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**Nominal and Real Profit in  
Swedish Industry**

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Nominal and Real Profit in Swedish Industry

It is well-known that capital's share of value-added in Swedish industry has fallen during the post-war period. It is primarily during the period from the end of the 1950's to the beginning of the 1970's that one can talk of a continuing and substantial redistribution of value-added in industry from capital to wages.

Judging from the report of the Capital Market Commission, for instance, the decline in capital's share appears to have had its parallel in a similar long-term decline in the profitability of industry. This, in turn, has resulted in declining solidity<sup>1</sup> so that a gradually increasing share of companies' capital requirements has been financed by means of loans. This trend is considered to have given rise to two problems in particular.

In the first place, there is a risk that a weakened profits trend<sup>2</sup> will reduce industrial companies' propensity to invest. This would make it more difficult for the Swedish economy to preserve its external balance of payments, given the exposure of Swedish industry to international competition maintained by the liberal trade policy pursued during the postwar period.

Secondly, reduced solidity means that companies become increasingly more sensitive to cyclical fluctuations. If solidity is low, there is a risk that a downturn in economic activity will bring about a high frequency of bankruptcies.

In this article we shall attempt to make a rough but consistent estimate of profitability and solidity in industry for the post-war period in order to investigate whether a trendwise decline in profits

and deterioration in solidity has really occurred. We wish to emphasise right from the start that we shall be dealing with the long-term developments during the post-war period. We shall not discuss what happened during the 1977—78 crisis. There are a number of special explanations for the disastrous trend in profits during these years which are not necessarily related to the long-term trends, which are considered here.

The starting year of our estimate is 1951, a boom year. The closing year, 1976, was, from the viewpoint of industrial profits, a better year than 1977 and 1978, weak years during the 1977—1978 crisis. The question we pose is, therefore: did a trendwise decline of industrial profitability and solidity occur during the post-war period up to the 1977—1978 crisis?

The method we employ for analysing the trend in profitability was presented by Sven-Erik Johansson in No. 3—4/1977 of this Review. One of the implications of this method is that real capital gains on stocks and fixed assets and real changes in the value of monetary assets and liabilities are incorporated in profits. As is usual when assessing profitability calculations, it should be realised here that what is involved is "mechanical adjustments" of amounts of depreciation and capital values. The various index series conceal relative price changes within the aggregate, which means that the average trend for industrial firms will be misleading, for example, for those sectors and industries whose capital has been affected by obsolescence. It should also be emphasised that a characteristic feature of the calculations is that they merely reflect long-term trends.

It may also be maintained that there is little interest in taking into account capital gains when calculating profitability in industry. Capital gains on company assets are — except where stock investment is concerned — latent. In many cases where fixed investment is concerned, the capital gains cannot be realised except by selling the entire company.

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<sup>1</sup>By solidity we mean the ratio between equity capital and total capital.

<sup>2</sup>When we talk about profits here we mean, of course, profits related to something, such as the volume of capital (rate of return), value-added or turnover (profit margins). Exact definitions are given later on.

It is important to bear these points in mind, but it should then also be noted that even latent capital gains place existing companies in an advantageous position compared with non-established companies; just as capital gains in investments already undertaken provide advantages compared with investments which have yet to be made.

In the same way, inflation involves a burden on operating earnings because demands for increased economic depreciation give rise to an upward adjustment of existing assets. Therefore, real profitability — including real capital gains — is, actually, the only reasonable standard of comparison for assessments of capital return on different occasions. This point is particularly pertinent, for the measures of profitability to which we refer in this article, are inconsistent combinations of nominal and real measures.<sup>3</sup>

#### **An international phenomenon**

The tendency towards falling profits and solidity, which appears to have been observed in Sweden has also been observed in other OECD countries. In the USA, for example, there has been a debate on both the state of affairs — have profits really fallen? — and on the causes of the decline apparently observed.<sup>4</sup>

<sup>3</sup>See the main report of the Capital Market Commission, "The Capital Market in the Swedish Economy" (SOU 1978:11). The same applies to the studies of IVA (The Royal Swedish Academy of Engineering Sciences) and IUI (The Swedish Industrial Institute for Economic and Social Research, IIESR) "Teknik och Industristruktur — 70-talets ekonomiska kris i historisk belysning" (Technique and industrial structure — the economic crisis of the 1970's historically illustrated) Stockholm 1979.

<sup>4</sup>Our discussion refers to industry, that part of the economy which is exposed to foreign competition. In large economies, the distinction between protected and exposed sectors of the economy is of less interest and the discussion abroad has sometimes referred to the entire economy. See Nordhaus, William D. "The Falling Share of Profits" *Brookings Papers on Economic Activity*, 1 1974, pages 169—208 and Feldstein, Martin & Summers, Lawrence, "Is the Rate of Profit Falling?" *Brookings Papers on Economic Activity*, I 1977, pages 211—227.

There are grounds for expecting that profits should indeed have fallen during the post-war period. Fundamental, so-called structural and often extra-economic changes in society have occurred which, considered by themselves, should give rise to lower profits.

As a result of international political developments during the post-war period, capitalism in the West has gradually been stabilised. The risks of international conflicts in the immediate vicinity of the "Atlantic Community" are, today, presumably regarded as being much smaller than during the days of the cold war with the conflict in Korea and the Berlin blockade as dramatic background. Therefore, the risk premiums on long-term private investment in real capital during the years immediately prior to the instability, which began with the oil crisis of 1973—74, ought to have been lower than previously during the post-war period.

As a result of Keynesianism's success in stabilising the real side of the economies — production and employment — up to 1974/75, industry's confidence in the future ought to have gradually increased. For a long succession of years up to the time of the oil crisis, economic growth proceeded relatively free from interference. The crisis of 1929/33 with the subsequent cautiousness in investment policy and the increased demands for financial "soundness" to which it gave rise in the private sector of the economy, gradually died away.<sup>5</sup>

An attempt to provide evidence for this theory was first put forward by Nordhaus op.cit. in Baily (1978).<sup>6</sup> By means of a systematic study of busi-

<sup>5</sup>What "the great recession" of the 1970's has meant for the gradual built-up of confidence is, of course, an interesting question. If it has a similar effect to that of the 1930's, both stabilisation policy and distribution policy will be made considerably more difficult in the future.

<sup>6</sup>Baily, Martin Neil. "Stabilization Policy and Private Economic Behaviour". *Brookings Papers on Economic Activity*, I 1978, pages 11—50.

ness journals for the post-war period, Baily found increasing confidence in the stability of the American economy up to the oil crisis in 1973. The real economic behaviour which could be observed among companies in many countries — e. g. increasing labour hoarding in times of recession — can presumably be seen as a result of the fact that companies act differently in a situation which is regarded as stable compared with situations in which the economy is expected to be unstable. Reductions will not be made in the labour force and investments will not be cut back so severely when a recession comes if it is known that it will be of short duration. In Sweden, tendencies to increased labour hoarding existed even before the specially Kr. 25.— assistance for work training and other measures to support employment.

The general political changes in the environment of capitalism which we have discussed here should, considered by themselves, have led to lower demands for return on the part of shareholders and other financiers of business activities, with opportunities for managements to reduce their demand for return in connection with investments in real capital.

Therefore, on general political grounds, there is reason to expect that the supply propensities on the capital market have "widened", thereby reducing companies' capital costs and managements' "cut-off rate". The fact that effective corporate taxation has been reduced — not least in Sweden — has also produced an effect in the same direction as far as the trend of gross profits is concerned.<sup>7</sup>

When it comes to explaining the long-term decline in the share of value-added accruing to capi-

<sup>7</sup>See, in this context, Södersten, Jan, "Bolagsbeskattningsverkningar" (The effects of corporation taxation) in Normann, Göran & Södersten, Jan, Skattepolitisk resursstyrning och inkomstutjämning (Tax-policy control of resources and income equalization), Industriens Utredningsinstitut (The Swedish Industrial Institute for Economic and Social Research), Stockholm 1978.

tal, the demand side of the capital market has also been cited. Wage costs have risen very quickly relative to capital costs during the post-war period. Despite an extensive substitution of capital for labour in industry — this includes a shift in the structure of production to capital-intensive sectors — there do not appear to have been sufficiently large opportunities to replace labour so as to offset the rise in labour costs and retain a constant capital share.

This "explanation" is based to a certain extent on empirical research into industry's production techniques. In the developed industrial countries, it has often been found that substitution does not have time to compensate for the rise in labour costs.

On the other hand, the results of empirical research into industry's production techniques indicate that technical development — definitionally distinguished here from capital accumulation itself — saves labour and thereby counteracts the tendency of a declining capital share.

The difficulties involved in distinguishing, empirically, the categories we have mentioned are formidable. However, one possible interpretation is that developments in techniques — which have been labour-saving — have not, to a sufficient extent, reinforced the saving in labour which the substitution involved so as to counteract a reduced capital share in connection with rising real wages. On the other hand, this trend in the share of capital need not be related to a reduced state of return for capital.

#### **Long-term explanations?**

The trends in profits and solidity in industry have been regarded as posing problems for the achievement of central economic policy goals, at least from the end of the 1960s. The 1970 Long-Term Survey was the first major statement of this concern. It identified the problem on the basis of a series of calculations of measures of profits and financing.

The deficit on the external balance of payments was defined as the central problem. The prescribed remedy was a strong growth in investment for which an acceptable rate of return and solidity is prerequisite. This view of the balance of payments and resulting need for industrial capital formation has recurred with increased emphasis in subsequent surveys.

An empirical review of the trend in profitability during the post-war period by the Capital Market Commission shows clear tendencies towards a decline. Admittedly, it was observed that the tight policy pursued in 1971—72 and, in particular, the economic upswing in 1973—74 resulted in a recovery in profits, but this was followed by the disastrous years of 1977—78.<sup>8</sup> The devastating effect of the recession on profits and solidity has raised the question of whether a break in the trend with additionally worsened conditions for a private capitalistic market economy has occurred.

A topic which often recurs in the assessment of the long-term trend in profits is the difficulty of maintaining profits and solidity in an economy like that of Sweden, which has exhibited inflationary features during almost the entire post-war period. It has been shown how the rising prices of capital goods constitute an extra burden on profits by making demands for depreciation on inflated replacement values.<sup>9</sup> But there is also a positive side to inflation, namely capital gains on machinery, buildings and stocks. In the next section we shall consider the concepts with whose help we shall analyze the post-war development.

<sup>8</sup>Cf. The Capital Market Commission Report and the studies of IVA and IUI referred to in Note 3, *supra*.

<sup>9</sup>"International Competitiveness — An Empirical Analysis of Swedish Manufacturing" Mimeographed Working Paper 3 Stockholm 1972. Federation of Swedish Industries, and "Profit Performance in Swedish Industry". Special Study F in *Industrikonjunkturen*, hösten 1976. The Federation of Swedish Industries

### Profitability and solidity

In order to obtain a long-term perspective for assessing the questions we posed at the beginning of the article, we have made use of available summaries of industry's liabilities and operating assets which, together, cover the years 1951—76.<sup>10</sup> For the period after 1965 we have made use of the financial statistics of the Central Bureau of Statistics (SCB), which, for the period following that year, also include balance sheet data. For the earlier period 1951—64, corresponding statistics have been obtained by Eliasson (1972, 1976, Note 14 *infra*). The figures have been supplemented by our own calculations of the value of fixed capital in order to obtain complete balance sheets for the aggregate of the industrial sector's enterprises. In this way it has been possible to assess the trend in solidity for the entire period 1951—76.

With the aid of SCB's tables of companies' profit and loss accounts we have been able to prepare measures of nominal and real profitability for the corresponding period.<sup>11</sup> The statement of fixed assets given in company annual reports and SCB's financial statistics is traditionally distinguished by the evaluation standards for tax legislation. For an economic analysis, fiscal evaluation must be replaced by an evaluation based on expectations of the economic life of the assets and expressed in replacement prices.

<sup>10</sup>Cf. SAF (The Swedish Employers' Confederation) Report to The Capital Market Commission, p. 10.

<sup>11</sup>SCB's financial accounts for industry comprise a somewhat smaller population than that of the national accounts as a result of the exclusion of small companies, etc. Therefore, the results of financial accounts and balance sheet figures have consistently been adjusted upwards to the level of the national accounts for comparability with our capital stock data. The calculations have been carried out by Thomas Lindberg of the Industrial Institute for Economic and Social Research (IIESR), who has also made certain corrections to Eliasson's basic material for 1951—64. The work has formed part of Lindberg's research project on the financing and profitability of industry, and will appear in a research report to be issued by IIESR during 1979.

In our main alternative, we assume that the calculated depreciation corresponds to 3.3 % for buildings and 6.7 % for machinery, based on the replacement value of the assets. The capital stocks have then been calculated by making use of the so-called perpetual inventory method. The replacement value has then been obtained by using the so-called perpetual inventory method.<sup>12</sup> The above depreciation figures can be interpreted as an assumption of an average life for buildings and machinery of 30 and 15 years, respectively.<sup>13</sup> Taking into account the distribution between buildings and machinery in total real capital, these figures also mean that the average rate of depreciation amounts to approximately 5.8 per cent.

The results of our calculations of rate of return<sup>14</sup> are shown in *Charts 1 and 2*. *Real* rate of return as a percentage of *total capital* in Chart 1 refers here solely to the return on real capital comprising machinery, buildings and stocks and is defined inclusive of real capital gains on stocks and plant. Profits as a measure of profitability have been calculated on the basis of the operating earnings, which have been reduced by calculated depreciation corresponding to 5.8 of the replacement value of the plant. As a result of the fact that, according to cur-

rent accounting principles operating earnings include nominal price gains on stocks, we have also added an estimated price gain on fixed capital in order to obtain first of all, a pure, nominal measurement of profitability.

In order to judge how profitability has developed over time we are, however, interested in a real measure of return. A measure of this kind can be obtained by simply reducing the nominal rate of return on total real capital by the rate of inflation defined here as the change in the consumer price index. Profits in our measure of real profitability will then correspond to operating earnings calculated exclusive of all price gains after deducting calculated depreciation and adding real capital gains on stocks and fixed assets.<sup>15</sup>

Real profitability calculated in this way is affected by changes in the relative prices of capital goods as compared with consumer goods. If this relative price rises, society's real capital expressed in consumer goods is adjusted upwards, which with our method is accordingly recorded in the measure of profitability.

One can also conceive of a real measure of profitability which does not include wealth effects of the kind mentioned above. Neither nominal capital gains nor the rate of inflation on consumer goods are then included in the calculations. The implication of this, as mentioned above, is that the macroeconomic revaluation of capital in terms of consumer goods, which has occurred since 1951

<sup>12</sup>A more detailed description of the method employed for calculating capital stock is given in Lundberg, Erik and Järv, Jaak, *Vinster och investeringar inom den svenska industrin (Profits and Investments in Swedish Industry)* in *Skandinaviska Banken Quarterly Review* 1964:1, pp 7—12.

<sup>13</sup>Judging from the 1978 planning survey by the Swedish Federation of Industry (Industrial Economic Activity, Spring 1978, page 167) these figures of economic life correspond quite well with companies' own views. For manufacturing industry, an economic life of 13.4 years on average for machinery and 28.7 years for buildings was given.

<sup>14</sup>Our definition of the concepts real and nominal profitability are explained in more detail in Johansson, Sven-Erik, "Lonsamhetsbedömning under inflation" (Profitability Analysis during Inflation) in *Skandinaviska Enskilda Banken Quarterly Review* 1977 3—4, pp 112—118. Compare, too, Eliasson, Gunnar "Business Economic Planning", New York, 1976

<sup>15</sup>A formula may clarify the significance of our measure of profitability. Real profitability on total capital may be defined as

$$R_M^R = \frac{BV - A + P^I \times (M + B)}{M + B + L} - P$$

$$= \frac{BV - A + (P^I - P) \times (M + B) - P \times L}{M + B + L}$$

where BV represents operating results (which, according to SCB's financial statistics includes *nominal* price gains on stocks), A, calculated depreciation P<sup>I</sup> the rate of price rises of capital goods, and P, the rate of inflation. M, B and L denote machinery, buildings and stocks.



Chart 1. Real rate of return on tangible capital

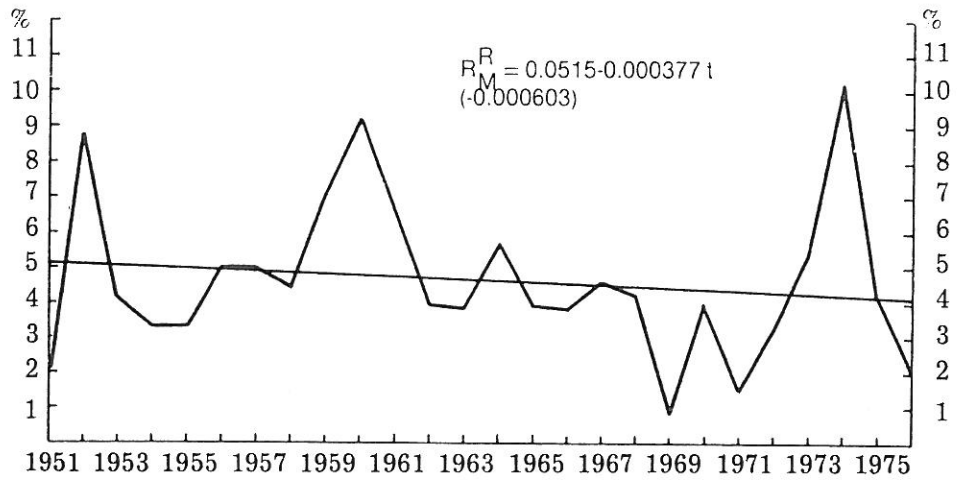
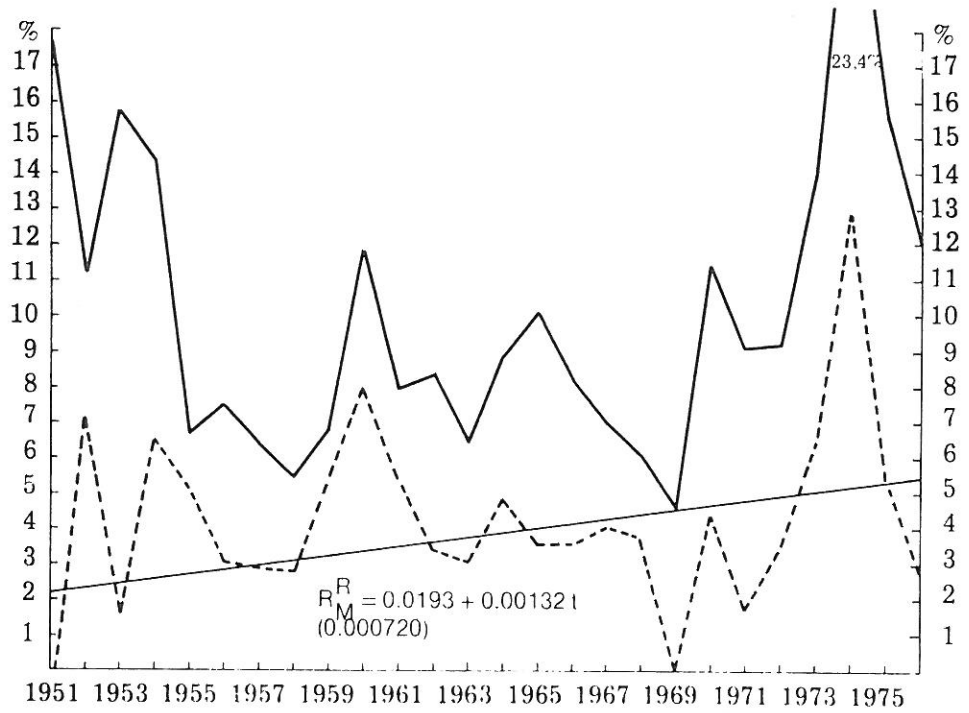


Chart 2. Nominal and real rate of return on equity after tax





as a result of changes in the relative price, is not included in profitability.<sup>16</sup>

The development of nominal and real profitability on *equity capital* is shown in *Chart 2*. As above, profits as a measure of profitability are arrived at after deducting calculated depreciation. In addition, we have deducted actual tax payments and net financial costs and receipts. By deducting actual tax payments, we equate deferred corporation taxes (due to accelerated depreciation, including allocations to stock reserves and investment funds) with equity capital. Consequently, deferred taxes are also incorporated in the denominator in the measure of profitability.<sup>17</sup>

Nominal profitability on equity capital includes nominal capital gains on stocks and fixed capital. In this way the measure of profitability will express a money rate of return of the same type as the nominal return on, e. g. bonds and bank accounts. Nominal profitability on equity capital is thus the relevant measure for comparisons — on a particular occasion — of the return on various investment alternatives.

For comparisons over time, it is, instead, the real rate of return on equity capital that is of interest and this has been calculated here by reducing the nominal rate of return by the rate of inflation. The correction for inflation, which is incorporated in this procedure means that, for net profits, we add real capital gains on stocks and fixed assets and the real decrease in value of liabilities and deduct the decrease in the real value of monetary assets.<sup>18</sup>

<sup>16</sup>Cf note 19.

<sup>17</sup>Alternatively, deferred corporation taxes may be regarded as interest-free loans, which reduce companies' average interest on loans. With this interpretation, the denominator in the measure of profitability will be smaller, since equity capital is defined exclusive of deferred taxes. At the same time the numerator will be smaller, since profits are indicated after deduction of an estimated tax at the *nominal* tax rate. Viewed over a longer period, these two interpretations should give the same result for profitability after tax.

### Unchanged profitability

As will be seen from the regression line which has been inserted in *Chart 1*, the real rate of return on total real capital indicates a weak downward trend for the entire period 1951—76. The sloping coefficient of the line implies a (non-significant) fall of scarcely 0.4 percentage points per 10-year period.<sup>19</sup> The breakdown into 5-year periods in Table 1 indicates, in addition, that total profitability rose from the first to the second half of the 1950's. A decline subsequently occurred during the 1960's, which was interrupted during the early years of the 1970's.

As far as the real rate of return on *equity capital* after tax is concerned, the trend is scarcely significantly positive with an increase in return of 1.3 percentage points per decade. However, the trend of the individual years follows the pattern of total profitability, with a higher return during the second half of the 1950's during the first half, followed by declining profitability during the 1960's. The decline subsequently showed a marked reversal during the first part of the 1970's.<sup>20</sup>

The only reasonable assessment based on this data is that no long-term trend for profitability exists — neither rising nor falling. Our calculations thus conflict with the conclusions reached, for example, by the Capital Market Commission, which argued that the return on capital in industry has declined during the post-war period.

<sup>18</sup>Cf Johansson, *op cit.* p. 113, Note 2.

<sup>19</sup>The regression equation is  $R_M^R = 0.0515 - 0.000377t$   
(0.000603)

If real capital gains on stocks and fixed assets are excluded from profits in the measure of profitability, we get, instead,

$$R_M^R(\text{excl.}) = 0.0544 - 0.000439t$$

(0.000493)

The real rate of return on tangible capital exclusive of capital gains for the years 1951—76 has thus declined by more than 0.4 percentage points per decade. This trend is not statistically significant, either.

We confirm the Commission's conclusion about a declining profitability from the end of the 1950's to the end of the 1960's, but we find — contrary to the Commission — a sharp improvement in profitability from the first to the second half of the 1950's. As a result of this different assessment of the trend during the 1950's, in combination with a different view of the upswing in profitability during the early years of the 1970's, our conclusion is that, viewed over the entire period in question, the return on equity capital in industry has not fallen.

It should be pointed out, however, that our calculations of the rate of return on total capital are not directly comparable with corresponding estimates by the Capital Market Commission. Our measure of total profitability relates solely to the return on real capital, comprising buildings, machinery and stocks. A measure of profitability of this kind is reasonably of greater interest for assessments of the development of total industry than the measure of total profitability employed by the Commission. The Commission adopt a more business approach by also including the return on industry's financial assets in their measure of profitability.

The most important difference in the measuring techniques, which probably gives rise to the difference in the assessment of the trend in profitability relates, however, to the fundamental distinction between nominal and real profitability. Our esti-

<sup>20</sup>By including capital gains on stocks and fixed assets in the measures of profitability presented in Charts 1 and 2, the current economic pattern of profitability disappears. In assessments of profitability estimates which include capital gains, it is the long-term trend rather than the year-to-year changes which is of interest.

There is a special explanation for the sharp deterioration in profitability in 1969, which is related to the removal of the investment tax component in the taxation of goods as a result of the change-over, that year, from purchase tax to VAT. Following the change in the system of taxation, the price index of capital goods fell, which was recorded as a capital loss in the measure of profitability.

**Table 1. Real and nominal rate of return**

	1951 —55	1956 —60	1961 —65	1966 —70	1971 —75	1976
Real rate of return on tangible capital	4.3	6.1	4.8	3.5	4.9	2.0
Nominal rate of return on equity after tax	7.7	7.6	8.4	7.5	14.3	12.1
Real rate of return on equity after tax	1.7	4.5	4.1	3.2	6.0	2.7

mates of the rate of return on total and equity capital refer, as has just been shown, to pure, real measures. The Commission, on the other hand, present somewhat complex hybrids between nominal and real measures of return by *disregarding*, for both total and adjusted equity capital, (real) capital gains on fixed assets and changes in the real value of monetary assets and liabilities, and *including* nominal capital gains on stocks.<sup>21</sup> In periods of sharp price movements such as those during the early years of the 1950's and in the middle of the 1970's, a measuring technique of this kind can, of course, be directly misleading.

Finally, it should be pointed out that, unlike the Capital Market Commission, we have studied the rate of return on equity capital after the deduction of tax on net profits. As a result of the fact that, during the period in question, the effective tax burden has been more than halved, following, for example, an increasingly more frequent release of the investment funds and a rapid growth in companies' opportunities for depreciation, this definitional difference is also significant in an assessment of the trend.<sup>22</sup>

<sup>21</sup>See Note 3, *supra*, op. cit. p. 273. In a table on page 274, which applies solely to the period 1966—74, pure nominal and real profitability are also reported, together with the hybrid measure criticized above.

<sup>22</sup>Cf. Sodersten, *op. cit.*

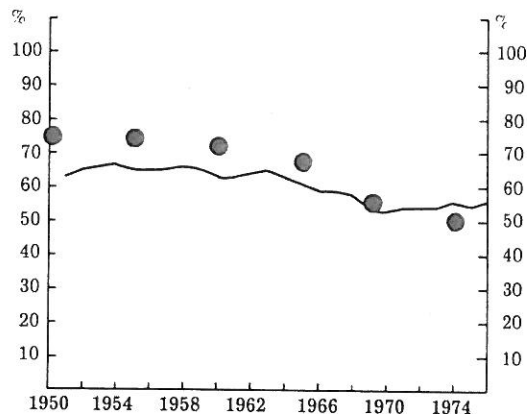
### Solidity and interest burden

The trend in industry's solidity, defined as the ratio between equity capital (inclusive of tax credits) and total capital is shown in Chart 3. As previously, fixed capital has been assessed in replacement prices. From the beginning of the 1950's up to the early years of the 1960's industry's solidity remained largely unchanged. Thereafter it declined by about 10 percentage points during the course of 6—7 years and once more remained constant during the 1970's up to the end of 1976.<sup>23</sup>

As we indicated at the beginning of the article, solidity is of interest primarily as a measure of the financial risk-taking that is associated with company financing. The lower a company's solidity, the larger are the sums which must irrevocably be required for amortization and interest payments. This means that, on the one hand, the prospects in terms of liquidity for the company to withstand, e. g. cyclical variations in the trend in profits are worsened, and, on the other, that variability in the return on equity capital increases.

It is difficult to make a direct assessment of the financial strains to which companies have been

Chart 3. Solidity in Swedish Industry 1951—76



N.B. = Solidity according to the Capital Market Commission Report (●)

subjected as a result of a decline in solidity at the end of the 1960's, for one thing, because official statistics supply no information as regards repayments of loans. However, we may note that financial costs have accounted for an increased share of companies' gross profits inclusive of financial receipts and, after deduction for taxes, from 19.5 % to 26.5 % i. e., by over one-third from the beginning of the 1960's to the beginning of the 1970's.

However, the change in this figure must be regarded with a certain amount of caution. The level of interest rates has been raised during the period in question and it is likely that, to a certain extent, this is an expression of an adjustment to an accelerating inflation. In times of inflation, nominal interest rates contain an element of real loan amortization. The significance of this line of reasoning is that the real "debt service" of industrial companies need not, in actual fact, have increased to the extent the above-mentioned figures would appear to indicate.

In addition, as regards solidity, our assessment does not follow current assessments. Concep-

<sup>23</sup>In order to assess the sensitivity of profits to the choice of rate of depreciation for fixed capital, we have, for purposes of comparison, made use of an estimate of capital stocks carried out by Johan Örtengren, at IIESR, where the average rate of depreciation is 6.7 % and also SCB's capital stock data with a rate of depreciation of scarcely 2 %.

In this case the rate of depreciation of real capital appears to have no effect whatsoever on the trend of solidity over time. However, as is expected, the level of solidity, is affected. SCB's real capital stocks, with a depreciation rate of less than 2 %, thus provide a debt/equity ratio, on average, of 65 % during the 1970's, compared with 55 % and 55 %, when the rates of depreciation are 5.8 % and 6.7 %, respectively.

It must be noted that all these estimates are based on the assumption that the economic life of the fixed capital remains unchanged during the period in question. If a change of this kind had actually taken place, it is conceivable that the development of solidity, in reality, would have been very different over time, from that shown in Chart 3.

tions of a wide-spread weakening of the relationship between equity capital and total capital — especially during the 1970's — often appears to be based on balance sheet data where fixed capital is valued at historical acquisition prices. In times of rising prices, a solidity of this kind in accountancy terms will develop less favourably compared with real solidity, which is measured on the basis of capital valued on replacement terms. By evaluating fixed assets at acquisition prices, the measure of solidity will not take into account the fact that the real value of liabilities falls in step with price rises.

In contrast to us, the Capital Market Commission indicate a gradual decline in solidity from 75 % in 1950 to 50 % in 1974. (See Chart 3). A more detailed examination of unpublished tables of calculations shows, however, that our assessments differ only for the period after 1964. The technique of the Commission in indicating odd years conceals the fact that solidity remained largely unchanged during the 1950's and at the beginning of the 1960's.

While our figures indicate that solidity has been constant during the 1970's up to 1976 (after a decline during the second half of the 1960's), the conclusion of the Commission is that the deterioration in solidity has proceeded during the first half of the 1970's, too. For this latter period, the assessment of the Commission appears, however, to be based on their estimates of industry's liabilities, which do not agree with the data reported in SCB's financial statistics.<sup>24</sup>

#### Is profitability adequate?

It has been shown in our article that the decline in capital's share of value-added, which has been

<sup>24</sup>The fact that the Capital Market Commission report a higher level for solidity (before 1965) than we do is related to the way in which the Commission treat companies' trade liabilities. These have been deducted from both sides of industry's balance sheet and solidity has then been calculated on the basis of this "adjusted" balance sheet.

reported for Swedish industry, need not reflect a reduced rate of return on capital. Instead, the decline in capital's shares appears to be related to the fact that substitution has lagged behind the rise in wage costs of capital utilisation.<sup>25</sup>

In addition, we have found, after corrections for capital gains in industry, that solidity has been constant during the 1950's and at the beginning of the 1960's. We have also shown that a reduction in the level of solidity occurred at the end of the 1960's and that solidity was subsequently stable up to the end of 1976.

One can speculate about the causes of this change in solidity towards the end of the 1960's. It is possible that what is noted are the consequences of a national adjustment on the part of companies to a changed supply structure on the capital market. Companies could afford to reduce solidity because the risk premium shareholders hoped to obtain was reduced, at the same time as loan capital became cheaper and more easily available. In this way companies were able to increase the level of borrowing without forcing up the cost of financing.

What is interesting is that it is possible to observe a drastic reduction in risk margins measured as the difference between effective yield on industrial shares and interest rates on long-term industrial bonds. This difference decreased during the

<sup>25</sup>See Bergström, Villy and Melander, Hans, "Production Functions and Factor Demand Functions in Post-War Swedish Industry", to be published in *Scandinavian Journal of Economics*, No. 1, 1980. A report of estimates of industry's production functions is given here. The results of these estimates are interpreted on page 50 above.

<sup>26</sup>In the short term this mechanism has most likely operated in connection with excessive wage demands in wage formation, such as in 1975—77. Compare here with the discussion in Calmfors, Lars "Inflation in Sweden. Theory and Recent Experience" and Aukrust, Odd, "Inflation in Open Economies. A Norwegian Model", both in Krause and Salant (ed.) *Worldwide Inflation. Theory and Recent Experience*. The Brookings Institution, Washington, 1977.

1950's and 1960's and was especially small during the latter half of the 1960's, i. e. the years when industry's solidity declined and the rate of return on equity capital, as shown in Table 1, was relatively low.

It is tempting to speculate here. Perhaps confidence in the stability and certain growth of capitalism in the West was greatest during the second half of the 1960's. Another observable change during this time is that institutional ownership began to replace household ownership. This has probably resulted in a reduction in the cost of equity capital as a result of the fact that institutions require a lower return than private households.<sup>27</sup>

It may be appropriate to conclude this article with an assessment of the significance of the wave of instability which swept over the market economies during 1973—76. The fact that we note an historically stable rate of return and solidity is, of course, of little interest in a future perspective, precisely because of the general economic instability during the mid-1970's. There is reason to expect that the growing confidence in post-war economic systems, which we discussed at the beginning of this article, has now been interrupted. Exactly in the same way as in the 1930's after "The Great Depression", companies in the 1980's may demand higher solidity and rates of return on investments than previously.

Industrially, the 1930's was a conservative decade, characterized by cautiousness and "financial

soundness". It is very possible that the figures we have presented imply levels of solidity and rate of return that are too low in view of the authorities' targets for industrial expansion and in combination with the "new investment function" after the "great recession" of the 1970's.

We do not yet know whether the violent fluctuations in profitability in Swedish industry during the years 1973/78, actually conceal a break in the trend. Even if this is not the case, traditional long-term profitability may prove to be too low to produce an investment boom of the magnitude required for the 1980's in order to solve the problem of the external balance of payments by means of rapidly rising industrial production and exports. In a new environment filled with uncertainty concerning the prices of raw materials and the economic stability of the rest of the world, either an upward shift in the average level of profitability over the business cycle, or institutional intervention in the economic system in order to achieve central goals concerning the balance of foreign trade will presumably be required.

<sup>27</sup>These interpretations are quite compatible with the model of companies' financial behaviour, which has been developed and estimated in Eriksson, Goran and Södersten, Jan (The financing and assets structure of industry). (Appendix to IIESR's Long-Term Assessment 1979). The marginal cost of loans rises more slowly in connection with an increased degree of indebtedness than the marginal cost of equity capital. Since the demand function for loan capital is very elastic, an increase in the supply of equity capital has considerable effects on the degree of indebtedness in connection with small changes in (the optimal, combined) marginal cost of loans and equity capital.

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## **Publications in English 1979**

**Nominal and Real Profit in Swedish Industry.** Villy Bergström and Jan Södersten. Booklet No. 99. 11 pp.

**A Look at Capacity Utilization in Swedish Industry.** Jim Albrecht. Booklet No. 95. 13 pp.

## **1978**

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**Att välja 80-tal.** IUI:s långtidsbedömning 1979 (Choosing the 80's. IUI Medium-term Survey 1979). G. Eliasson, B. Carlsson, B.-C. Ysander m fl. 393 pp.

**Fem avgiftsargument.** Några principiella synpunkter på finansieringsalternativ för den offentliga sektorn (The Pricing of Swedish public services — current practice and future alternatives). Booklet No. 98. 40 pp.

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