1993 meer algemeen geword het en stukrag opgebou het, is 'n groot deel van nuwe investeringsbesteding aangewend om verouderde toerusting te vervang.

Die verskillende subsektore van die ekonomie se onderskeie bydraes tot totale binnelandse vaste investering word in Tabel 2 aangedui. Die landbousektor se bydrae tot totale bruto vaste investering het van 8,3 persent in die sestigjare tot 3,6 persent in die negentigerjare gedaal. Ander sektore waarin die relatiewe bydraes tot vaste investering ook merkbaar gedaal het, is die vervoer-, opberging- en kommunikasiesektor asook die sektor wat gemeenskaps-, maatskaplike en persoonlike dienste bied. Laasgenoemde is 'n weerspieëling van sterk afnames in vaste investeringsbesteding deur die algemene owerheid.

Die fabriekswese en die sektor verantwoordelik vir finansies, versekering, vaste eiendom en sakedienste het groot bydraes gelewer tot vaste investering in die negentigerjare. Hierdie twee sektore het ook die grootste langtermynstygings in hul onderskeie bydraes tot totale vaste investeringsbesteding ondervind: fabriekswese het sy bydrae van 19 persent in die sestigjare tot 24,9 persent in die negentigerjare verhoog, terwyl die finansiële sektor se bydrae gestyg het van 17,2 persent in die sestigjare tot 23,4 persent in die negentigerjare.

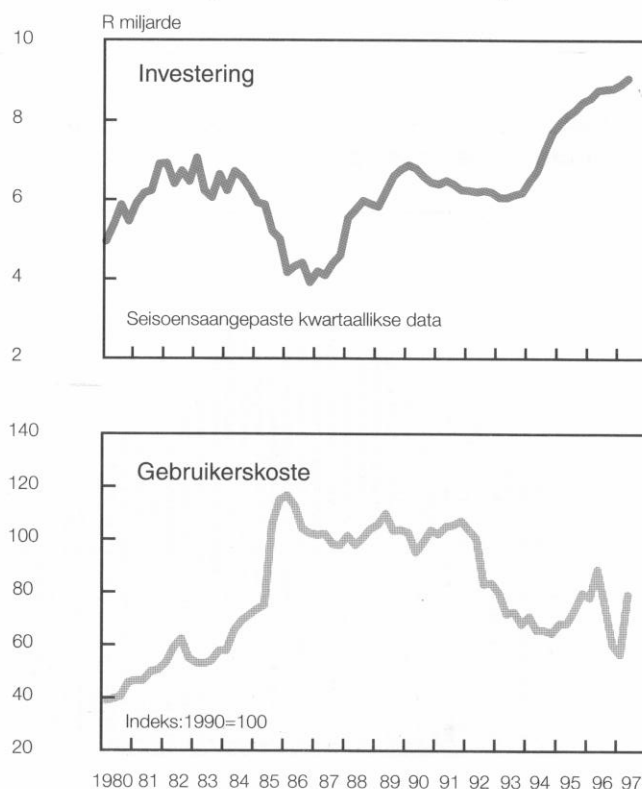
Verklarende veranderlikes van vaste investering

Die teoretiese oorsig in afdeling 2 toon 'n aantal moontlike veranderlikes wat gebruik kan word om die verandering in vaste investeringsgedrag te verklaar. In hierdie afdeling word kortliks verwys na die veranderlikes wat gebruik is in die berekening van die gebruikerskoste van kapitaal, saam met ander verklarende veranderlikes wat in die vergelyking ingesluit is om veranderinge in vaste investering te verklaar. Vaste investering in die private sektor verwys hier na investering in die private nie-landbousektor met die uitsondering van investering in woongeboue, vaste kapitaaluitlegte deur openbare korporasies en die goudmynbousektor. Al die investeringsgrootte is teen konstante 1990-pryse gemeet.

Gebruikerskoste van kapitaal

Die omgekeerde verwantskap tussen reële vaste investering deur die private sektor en reële gebruikerskoste van kapitaal word in Grafiek 3 weergegee. Reële gebruikerskoste van kapitaal word gedefinieer as die gebruikerskoste van kapitaal relatief

Grafiek 3: Reële vaste investering deur private sektor en reële gebruikerskoste van kapitaal

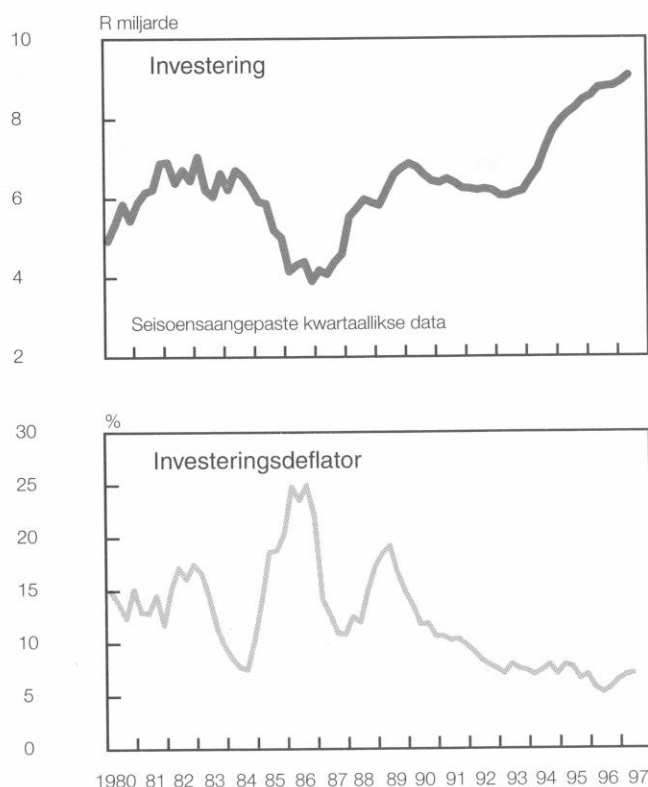


tot die toegevoegde waarde of uitsetprysdeflator vir die private sektor. Die skerp styging in die reële gebruikerskoste van kapitaal sedert 1985 het saamgeval met die vinnige depresiasie van die rand en die gevolglike styging in inflasie en rentekoerse, sowel as stygings in die effektiewe maatskappybelastingkoers. Die reële gebruikerskoste van kapitaal het deurgaans in die tagtigerjare 'n betreklike hoë vlak gehandhaaf. Die daling in die reële gebruikerskoste van kapitaal sedert 1992 is spoedig gevolg deur 'n styging in die vlak van die reële bruto vaste investering.

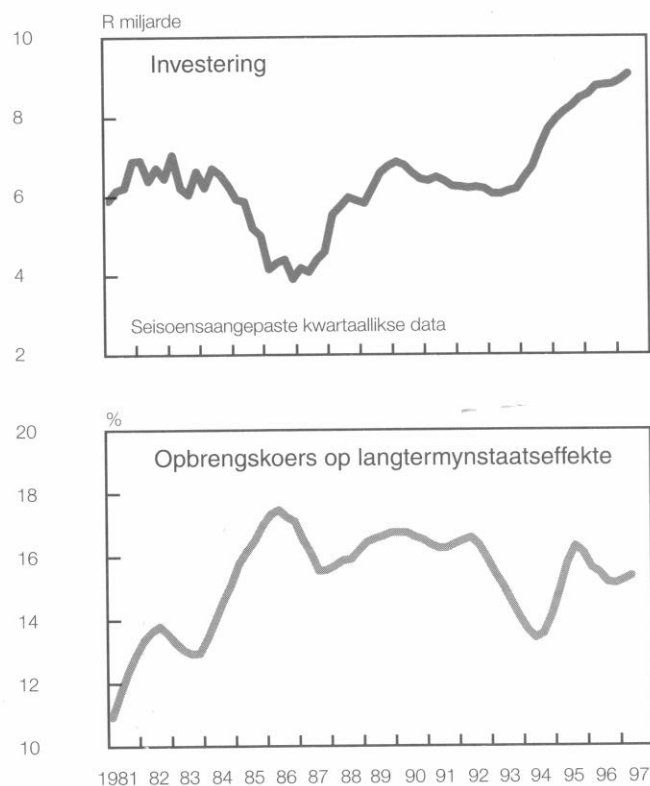
Die afgeleide prysdeflator vir vaste investering

Die afgeleide prysdeflator vir vaste investering is gebruik as aanwyser van die eenheidskoste vir nuwe kapitaalbates. Grafiek 4 toon die algemene omgekeerde verwantskap tussen reële vaste investering en die persentasieverandering oor vier kwartale in die prysdeflator vir vaste investering. Die uitwerking van die skerp depresiasie van die rand in 1984 en 1985 op die pryse van kapitaaltoerusting in die middel-tagtigerjare word in die grafiek uitgebeeld. Die jaarlikse styging in die gemiddelde prys van kapitaalgoedere het tot onder 10 persent in 1992 gedaal en sedertdien geleidelik verder afgeneem om sodoende by te dra tot die herstel in vaste-investeringsbedrywigheid sedert 1993.

Grafiek 4: Reële vaste investering deur private sektor en deflator vir vaste investering



Grafiek 5: Reële vaste investering deur private sektor en langtermynrentekoerse



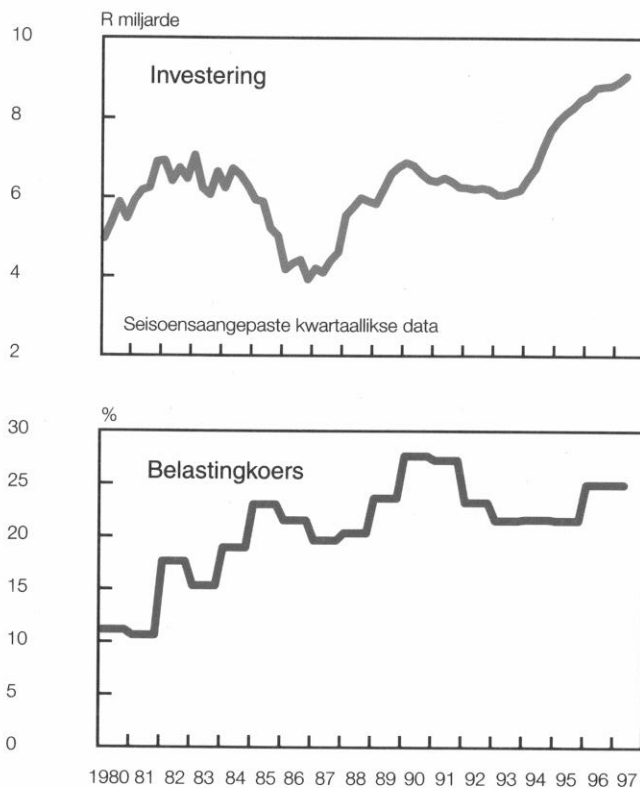
Langtermynrentekoerse

Die opbrengskoers op langtermynstaatsseffekte is as 'n aanwyser van die langtermynrentekoers waarteen ondernemings geld kan leen of uitleen gebruik. In Grafiek 5 word 'n bewegende gemiddelde oor vyf waarnemings van die opbrengskoers op langtermynstaatsseffekte vergelyk met reële vaste investering in die private sektor. 'n Konsekwente omgekeerde en gesloerde verwantskap word deur die grafiek aangedui. Ondanks die betreklik hoë reële rentekoerse sedert 1995, het reële vaste investering steeds opwaarts beweeg.

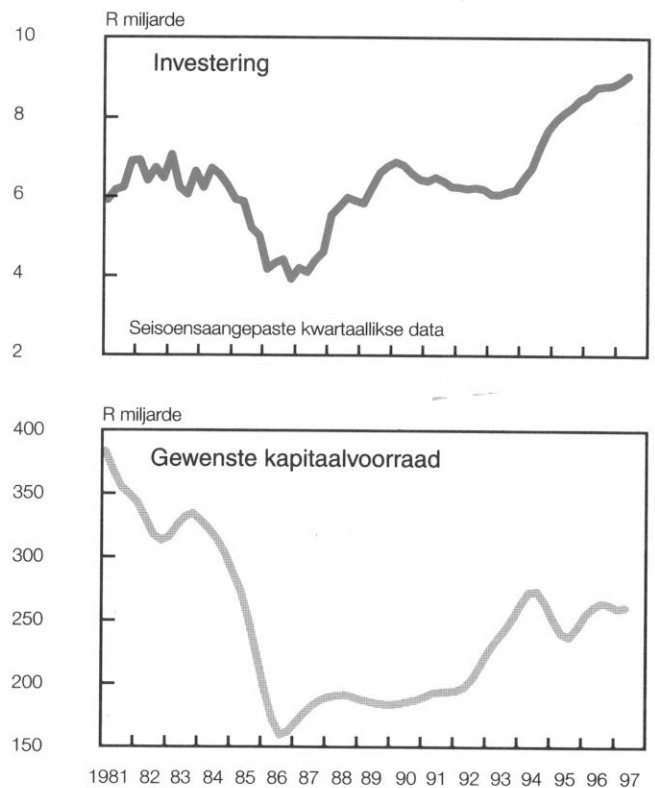
Effektiewe maatskappybelastingkoers in die private sektor

Die negatiewe uitwerking van 'n hoë effektiewe maatskappybelastingkoers op reële vaste investering word in Grafiek 6 uitgebeeld. Die opwaartse neiging in vaste investering vanaf die vroeë negentigerjare kan gekoppel word aan die verlaging van die statutêre maatskappybelastingkoers oor dieselfde tydperk. Die belastingaan-spourings en -vakansies wat in die makro-ekonomiese strategie vir groei, werkverskaffing en herverdeling aangekondig is, sal moontlik bydra tot 'n hoër vlak van besteding aan vaste investering.

Grafiek 6: Reële vaste investering deur private sektor en effektiewe maatskappybelastingkoers



Grafiek 7: Reële vaste investering deur private sektor en gewenste kapitaalvoorraad



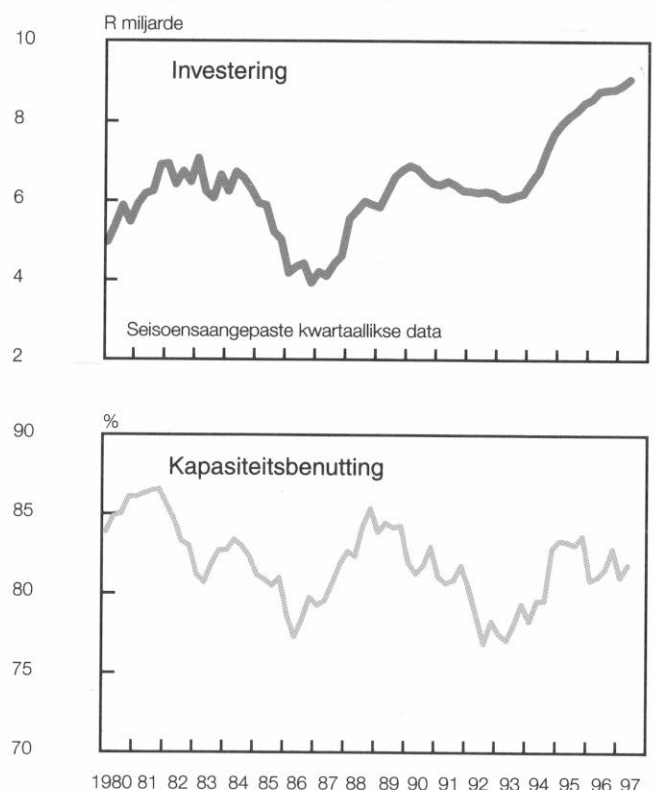
Die gewenste kapitaalvoorraad

Soos vroeër beskryf, kan die gewenste kapitaalvoorraad geraam word deur gebruik te maak van die verhouding tussen die nominale toegevoegde waarde in 'n bepaalde sektor en die gebruikerskoste van kapitaal in daardie sektor. Vir die doel van hierdie dokument, word alle ondernemings in die private sektor van die ekonomie ingesluit, behalwe ondernemings in die landbou- en goudmynbousektor en die oprigting van private woongeboue. Grafiek 7 toon 'n positiewe verwantskap tussen reële vaste investering en die veronderstelde vlak van die gewenste kapitaalvoorraad. Die afwaartse neiging in reële toegevoegde waarde van die private sektor in verhouding tot die gebruikerskoste van kapitaal gedurende die tagtigerjare, het gepaard gegaan met 'n afname in vaste investering deur die private sektor. Hierdie neiging is grootliks vanaf 1993 omgekeer.

Die kapasiteitsbenuttingskoers in fabriekswese

Die positiewe verwantskap tussen die kapasiteitsbenuttingskoers in die fabriekswese en reële vaste investering word in Grafiek 8 getoon. Die lae ekonomiese groei-koerse in die laat tagtiger- en vroeë negentigerjare het

Grafiek 8: Reële vaste investering deur private sektor en kapasiteitsbenutting



gepaard gegaan met lae kapasiteitsbenuttingskoerse. Dalende kapasiteitsbenutting is 'n aanduiding dat daar oorskot produksievermoë in die ekonomie beskikbaar is. Die ekonomiese groeikoers het sedert 1993 positief geword en begin versnel terwyl die kapasiteitsbenuttingskoers toegeneem het. Swakker groei in 1996 en 1997 is ook weerspieël in laer benuttingskoerse. Die onlangse kapasiteitsbenuttingskoers van 81 persent was nog heelwat laer as die 86 persent wat in 1981 bereik is. Vanaf 1996 het vaste investering deur die private sektor gestyg ondanks 'n lae kapasiteitsbenuttingskoers. Dit kan deels toegeskryf word aan die vervanging van betreklik verouderde masjinerie en toerusting.

Die statistiese skatting van vaste investering in die private sektor

Die empiriese resultate van die geskatte vergelyking vir vaste investering deur die private sektor word in hierdie afdeling beskryf. Al die ekonometriese berekeninge is op kwartaallikse seisoensaangepaste gegewens van toepassing gemaak. T-waardes van die geskatte koëffisiënte sowel as die volgende opsommende gegewens word verstrek:

R^2 = Aangepaste bepaaldheidskoëffisiënt
D-W = Durbin-Watson d-statistiek
RHO = Outokorrelasiekoëffisiënt

Die skattingstydperk vir elke vergelyking word onderaan die opsommende gegewens getoon. Vergelykings is in logaritmiese formaat gespesifiseer sodat die geskatte parameters 'n weerspieëling van die elastisiteit is. Al die veranderlikes wat in die skatting van die vergelykings gebruik word, is in konstante 1990- pryse gemeet.

Die vergelykings is geskat met behulp van ko-integrasietegnieke wat bestaan uit die twee-stap Engle-Granger-prosedure (Engle and Granger, 1987). Die eerste stap behels die skatting van 'n langtermynvergelyking, gerugsteun deur toepaslike ekonomiese teorie. Die orde van integrasie van die betrokke veranderlikes wat in die vergelyking ingesluit word, is daarna bepaal. In die praktyk is min makro-ekonomiese tydreekse stasionêr, maar die meeste is egter stasionêr in eerste of tweede verskille. Die Dickey-Fuller (DF) en aangepaste Dickey-Fuller (ADF)-toetsstatistieke is gebruik om te bepaal of veranderlikes stasionêr is. Toetsresultate dui aan dat al die getoetste veranderlikes nie-stasionêr van aard is. Die toetsstatistieke van hierdie veranderlikes, wat gegrond is op die verskille oor vier kwartale, het egter almal die kritieke waardes op 'n 5 persent betekenisvolheidsvlak oorskry en was derhalwe stasionêr.

Die residue wat verkry is uit die langtermynvergelyking se orde van integrasie is vervolgens bepaal. Toetsresultate het op stasionariteit gedui en die residu

kon daarom in die korttermyn foute-aanpassingsmodel ingesluit word.

Die tweede stap het die skatting van 'n korttermynvergelyking of foute-aanpassingsmodel behels. Dieselfde veranderlikes wat in die langtermynvergelyking gebruik is, is gebruik as verklarende veranderlikes in die vergelyking van die foute-aanpassingsmodel (ECM). Die ECM-vergelyking is geskat in verskille oor vier kwartale en die bepaaldheidskoëffisiënt R^2 was gevolglik laer as in die geval van die langtermynvergelyking.

Die volgende algemene notasie word in die spesifikasie van die vergelykings gebruik:

- Δ : persentasieverandering oor vier kwartale in 'n veranderlike;
- L: die onderskrif wat die langtermynvergelyking aandui;
- S: die onderskrif wat die korttermynvergelyking aandui; en
- ln: die natuurlike logaritme van 'n veranderlike.

Bruto vaste investering in die private sektor ⁽¹⁾

Die volgende verklarende veranderlikes is ingesluit in die vergelyking wat veranderings in bruto vaste investering (GFI) in die private sektor verklaar:

- gewenste kapitaalvoorraad (DCS);
- kapasiteitsbenuttingskoers in die fabriekswesesektor (CAP); en
- kapitaalvoorraad in die private sektor teen konstante 1990-pryse (CS), met uitsondering van die landbou- en goudmynbousektor en private woongeboue.

Die gewigte van die gesloerde gewenste kapitaalvoorraad is bepaal op grond van 'n afsonderlike regressie van die reële vaste investering op die reële kapitaalvoorraad en die gewenste kapitaalvoorraad. Die koëffisiënte van die gesloerde veranderlikes is beperk om 'n tweedegraadse polinoom te vorm, waarin sowel die begin- as eindpunte tot nul beperk is.

Die gewigte vir die gesloerde gewenste kapitaalvoorraad is bepaal as:

Tydperk	Gewig
0	0,143
1	0,229
2	0,257
3	0,229
4	0,143

Langtermynvergelyking:

$$\ln(GFI_t) = BO + B1 \cdot \ln(DCS) + B2 \cdot \ln(CAP(-1)) + B3 \cdot \ln(CAP(-2)) + B4 \cdot \ln(CS(-1))$$

¹ Teen konstante 1990-pryse, met die uitsondering van landbou, private woongeboue, vaste kapitaalvorming deur openbare korporasies en die goudmynbousektor.

Langtermynvergelyking:

$$\ln(GFI_t) = B_0 + B_1 \ln(DCS) + B_2 \ln(CAP(-1)) + B_3 \ln(CAP(-2)) + B_4 \ln(CS(-1))$$

KOëFFISIËNT	GESKATTE WAARDE	T-STATISTIEK
B0	-23,37	8.69
B1	0,43	7.34
B2	1,56	3.02
B3	1,72	3.57
B4	1,01	11.37

$$\bar{R}^2 = 0.93$$

$$D.W. = 2.01$$

$$RHO = 0.49$$

$$\text{Steekproeftydperk} = 81:q1 - 97:q2$$

$$\text{Aangepaste Dickey-Fuller-toets op residu} = -4,76$$

$$[\text{Kritieke waarde} = -4.53 (1\% \text{ vlak})]$$

Korttermynvergelyking:

Die afhanklike veranderlike in die korttermynvergelyking is die verandering oor vier kwartale in die bruto vaste investering (ΔGFI). Al die verklarende veranderlikes in die vergelyking verteenwoordig die veranderinge oor vier kwartale in die betrokke veranderlikes. Al die verklarende veranderlikes van die langtermynvergelyking is ook

gebruik om veranderinge in vaste investering in die private sektor in die korttermynvergelyking te verklar:

$$\Delta \ln(GFI_t) = B_1 \Delta \ln(DCS) + B_2 \Delta \ln(CAP(-2)) + B_3 \Delta \ln(CS(-1)) - B_4 (\text{RESIDU}_t(-4))$$

KOëFFISIËNT	GESKATTE WAARDE	T-STATISTIEK
B1	0,50	8,54
B2	3,05	10,29
B3	1,02	5,48
B4	-1,07	6,29

$$\bar{R}^2 = 0,78$$

$$D.W. = 1,25$$

$$\text{Steekproeftydperk} = 82:q1 - 97:q2$$

Die werklike en geskatte waardes van die vergelyking vir vaste investering in die private sektor word in Grafiek 9 vergelyk.

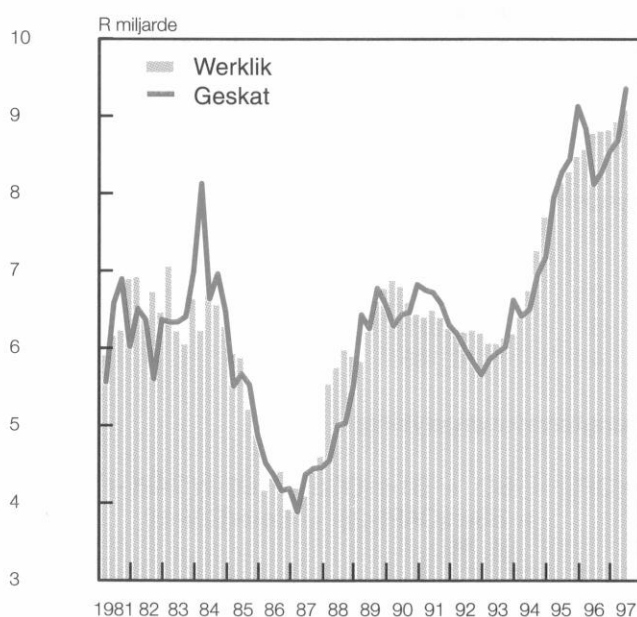
Samevattende opmerkings

Die neo-klassieke teorie van optimale kapitaalvorming, soos beskryf deur Jorgenson, blyk 'n nuttige model te wees vir die verklaring van vaste investering in die private sektor in Suid-Afrika. Die gebruikerskoste van kapitaal is die sentrale element van hierdie model, aangesien dit die uitwerking van veranderinge in rentekoerse, pryse van kapitaalgoedere en belastingkoerse in 'n enkele veranderlike saamvat. Oor die algemeen verskaf die model 'n redelik akkurate beskrywing van die investeringsgedrag van die private sektor in die Suid-Afrikaanse ekonomie oor die tydperk vanaf 1980.

Die vergelyking wat gebruik word om vaste investering in die private sektor in die makro-ekonometriese model van die Reserwebank te beskryf, berus hoofsaaklik op Jorgenson se neo-klassieke investeringsteorie. Bykomend tot die gewenste kapitaalvoorraad en die gebruikerskoste van kapitaal, is die kapasiteitsbenuttingskoers ook gebruik om veranderinge in vaste investering te verklar.

Met die aankondiging van die Departement van Finansies se marko-ekonomiese strategie vir groei, werkverskaffing en herverdeling is amptelik erkenning gegee aan die belangrikheid van investering in produktiewe bates. 'n Aantal belastingaansporings is aangekondig, insluitende spesiale toelae vir die aankoop van masjinerie en toerusting wat daarvoor kwalifiseer, tot en met September 1999, asook 'n belastingvakansie vir goedgekeurde projekte op 'n grondslag van ligging, werkskepping en vir voorkeurbedrywe. Die nuwe

Grafiek 9: Werklike en geskatte waardes van vaste investering deur private sektor



belastingaansporings en die verslapping van deviese-beheermaatreëls sal Suid-Afrika se aantreklikheid vir binnelandse en buitelandse beleggers verhoog. In soverre hierdie maatreëls die gebruikerskoste van kapitaal sal verlaag, sal dit ook bydra tot 'n hoër koers van investeringsbesteding en die groeikapasiteit van die Suid-Afrikaanse ekonomie verhoog.

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Bylae A. Die onderneming se optimaliseringsprobleem

Die maksimeringsprobleem kan vereenvoudig word deur te aanvaar dat $T = 0$; dit wil sê belasting word vir die oomblik nie in ag geneem nie. Die Lagrange-vergelyking vir die maksimering van vergelyking 3 kan dan soos volg beskryf word:

$$L = \int_0^{\infty} e^{-rt} R_t + \lambda_0(t)(Q - F(L, K)) + \lambda_1(t)(\dot{K} - I + \delta K) dt$$

$$\text{Laat } f = e^{-rt} R_t + \lambda_0(t)(Q - F(L, K)) + \lambda_1(t)(\dot{K} - I + \delta K)$$

$$f = e^{-rt}(pQ - wL - qK) + \lambda_0(t)(Q - F(L, K)) + \lambda_1(t)(\dot{K} - I + \delta K) \quad (4)$$

Die eerste orde voorwaardes vir die maksimering van die onderneming se teenswoordige waarde word verkry deur die eerste afgeleides van die funksie f met betrekking tot Q , L , I , K , λ_0 , en λ_1 gelyk te stel aan nul.

$$\frac{\partial f}{\partial Q} = e^{-rt}p + \lambda_0(t) = 0$$

$$\therefore \lambda_0(t) = -e^{-rt}p \quad (5a)$$

$$\frac{\partial f}{\partial L} = -e^{-rt}w - \lambda_0(t) \frac{\partial F}{\partial L} = 0$$

$$\therefore \frac{\partial F}{\partial L} = \frac{-e^{-rt}w}{\lambda_0(t)} \quad (5b)$$

$$\frac{\partial f}{\partial I} = -e^{-rt}q - \lambda_1(t) = 0$$

$$\therefore \lambda_1(t) = -e^{-rt}q \quad (5c)$$

$$\frac{\partial f}{\partial K} = -\lambda_0(t) \frac{\partial F}{\partial K} + \lambda_1(t)\delta = 0$$

Volgens Allen (1967: 529) kan dit aanvaar word dat

$$\frac{\partial f}{\partial K} = \frac{d}{dt} \frac{\partial f}{\partial \dot{K}}$$

$$\text{dus } \frac{\partial f}{\partial K} - \frac{d}{dt} \frac{\partial f}{\partial \dot{K}} = -\lambda_0(t) \frac{\partial F}{\partial K} + \delta \lambda_1(t) =$$

$$\frac{d}{dt} \lambda_1(t) = 0 \quad (5d)$$

$$\frac{\partial f}{\partial \lambda_0} = Q - F(L, K) = 0$$

$$\therefore Q = F(L, K) \quad (5e)$$

$$\frac{\partial f}{\partial \lambda_1} = \dot{K} - I + \delta K = 0$$

$$I = \delta K + \dot{K} \quad (5f)$$

Die marginale opbrengs van arbeid kan verkry word deur vergelyking 5a in vergelyking 5b te vervang.

$$\frac{\partial f}{\partial L} = \frac{-e^{-rt}w}{\lambda_0(t)} \quad (5b)$$

$$\text{dus } \frac{\partial f}{\partial L} = \frac{-e^{-rt}w}{-e^{-rt}p}$$

$$\frac{\partial f}{\partial L} = \frac{w}{p} \quad (6)$$

Die teenswoordige waarde van die onderneming bereik 'n maksimum wanneer die grensproduk van arbeid gelyk is aan die verhouding van die prys van arbeidsinsette tot die prys van die produk, ook genoem die reële loon.

Die marginale opbrengs op kapitaal kan op 'n soortgelyke wyse afgelei word as:

$$\lambda_1(t) = -e^{-rt}q \quad (5c)$$

$$\frac{d}{dt}\lambda_1(t) = e^{-rt}qr - e^{-rt} \frac{dq}{dt} \quad (7)$$

Vervang vergelykings 5a, 5b, en 7 in vergelyking 5d:

$$-\lambda_0(t) \frac{\partial F}{\partial K} + \delta \lambda_1(t) - \frac{d}{dt}\lambda_1(t) = 0 \quad (5d)$$

$$-e^{-rt}p \frac{\partial F}{\partial K} - \delta q e^{-rt} - (-e^{-rt}\dot{q} + e^{-rt}qr) = 0$$

$$\therefore p \frac{\partial F}{\partial K} = \delta q - \dot{q} + qr$$

$$p \frac{\partial F}{\partial K} = q(\delta + r - \frac{\dot{q}}{q})$$

$$\therefore \frac{\partial F}{\partial K} = \frac{q \left(\delta + r - \frac{\dot{q}}{q} \right)}{p}$$

$$\text{Laat } c = q\left(\delta + r - \frac{\dot{q}}{q}\right)$$

$$\text{dan } \frac{\partial F}{\partial K} = \frac{c}{p} \quad (8)$$

waar c die gebruikerskoste van kapitaal aandui.

Bylae B. Die uitwerking van belastingaansporings

Die invloed van belastingaansporings kan soos volg aangedui word:

Veronderstel 'n onderneming wil sy kapitaalvoorraad met een eenheid uitbrei en dat die koste van een eenheid van kapitaal q is, en dat die waardeverminderingkoers van kapitaal δ per tydperk oor die ekonomiese leeftyd van die bate is. Die aanvanklike kapitaaluitleg van die onderneming is q en die vervangingsbesteding in elke toekomstige tydperk is δq .

Die uitset in elke tydperk sal vergroot met die grensprodukt van kapitaal, dit wil sê $\frac{\partial Q}{\partial K}$. As die toevoeging tot die produksie teen 'n prys p verkoop word, sal die bruto inkomste in elke tydperk met $\frac{\partial Q}{\partial K}$ toeneem. Die netto inkomste sal met $p \frac{\partial Q}{\partial K} - \delta Q - T_i$ toeneem, waar T_i die toename in direkte belasting in tydperk i aandui. Indien die toename in waardeverminderingstoelaes vir belastingdoeleindes deur D_i aangedui word, dan word die toename in direkte belasting aangedui $T_i = u (p \frac{\partial Q}{\partial K} - D_i)$, waar u die belastingkoers op maatskappye verteenwoordig. Die onderneming sal voortgaan om een eenheid tot sy bestaande kapitaalvoorraad te voeg, solank as wat die verdiskonteerde waarde van die toevoegings tot die netto inkomste die eenheidsprys van kapitaal oorskry. Die proses kan soos volg aangedui word:

$$\begin{aligned} & \sum_{i=1}^{\infty} [p \frac{\partial Q}{\partial K} - \delta q - u (p \frac{\partial Q}{\partial K} - D_i)] (1+r)^{-i} \\ &= \sum_{i=1}^{\infty} [(1-u) p \frac{\partial Q}{\partial K} - \delta q + u D_i] (1+r)^{-i} \\ &= [(1-u) p \frac{\partial Q}{\partial K} - \delta q] \sum_{i=1}^{\infty} (1+r)^{-i} + u \sum_{i=1}^{\infty} D_i (1+r)^{-i} \\ & \text{maar } \sum_{i=1}^{\infty} (1+r)^{-i} = \frac{1}{r} \end{aligned}$$

Die onderneming sal daarom aanhou investeer solank as wat

$$(1-u) p \frac{\partial Q}{\partial K} \frac{1}{r} - \delta q \frac{1}{r} + u \sum_{i=1}^{\infty} D_i (1+r)^{-i} > q \quad (9)$$

waar r die rentekoers aandui waarteen die onderneming kan leen of uitleen. Laat d_i die waardevermindering aandui wat toegelaat

word op die investering van een eenheid, i tydperke nadat die investering plaasgevind het. Die verdiskonteerde waarde van die waardeverminderingstoelaes wat voortspruit uit die investering van een eenheid word aangedui deur $\sum_{i=1}^{\infty} d_i (1+r)^{-i}$

Die toename in waardeverminderingstoelaes word soos volg bereken:

Tydperke nadat investering aangegaan is	Waardeverminderingstoelaes
1	qd_1
2	$qd_2 + \delta qd_1$
3	$qd_3 + \delta qd_2 + \delta^2 qd_1$
4	$qd_4 + \delta qd_3 + \delta^2 qd_2 + \delta^3 qd_1$

Indien die waardeverminderingstoelaag na die huidige tydperk verdiskonteer en gesommeer word, word die volgende resultaat verkry:

$$\begin{aligned} \sum_{i=1}^{\infty} D_i (1+r)^{-i} &= \sum_{i=1}^{\infty} qd_i (1+r)^{-i} + \sum_{i=1}^{\infty} \delta qd_i (1+r)^{-i} (1+r)^{-1} + \\ & \sum_{i=1}^{\infty} \delta^2 qd_i (1+r)^{-i} (1+r)^{-2} + \dots \end{aligned}$$

$$\text{Stel } B = \sum_{i=1}^{\infty} d_i (1+r)^{-i}, \text{ dan} \quad (10)$$

$$\sum_{i=1}^{\infty} D_i (1+r)^{-i} = qB + \delta qB (1+r)^{-1} + \delta^2 qB (1+r)^{-2} + \dots$$

$$= qB + \delta qB \sum_{i=1}^{\infty} (1+r)^{-i}$$

$$= qB + \delta qB \frac{1}{r} \quad (10a)$$

Vervang vergelyking 10a in vergelyking 9:

$$(1-u) p \frac{\partial Q}{\partial K} \frac{1}{r} - \delta q \frac{1}{r} + uqB + u\delta qB \frac{1}{r} > q$$

$$(1 - u) p \frac{\partial Q}{\partial K} - \delta q + ruqB + u\delta qB > rq$$

$$(1 - u) p \frac{\partial Q}{\partial K} > rq + \delta q - ruqB - u\delta qB$$

$$> q (r + \delta - ruB - u\delta B)$$

$$> q [(r + \delta) - uB (r + \delta)]$$

$$> q (r + \delta) (1 - uB)$$

$$\therefore p \frac{\partial Q}{\partial K} > q (r + \delta)(1 - uB) / (1 - u) = c \quad (11)$$

Bylae C. Die verdiskonteerde waarde vir waardeverminderingstoelae

$$B = \int_0^{\theta} d(t) e^{-rt} dt \quad ^1)$$

Indien die reguitlynmetode van afskrywing van waardevermindering aanvaar word, is die waardevermindering oor die tydperk θ konstant, wat beskou word as die leeftyd van die bate vir belastingdoeleindes. Die waardevermindering per tydperk is $\frac{1}{\theta}$ en $d(t) = \frac{1}{\theta}$

$$\text{dus } B = \int_0^{\theta} \frac{1}{\theta} e^{-rt} dt$$

$$= - \frac{1}{\theta} \frac{1}{r} e^{-rt} \Big|_0^{\theta}$$

$$= - \frac{1}{r\theta} e^{-r\theta} - \left(-\frac{1}{r\theta}\right)$$

$$= \frac{1}{r\theta} (1 - e^{-r\theta})$$

¹ Hall, R.E. en Jorgenson, D.W.,: Tax Policy and Investment Behaviour, American Economic Review, Junie 1967, pp. 394-395.