Notes on the profitability of non-financial incorporated business enterprises in South Africa

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Introduction

The South African Reserve Bank currently publishes information on current income and expenditure of *all* incorporated business enterprises in South Africa. In terms of the 1993 System of National Accounts and other macroeconomic statistical frameworks, a distinction should be drawn between *financial* and *non-financial* incorporated businesses on the grounds that the principal functions, objectives and behaviour of these two classes of entities differ materially. Financial business enterprises are principally engaged in financial intermediation or auxiliary financial services, while non-financial business enterprises are principally engaged in the production of goods and non-financial services.

This note briefly describes a number of key developments related to the profitability of non-financial incorporated business enterprises. The first section defines different profitability ratios, as well as the concepts of financial leverage and financial risk. In the next section the changes over time in the profitability of non-financial incorporated business enterprises are examined. This is followed by a brief analysis of the impact of inflation, interest rates and tax rates on the financing decisions of firms and the relationship between profitability and the utilisation of production capacity. Some observations on the linkages between profitability and fixed investment are then made, followed by concluding remarks.

The definition and measurement of profitability

The assets of a business enterprise are financed by a combination of internal finance (undistributed profit), share capital and borrowed funds. The decision to invest in assets is subject to the availability of funds and the cost of such funds relative to projected returns. The profitability of firms ultimately depends on a multitude of factors, including microeconomic operational efficiency, the evolution of output prices and input costs, and financial acumen of management.

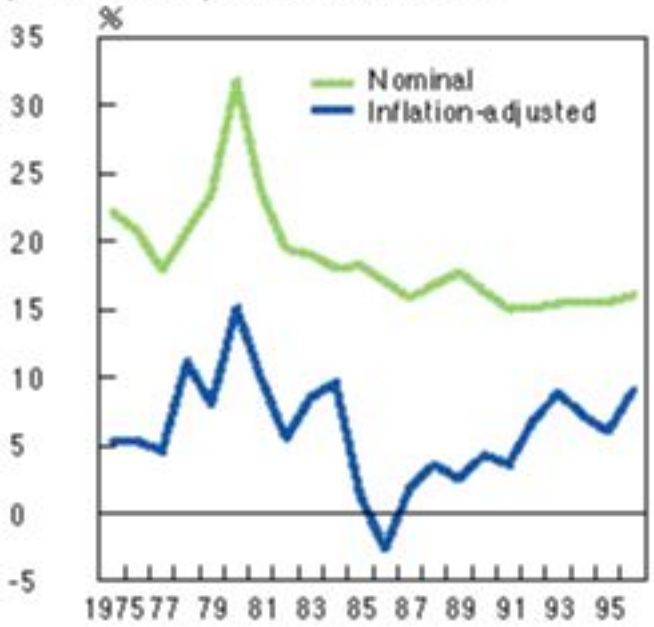
Overall profitability is usually expressed as a ratio of the total return on all assets relative to total assets employed valued at market prices. This ratio was calculated, for the purposes of this study, by dividing aggregated profits (before interest and tax paid were taken into account) by the value of the total assets of the enterprise concerned. The return on equity ratio is calculated by dividing profit, after interest costs but before tax paid, by owners' equity. A high return on equity ratio indicates that borrowed funds have been profitably employed, implying that enterprises can comfortably meet their interest commitments while still retaining ample after-interest profit in order to enhance the owners' return on equity.

The practice of introducing borrowed funds (interest-bearing debt) into the capital structure of a business enterprise with the objective of increasing the return on equity is conventionally referred to as financial leverage. However, financial leverage introduces an element of financial risk which stems from the obligation to make interest payments, irrespective of the financial performance of the firm. The financial leverage factor is calculated by dividing the return on equity by the return on assets. When this leverage factor declines below the value of one, the use of borrowed funds is not advisable as it reduces the return on equity accruing to owners.

Changes in the profitability of non-financial incorporated business enterprises

The return on assets, as shown in Graph 1, was calculated by using national accounts data on the income and expenditure of non-financial incorporated businesses in the private sector. For the calculation of profit before interest and tax paid of the non-financial corporate sector, net corporate saving was adjusted by adding back taxes paid, dividends paid, inventory valuation adjustment and interest paid. The value of total assets was calculated as the sum of capital stock at replacement value and inventories at book value.

Graph 1: Return on assets of non-financial private incorporated businesses



The profitability of the non-financial private sector reached relatively high levels during the late 1970s and early 1980s, mainly as a result of the prosperity generated by a relatively high gold price. From 1981 to the middle of the 1980s the profitability ratio of the non-financial private sector has shown a generally downward tendency. This downward movement came to an end in the late 1980s when the profitability of the manufacturing sector increased strongly. In the 1990s the profitability of the non-financial private sector moved sideways despite many new opportunities presenting themselves as international trade sanctions against the country were repealed and some of the other constraints on growth were removed. However, if the impact of inflation is taken into account, the inflation-adjusted or real return on assets showed a distinct increase from the middle of the 1980s, which gained further momentum from about 1992. The real rate of return was calculated by adjusting the profitability ratios with the average rate of increase in production prices.

Inflation and debt financing

When inflation becomes entrenched and is generally expected to persist, resources are usually directed away from productive enterprise and deployed in a way that is likely to protect the value of assets against the erosive effects of inflation. Highly skilled and entrepreneurial people then apply their talents to the realisation of inflation profits, rather than productive investment with the potential of creating new employment opportunities.

Central bankers' aversion to financial instability stems from the potential interaction between the excessive indebtedness of firms and contractions in non-financial economic activity. Failure of a

single debtor to meet debt commitments timeously in a heavily indebted society may give rise to a train of events which can ultimately culminate in the failure of many other indebted firms. Borrowers and creditors facing insufficient cash flows will, under such circumstances, be forced to curb their demand in the goods and factor markets, leading to a general contraction in aggregate economic activity.

High inflation undermines saving, especially in an environment of low or negative real interest rates. A high inflation rate and negative inflation-adjusted interest rates are likely to fuel the propensity to consume rather than to save, because they reduce the real rate of return earned by savers and lower the cost of borrowing for debtors. For the corporate sector in general, inflation not only militates against savings or retained income, but also creates a bias for financing assets by means of debt rather than retained income. This leads to a higher degree of financial leverage in the capital structure of firms, which in turn increases financial risk and has the potential of destabilising the economic system if allowed to increase excessively.

The following example illustrates how the real after-tax cost of debt *decreases* as inflation *increases* when the nominal interest rate and tax rate are kept unchanged, causing a bias towards debt financing. Suppose a company borrows an amount for one year at a nominal interest rate of 19 per cent per annum. The current inflation rate is 9 per cent and the company tax rate is 35 per cent. The real after-tax cost of debt will then be 3,1 per cent, calculated as follows:

$$K_{dr} = \frac{(1 + (K_{dn}(1-T)))}{1+R} - 1$$

$$K_{dr} = \frac{1 + (0,19(1-0,35))}{1+0,09} - 1$$

$$K_{dr} = 3,1 \text{ per cent}$$

Where:
- K_{dr} = real after-tax cost of debt
- K_{dn} = nominal cost of debt
- R = rate of inflation
- T = tax rate

If the inflation rate increases from 9 to 10 per cent, the real after-tax cost of debt declines to 2,1 per cent. An increase of one percentage point in the inflation rate thus lowered the real after-tax cost of debt by one percentage point, thereby demonstrating that the higher the inflation rate, the lower the real after-tax cost of debt. An increase in the tax rate can also lower the real after-tax cost of debt, because the nominal interest cost is deductible from gross income for tax purposes.

Using the prime overdraft rate as an approximisation of the nominal cost of debt, the real after-tax

cost of debt increased from an average negative rate of 5,3 per cent per annum in the period 1975-1983 to a negative 3,9 per cent during 1984-1991, before turning positive at a rate of 2,7 per cent during 1992-1996. The increase in the real after-tax cost of debt in the period 1984-1991 compared with the period 1975-1983 was the net result of a higher tax rate - the nominal corporate tax rate increased from 40 per cent in 1975 to 50 per cent in 1990 - and an increase in the inflation-adjusted interest rate from a negative 0,8 per cent to a positive 4,6 per cent. There was little change in the average inflation in prices as measured by the production price index between the two periods. The turnabout in the average real after-tax cost of debt from a negative value in the period 1984-1991 to a positive value in the period 1992-1996 can be attributed to a decrease in the average inflation rate from 13,8 per cent during 1984-1991 to 7,9 per cent during 1992-1996, causing the inflation-adjusted interest rate to rise from 4,6 per cent to 9,7 per cent between the two periods. The nominal corporate tax rate also declined from 50 per cent in 1990 to 35 per cent in 1996.

Net corporate saving as a percentage of earnings before interest and taxation for the non-financial private corporate sector, increased from an average of 13,1 per cent in the period 1985-1991 to 25,4 per cent in the period 1992-96. This rise indicated that, on average, a larger portion of corporate profits were retained by firms in 1992-1996 than in 1985-1991. This stronger showing of corporate saving may be attributed, *inter alia*, to lower inflation, positive inflation-adjusted interest rates, the introduction of the secondary tax on companies in the 1993/1994 fiscal year and the increase in the inflation-adjusted after-tax cost of debt. Gross corporate savings of the non-financial private sector as a percentage of gross domestic product also increased from 1985-1991 to 1992-1996 (see Graph 2).

Graph 2: Gross corporate savings of non-financial private incorporated businesses as a percentage of gross domestic product

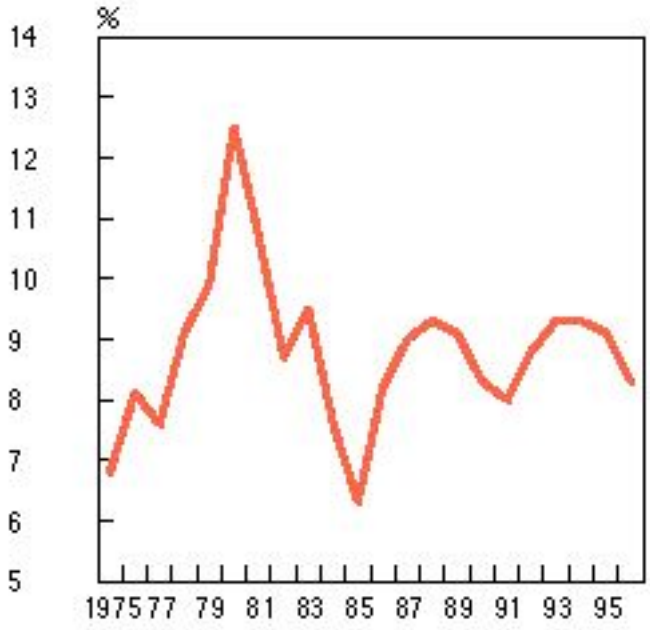


Table 1. The inflation-adjusted after-tax cost of debt

Per cent

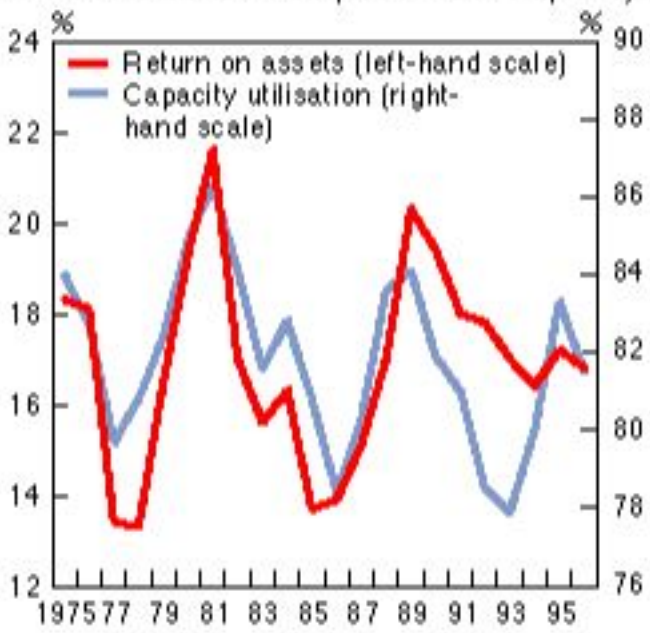
	Inflation rate	Tax rate	Inflation-adjusted interest rate	Inflation-adjusted after-tax cost of debt
1975	16,7	40	-4,9	-8,2
1976	15,4	40	-3,1	-6,9
1977	13,3	40	-0,8	-5,1
1978	9,6	40	2,5	-2,1
1979	15,5	40	-5,5	-8,2
1980	16,6	40	-7,1	-9,4
1981	13,7	40	0,3	-4,7
1982	13,9	42	5,4	-2,4
1983	10,5	42	6,2	-0,7
1984	8,4	50	13,9	2,5
1985	16,9	50	4,6	-5,3
1986	19,6	50	-5,3	-10,4
1987	13,9	50	-1,4	-6,7
1988	13,2	50	2,1	-4,9
1989	15,2	50	4,6	-4,6
1990	12,0	50	9,0	-1,3
1991	11,4	48	8,9	-0,8
1992	8,2	48	10,6	1,5
1993	6,6	40	9,6	2,9
1994	8,3	35	7,3	1,7
1995	9,5	35	8,4	2,0
1996	7,0	35	12,5	5,3
Average for the period				

1975-83	13,9	40,4	-0,8	-5,3
1984-91	13,8	49,8	4,6	-3,9
1992-96	7,9	38,6	9,7	2,7

Profitability and the utilisation of production capacity

Graph 3 shows that the profitability ratio of the private manufacturing sector is relatively well correlated with the utilisation of production capacity in the manufacturing sector. This can be explained by the relationship between fixed and variable costs. Fixed costs (which mainly relate to fixed assets and long-term liabilities) usually remain unchanged during a specific period, unless overall production capacity is changed. Variable costs (which relate to current assets and liabilities) are likely to change broadly in accordance with the level of production. When the utilisation of production capacity increases, it means that more units of output are produced and the fixed costs per unit of output will accordingly be lower. The production thus becomes more efficient, thereby strengthening profitability - at least until capacity constraints start having their effect.

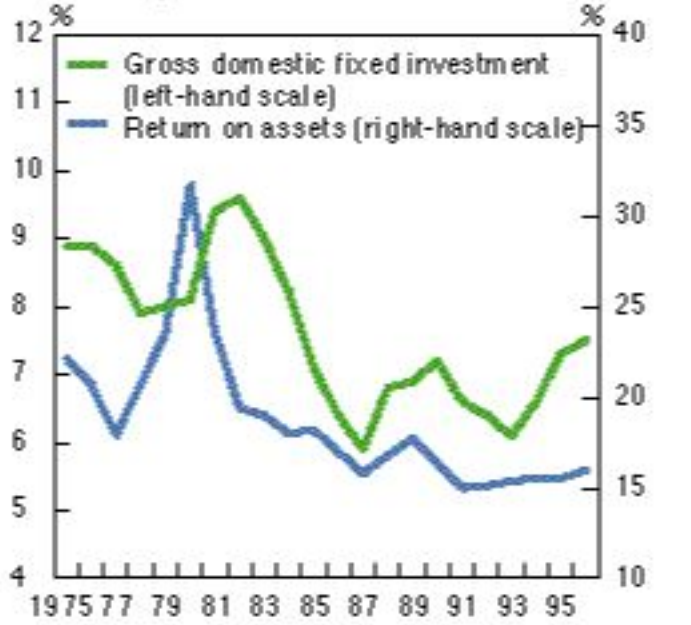
Graph 3: Return on assets of private manufacturing incorporated businesses and the utilisation of production capacity



Linkages between profitability and fixed investment

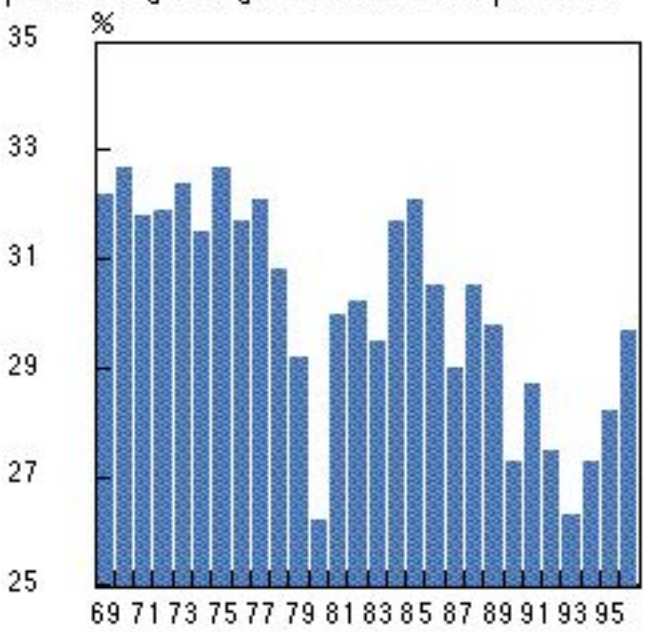
Periods of high capacity utilisation and high profitability are usually followed, with a time delay, by an expansion of production capacity, as is indicated by the positive relationship between corporate profitability and private-sector fixed investment (see Graph 4). The recent increase in fixed investment from 1994 was, however, more of a response to an increase in inflation-adjusted rates of return rather than a change in nominal rates of return, which have demonstrated marginal upward movement since 1994.

Graph 4: Gross domestic fixed investment by non-financial private incorporated businesses as a percentage of gross domestic product and the return on assets



Outstanding credit extended by banks to incorporated businesses relative to the gross domestic product declined noticeably from 1985 (see Graph 5). The painful experience of many firms when they had to deal with a combination of high debt ratios and a sudden strong rise in interest rates in the mid-1980s, along with the generally high inflation-adjusted cost of credit from the late 1980s, apparently made companies more circumspect in their use of bank credit to finance expansion.

Graph 5: Bank credit extension to incorporated businesses as a percentage of gross domestic product



Conclusion

An analysis of aggregated national accounts data indicated that the profitability of the non-financial private corporate sector declined during the 1980s, rising only slightly afterwards. However, the inflation-adjusted rate of return on assets revealed an increase in profitability from the middle of the 1980s.

High inflation and negative real interest rates fuelled the propensity to consume rather than to save. It tended to reduce the inflation-adjusted rate of return received by savers and lowered the opportunity costs of funds for borrowers. Inflation not only undermined saving, but also created a bias towards debt financing rather than own financing. This encouraged a higher degree of financial leverage in the capital structure of companies, which in turn increased financial risk.

The consistent application of counter-inflationary policies had the effect of lowering inflation and increasing the real after-tax cost of borrowing. This encouraged business enterprises to retain income rather than to borrow funds for expanding their businesses, thereby reducing the financial vulnerability of enterprises and contributing to general financial stability. The importance of this is self-evident, especially in a developing country that needs saving to bolster fixed investment.

This note indicated that the more stable and disciplined financial environment in South Africa since the late 1980s contributed to better inflation-adjusted profitability ratios and relatively less use of bank credit by incorporated businesses. It also contributed to sound increases in private-sector fixed

investment. The recovery in private-sector fixed investment from 1994 was solidly based in that it was more a response to an improvement in inflation-adjusted rates of return, rather than an artificially reduced nominal interest rate.