Article: Quarterly Bulletin

March 1999

South African Reserve Bank

Business cycles in South Africa during the period 1993 to 1997

by W.S. Pretorius, J.C. Venter and P.J. Weideman

CONTENTS

List of graphs

Business cycles in South Africa during the period 1993 to 1997

by W.S. Pretorius, J.C. Venter and P.J. Weideman

Introduction

The South African Reserve Bank has identified the turning points of the business cycle in South Africa since 1946. These upper and lower turning points (or peaks and troughs) have generally been regarded as the reference turning points in the South African business cycle, i.e. in the cyclical movement of the economy. The reference turning points have also been discussed in different studies published in earlier issues of the South African Reserve Bank's *Quarterly Bulletin*[1].

This article describes the cyclical movement of the economy since the latest identified trough of May 1993. The first section of this article describes the methods employed in determining the reference turning point. The next section presents the statistical results. This is followed by a brief overview of economic events and developments since the trough of May 1993 in order to finally establish the peak of the business cycle that followed the trough of 1993.

Methods to determine the reference turning points

The reference turning points of the business cycle are determined by using a combination of several methods:

Firstly, the composite leading and coincident business cycle indicators are calculated. The composite leading indicator is calculated as a weighted average of a selected number of individual economic indicators which have historically anteceded changes in general economic activity. Similarly, the coincident indicator combines a selected number of economic indicators which have historically coincided with the business cycle.

Secondly, a comprehensive composite index, referred to as the current diffusion index, is compiled from the actual month-to-month percentage changes in each of 251 seasonally adjusted economic time series[2]. These series cover economic processes such as production, demand, employment and income in different industries or sectors of the economy. The sectoral contributions are weighted according to their respective contributions to aggregate value added. As these weights may change over time, the weight assigned to a particular sector is determined as the average of the relative contribution of that sector to the total value of production for different sub-periods.

Thirdly, the same 251 series are used in calculating a historical diffusion index which can be defined as a measure of dispersion of the changes in a number of time series during any particular period. The sectoral weighting scheme is identical to the weighting structure of the current diffusion index. The turning point of the cyclical component of each series is determined. The value of the historical diffusion index is obtained by expressing the number of series which increase during any particular period as a percentage of the total number of series under consideration.

Lastly, as the identification of a turning point is never a purely mechanical exercise, important economic events and developments occurring near a possible turning point are also appraised in the process of determining the exact date of the turning point.

Statistical results

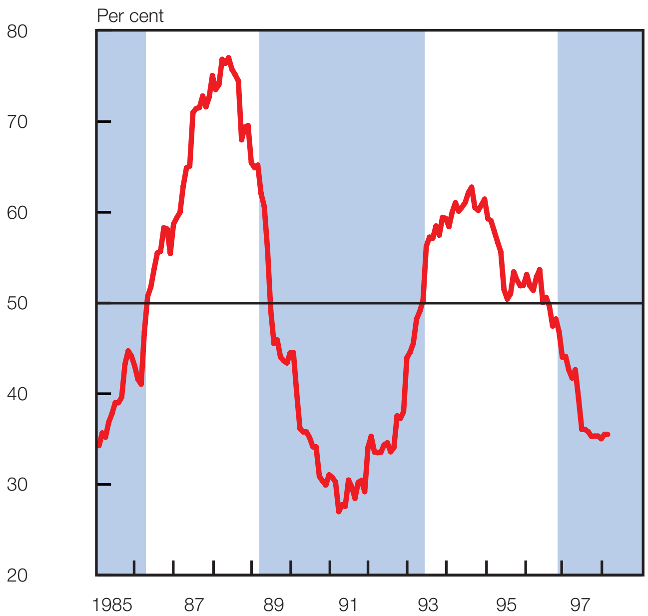
When the above-mentioned methods were applied, the results showed a clear cyclical upward phase after the trough that had been reached in May 1993. The reference turning point of the business cycle in May 1993, which had been determined in a previous study, was confirmed by the current statistical analysis. These results were at the same time also employed to determine whether a peak had already been reached and, if so, when it had actually occurred.

---

1. Smit, D.J. and Van der Walt, B.E. September 1970. Business cycles in South Africa during the post-war period, 1946 to 1968. *Quarterly Bulletin*. Pretoria: South African Reserve Bank.
   Smit, D.J. and Van der Walt, B.E. June 1973. Business cycles in South Africa during the period 1968 to 1972. *Quarterly Bulletin*. Pretoria: South African Reserve Bank.
   Smit, D.J. and Van der Walt, B.E. June 1982. Growth trends and business cycles in the South African economy, 1972 to 1981. *Quarterly Bulletin*. Pretoria: South African Reserve Bank.
   Van der Walt, B.E. March 1989. Business cycles in South Africa during the period 1981 to 1987. *Quarterly Bulletin.* Pretoria: South African Reserve Bank.
   Van der Walt, B.E. and Pretorius, W.S. March 1995. Business cycles in South Africa during the period 1986 to 1993. *Quarterly Bulletin*. Pretoria: South African Reserve Bank.

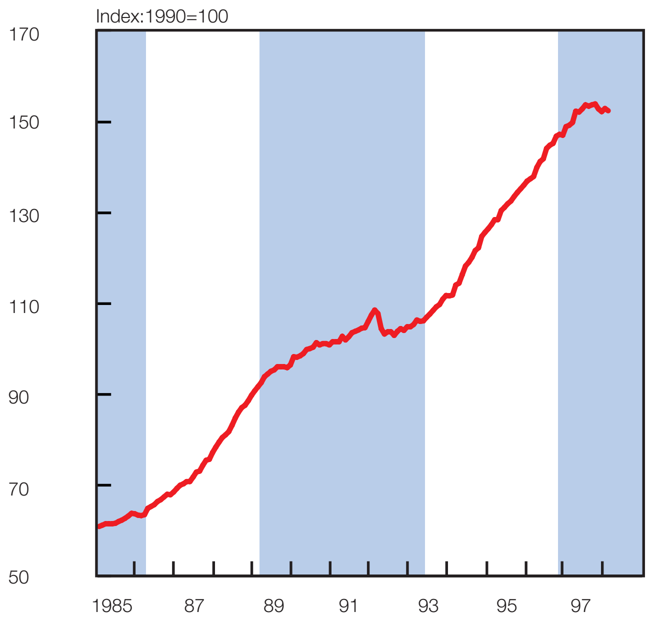
2. Symmetrical percentage changes are calculated, expressing the change in the series as a percentage of the average of its current and previous month's values.

Historical diffusion index



Shaded areas indicate downward phases of the business cycle

Current diffusion index



Shaded areas indicate downward phases of the business cycle

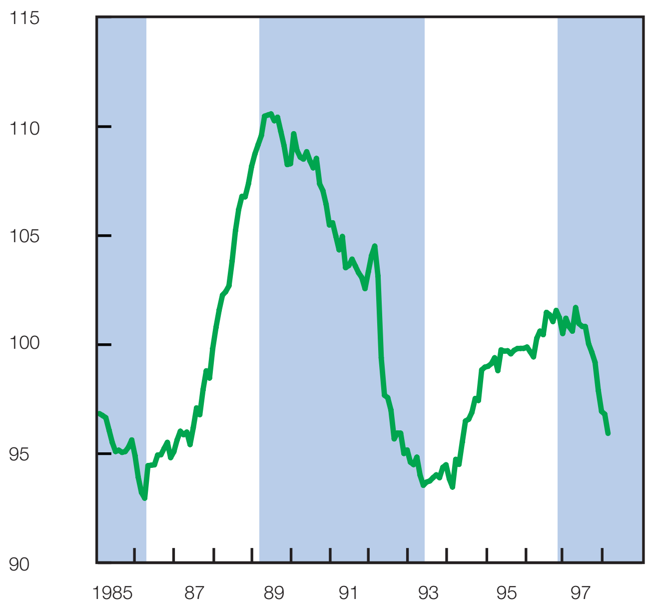
The historical diffusion index

The weighted historical diffusion index shows a clear cyclical movement, with its peaks and troughs preceding the reference turning points of the business cycle. Although most of the selected time series have recorded monthly rates of increase since May 1993 which have been higher than their respective long-term growth rates, thus indicating an upward cyclical movement, the number of such growing series did not exceed 63 per cent of all the selected series at any time. This percentage declined to just above 50 per cent during the period from mid-1995 to mid-1996, indicating a rather weak dispersion of the upward cyclical movement, that ended in August 1996 when the index value fell below the 50 per cent mark. Slowdowns in activity in most of the sectors of the economy corroborated the weakening of the dispersion index.

The current diffusion index

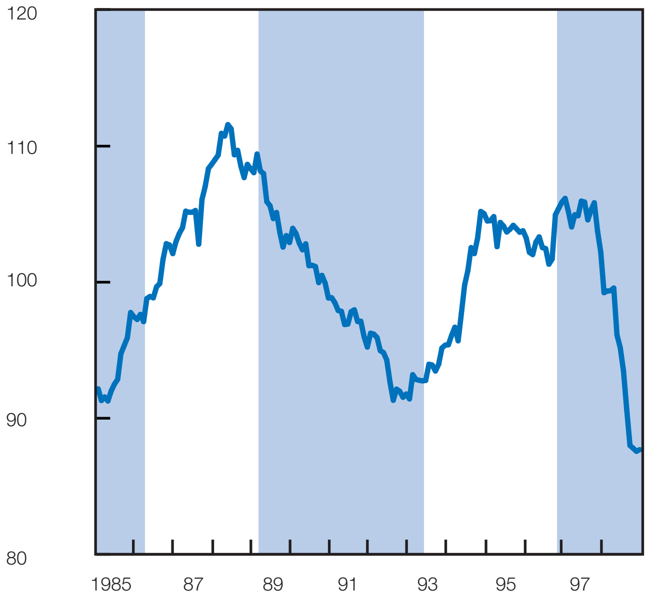
The deviation of the current diffusion index from its long-term trend is a sensitive barometer of general economic activity. The accelerated increase in the current diffusion index, indicated by a widening positive deviation from the long-term trend, represented an upward cyclical movement in economic activity prevailing since May 1993. This deviation changed direction after October 1996, signalling that a peak in the cyclical movement of economic activity could have been reached.

Current diffusion index (deviation from long-term trend)



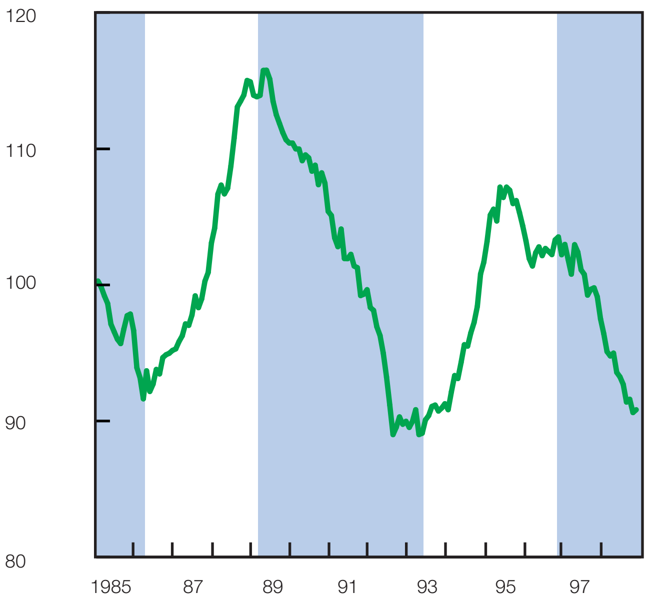
Shaded areas indicate downward phases of the business cycle

Composite leading business cycle indicator
(deviation from long-term trend)



Shaded areas indicate downward phases of the business cycle

Composite coincident business cycle indicator
(deviation from long-term trend)



Shaded areas indicate downward phases of the business cycle

The composite business cycle indicators

At the end of 1994 the composite leading business cycle indicator clearly signalled a change in the business cycle. The composite coincident business cycle indicator, expressed as deviations from trend, confirmed the finding that the upward movement of the business cycle that had started at about the middle of 1993 had peaked in November 1996. Over the full duration of the 1993-1996 recovery, the economy initially expanded strongly until the middle of 1995[3], but then lost much of its earlier momentum and tapered off towards the end of 1996.

Main macroeconomic events and developments: 1993 - 1997[4]

The upward phase of the South African business cycle, which started in June 1993, developed against the background of various structural changes which impacted on the economy. Some factors enhanced the economy's growth potential, and others hampered the economy's short-term ability to grow. Key factors which benefited economic growth were:

- the removal of trade and financial sanctions against the country, after the first democratic election in April 1994. This led to the opening of export markets and new opportunities for an economy which had previously been largely inwardly orientated;
- improved financial stability, as reflected in a slowdown of inflation; and
- the abolition of the financial rand in March 1995 and the gradual relaxation of other exchange control measures, which facilitated easier cross-border movements of capital.

Temporary factors which hampered the economy's growth momentum over the short term but which reinforced the soundness of the economy over the longer run, were:

- the phasing out of export subsidies and accelerated tariff reductions which comprehensively altered the relative price structure of the economy; and

3. The short vigorous cyclical expansion from 1994 to 1995 was mainly due to a robust expansion of manufacturing production, which dominated the weighting structure of the composite coincident business cycle indicator.

4. This short review highlights prominent economic events only. Extensive reviews of short-term economic developments and details of policy measures during the period under discussion have already appeared in various issues of the *Annual Economic Report* and *Quarterly Bulletin* of the South African Reserve Bank, as well as in addresses by the Governor of the Reserve Bank at the Bank's annual general meetings of shareholders and at conferences and other venues during the years from 1993 to 1997.

- the policy steps taken to correct macroeconomic imbalances in the interest of long-term sustainable economic growth.

The recovery in economic activity from the second half of 1993 was assisted by favourable weather conditions which led to a sharp increase in agricultural output from the drought-ridden low levels of 1992, and higher economic growth in some industrial countries with a concomitant increase in export volumes. In the first half of 1994 the upturn in economic activity wavered somewhat as output was disrupted by the exceptional circumstances that surrounded the political transition, including widespread labour-market turmoil.

The growth in domestic production regained much of its lost momentum in the second half of 1994 as confidence was regained. The revival of the upturn in economic activity was particularly visible in the secondary and tertiary sectors of the economy. Increased production was supported by comparatively high increases in real gross domestic expenditure. Strong growth in the money supply and domestic credit extension fostered renewed inflation expectations, leading to a reversal of the downward trend in inflation. To counter the re-emergence of inflationary pressures the Reserve Bank reverted to a cautious counter-inflationary policy stance by raising Bank rate in September 1994.

In the second half of 1995 slower growth in manufacturing production could be attributed mainly to a return to a more normal level of output by motor-car manufacturers. On average the growth rate in aggregate production in 1995 nevertheless exceeded that of 1994. Indications of inflationary pressures led to monetary policy becoming even more restrictive when, among other monetary policy measures, Bank rate was further increased in February and June 1995.

In 1996, aggregate production in the non-agricultural sectors of the economy grew at a slower pace than before, but strong growth in agricultural output largely compensated for this. In 1997 the growth in aggregate gross domestic product weakened further, notwithstanding a somewhat unexpectedly robust rate of growth in manufacturing production in the first half of that year, related to a rush in production to qualify for export incentive payments which were to be rescinded from July 1997.

Real gross domestic fixed investment expanded strongly during the recovery of 1993-1996. In fact, investment in machinery and equipment began to increase even before the revival of economic activity in 1993. Capital expenditure on a few “mega projects”, such as the Columbus stainless steel and Alusaf aluminium projects, contributed to the revival of fixed investment, but investment outlays became more widespread as the recovery gained momentum. The public sector was mainly responsible for the acceleration in total real gross domestic fixed investment at the onset of the recovery, but its contribution diminished considerably from the second half of 1994. By about the second quarter of 1996, the investment cycle had run its course and a period of relative slackness in investment activity followed.

Developments in real private consumption expenditure during the recovery of 1993-1996, indicate that households reacted almost immediately to a rise in personal disposable income at the beginning of the recovery. The demand for consumer credit increased strongly and the household saving ratio declined. Nevertheless, real private consumption expenditure rose at an appreciably slower average rate in the first two years of the recovery than in any of the preceding three economic upswings. This was probably due to the existence of positive real interest rates during the run-up to the upswing and in the upswing itself. Growth in real personal income also began to subside at the end of 1996.

Government consumption expenditure started to increase rapidly from the onset of the recovery, giving additional momentum to the upswing. However, during the remainder of the upswing the primary objective of fiscal policy was to strengthen fiscal discipline and to reduce the budget deficit, thus containing the growth in spending and improving the collection of taxes.

The growing demand for investment and consumer goods encouraged businesses to build up inventories early in the recovery. This contributed to a sharp increase in the value and volume of imports. In 1993 these increases were offset by corresponding increases in merchandise exports and net gold exports, with the result that a surplus was maintained on the current account of the balance of payments.

From the second half of 1994, South Africa’s high marginal propensity to import and the increase in gross domestic expenditure gave rise to substantially higher levels of merchandise imports. In addition to the increase in imports, a decline in the volume of net gold exports and stagnant exports of other mining products then played an important role in transforming the current-account surplus in the first half of 1994 into a deficit. The normalisation of financial relations between South Africa and the rest of the world enabled the current-account surplus to be switched to a deficit, without unduly restricting economic growth. The enabling factor was a turn-around in net capital flows which reverted from persistent outflows in the preceding nine years to strong inflows from the middle of 1994 to the end of 1995. These inflows were interrupted by net outflows in the first and third quarters of 1996.

The exchange rate of the rand depreciated substantially from mid-February 1996, following speculative attacks on the currency. Long-term interest rates reacted quickly to the uncertain conditions in the foreign exchange market and rose strongly, although the response of short-term rates was somewhat delayed. Net international reserves fell during 1996. All this prompted a rise in Bank rate in April 1996 and again in November of that year.

The tightening of monetary conditions from 1994 to 1996, which was necessary to preserve macroeconomic stability, prudent fiscal policies and developments internationally contributed towards the slowing and eventual reversal of the upswing. By 1997 the cooling of the economy was evident in low levels of output growth, weaker growth than before in aggregate domestic demand and falling inventory levels.

Summary

At the beginning of 1995 the composite leading business cycle indicator clearly indicated a change in the intensity of economic activity. This was followed by a slowdown in the upward movement of the composite coincident business cycle indicator, which changed into a downward movement late in 1996. These movements were echoed by the historical diffusion index which reversed direction in the third quarter of 1996, as well as by the current diffusion index which indicated a turning point in the fourth quarter of 1996. The turning points in the cyclical movements of individual sectors were dispersed over the period from the fourth quarter of 1995 to the second quarter of 1997.

Based on all available indicators, the final reference date of the upper turning point in the South African business cycle is November 1996.