

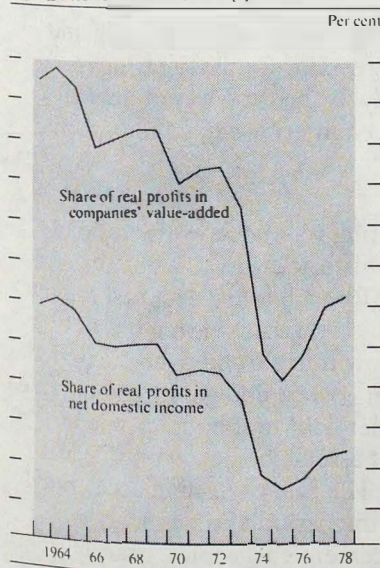
# Profitability and company finance: a supplementary note

This note presents revised and updated estimates of company profitability and the cost of capital.[1] Measures are shown of the rate of return both on trading assets and on the shareholders' (or equity) interest; and further material is presented on the significance of gearing—the ratio of debt finance to total assets—in the computation of the return on the equity interest.

## Shares of profits in national income[2]

Chart A shows the downward trend in the share of real profits (profits net of stock appreciation and capital consumption at replacement cost) in net domestic income during the 1960s and the accelerating decline evident in the 1970s. After recovering to 6½% in 1977 from a low point of about 5% in 1975, the ratio remained practically unchanged last year and is still well below the levels characteristic of earlier years. A similar pattern is exhibited by the share of real profits in companies' value-added, although the downward trend here is proportionately less pronounced, because this measure is independent of the declining proportion which companies' value-added bears to that of the whole economy. In 1978, the share of real profits in companies' value-added increased slightly to about 14½%.

Chart A  
Real profits as a proportion of companies' value-added and of net domestic income [a]



[a] Covers industrial and commercial companies (excluding North Sea activities). Real profits are defined in the text.

[1] Previous estimates were published in articles in the March and June 1976 issues of the *Bulletin* (pages 36 and 193 respectively), in a supplementary note in the June 1977 *Bulletin* (page 156), and in an article in the December 1978 *Bulletin* (page 513). Detailed definitions of the concepts described in these articles have not been repeated.

[2] Except for estimates of market valuation, all data in this and the following two sections are derived from the national accounts. Precise coverage is indicated in the charts and tables.

[3] The paths of real rates of return and measures of profits share have displayed very similar patterns in recent years, because of the relative stability of the capital/output ratio.

[4] It should be noted that the post-tax real rate of return figures for 1973 onwards incorporate the effects of stock relief.

[5] A simple model incorporating these effects on profitability was described in an appendix to the December 1978 article.

## Rates of return, the cost of capital, and the valuation ratio

There have been small revisions to the estimates of rates of return on total trading assets published in the December 1978 article; these revisions have tended to emphasise the improvement in real rates of return, both pre and post-tax, since 1975. The broad picture, however, remains unchanged, as Table A and Chart B show. Pre and post-tax measures of the real rate of return changed little between 1977 and 1978; and, as in the case of the share of profits in net domestic income, they are still very depressed in comparison with the years before 1974.[3] Pre-tax real profitability is somewhat higher than in 1974, but, as the table shows, both post-tax measures are below what they were in that year. But the inference that the real burden of taxation on companies has increased since 1974 should be treated with caution, because of the tentative nature of the post-tax estimates.[4] It is also worth remarking that the pre-tax historic cost rate of return declined in both 1977 and 1978, in contrast to the behaviour of the other measures of profitability. This reflects the acceleration of labour costs at a time when raw material costs were declining.[5]

Table A  
Industrial and commercial companies' rates of return on trading assets: national accounts estimates[a]

	Pre-tax historic cost	Pre-tax historic cost, net of stock appreciation	Pre-tax real[b]	Post-tax real	
				Backward-looking	Forward-looking
1963	16.4	15.8	12.1	7.9	9.9
1964	17.1	16.2	12.5	8.2	10.0
1965	16.2	15.3	11.8	6.4	7.0
1966	14.5	13.4	10.3	5.4	5.7
1967	14.1	13.6	10.6	6.0	6.3
1968	15.0	13.5	10.4	6.0	5.9
1969	15.1	13.4	10.1	5.8	5.0
1970	14.4	12.2	8.7	4.9	4.1
1971	15.0	12.8	8.7	5.7	4.5
1972	15.8	13.5	8.6	5.6	5.0
1973	17.3	12.6	7.2	5.7	7.2
1974	17.1	8.7	3.9	3.3	4.0
1975	16.0	9.3	3.5	2.2	3.0
1976	17.7	10.7	3.8	2.3	3.0
1977	17.0	12.3	4.5	2.5	3.6
1978	15.8	12.5	4.7	2.9	3.8

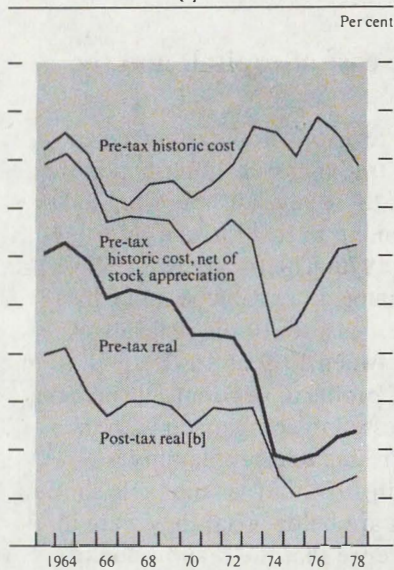
[a] Excluding North Sea activities.

[b] Net of stock appreciation and capital consumption at replacement cost.

The post-tax cost of capital series has been slightly revised since it was last published (in the June 1977 *Bulletin*). Once again, the overall picture is little different. Since the 1960s, when it declined broadly in line with rates of return, it has fluctuated around a

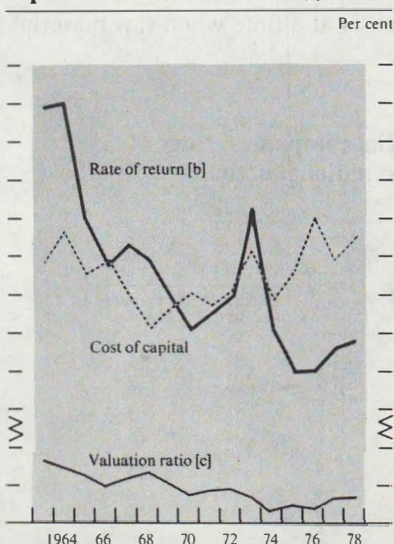
rising trend. Its high point in recent years was 7½% in 1976, equivalent to its level in the early 1960s. It fell quite sharply in 1977 but rebounded in 1978 to 6½% (see Chart C).

**Chart B**  
Rates of return [a]



[a] Covers industrial and commercial companies (excluding North Sea activities). Definitions were given in the March 1976 *Bulletin*, page 46.  
[b] Backward-looking.

**Chart C**  
Post-tax real rate of return, cost of capital and valuation ratio [a]



[a] The rate of return for industrial and commercial companies excludes North Sea activities, but the available data do not permit an equivalent exclusion in the case of the calculations of the cost of capital and the valuation ratio.  
[b] Forward-looking, after allowance for stock relief.  
[c] The valuation ratio is calculated without allowance for the impact of stock relief on the real rate of return in 1973, and with only partial allowance in 1974. Stock relief was introduced with retrospective effect in November 1974 (see the June 1976 *Bulletin*, page 204).

In principle, the significance of the cost of capital for company behaviour lies in its relationship with the real rate of return on total trading assets. Previous articles have explained that the incentive to invest can be represented by the ratio of the real rate of return to the cost of capital. The path of this ratio—known as the

valuation ratio in recognition of its alternative definition as the ratio of the financial valuation of companies to the replacement cost of their capital stock—is also shown in Chart C. Since 1968, the valuation ratio has been below unity, very considerably so for much of the period. Such a low relative rate of profit on the existing capital stock may be indicative of low expected returns on new investment. Continuing econometric research in the Bank suggests that investment has been low when the valuation ratio has fallen significantly below unity. Chart C shows that the valuation ratio recovered sharply in 1977 and was virtually unchanged in 1978. This was indeed matched by a higher level of investment in each of those years. But the incentive to invest, as expressed by the valuation ratio, is still more subdued than in any year before 1974.

### Gearing [1]

The extent to which a company's assets are financed by debt rather than equity—known as gearing—has recently acquired significance in two separate contexts. One is in connexion with the supply of finance to industry. The other, with which this note is mainly concerned, is the adjustment to profits which is required to measure the real rate of return on the equity interest: profits have to be adjusted not only for nominal interest payments on debt but also for changes in the real value of companies' liabilities because of general inflation. Proposals for inflation accounting have been much concerned with such adjustments (gearing adjustments) to net monetary assets/liabilities. This section comments on the behaviour of various measures of gearing since 1963. In the next section, estimates of the pre-tax rate of return on the equity interest, incorporating gearing adjustments, are presented.

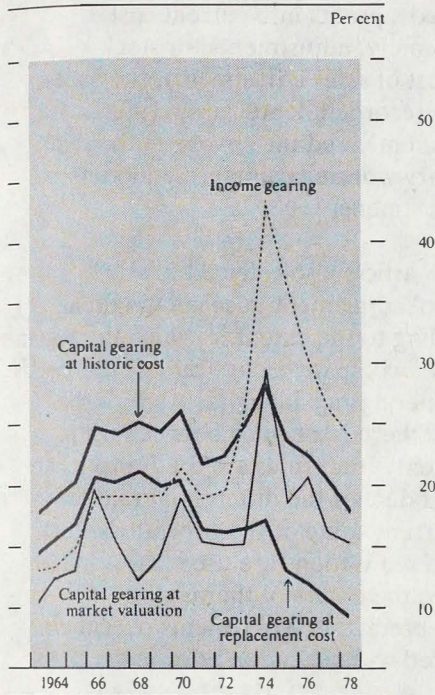
Chart D shows three measures of capital gearing and one measure of income gearing. Capital gearing is measured here essentially as the ratio of net debt [2] to the sum of net debt and equity (i.e. the counterpart of net assets).

Historic cost capital gearing is defined as the ratio of nominal net debt to the historic cost valuation of companies' net assets. Although it has declined rapidly since the peak in 1974, historic cost gearing has not displayed a significant downward trend over the period as a whole. Replacement cost capital gearing, measured as the ratio of nominal net debt to the replacement values of companies' net assets, increased until 1968, but declined thereafter. The rate of decline accelerated after 1974, so that over the period as a whole a declining trend in replacement cost capital gearing is clearly discernible. The third measure of capital gearing illustrates the ratio of market values of net debt and equity. Its pattern more closely resembles capital gearing measured at historic cost than at replacement cost.

[1] For previous discussions of gearing, see the June 1976 *Bulletin*, page 201 and the June 1977 *Bulletin*, page 159.

[2] Defined as the sum of the value (nominal or market) of companies' preference shares, loan stock and bank borrowing, less their holdings of liquid assets. Certain relevant items are, however, excluded because of inadequate data (e.g. net trade credit). More attention should, therefore, be paid to relative trends than to absolute levels of the gearing ratios shown in Chart D.

**Chart D**  
**Capital and income gearing [a]**



[a] Covers all industrial and commercial companies.

Gearing poses a risk to companies, because debt-service payments are a prior charge on income; if they are too high, cash flow problems can emerge. Accordingly, a measure of gearing is required which takes account of the proportion of cash flow pre-empted by interest payments. Income gearing is thus defined as the ratio of interest payments (including preference dividends) to companies' cash flow before dividend and interest payments.[1] It is more informative than capital gearing because it incorporates an additional dimension, namely the path of nominal interest rates; but it is of course not independent of the level of capital gearing. Chart D shows that income gearing has exhibited a marked upward trend, reaching a peak (43½%) in 1974. Thereafter it fell back, but by 1978 it was still nearly twice as high as in 1963. It is also apparent that income gearing exhibits a pattern more closely related to capital gearing measured at historic cost and at market valuation than at replacement cost.

The modest upward trend in gearing at market valuation probably owes much to the market's perception of the heightened risk which the growth of income gearing poses for the return to equity holders. The response of shareholders to increased risk is to seek a higher rate of return in compensation; and this is reflected in a lower price of equity, and thus in an increase in the market valuation measure of gearing.[2]

The divergence in the paths of income gearing and replacement cost capital gearing is simply another manifestation of the declining real rate of return; companies' cash flow before dividend and interest

payments has failed to keep pace with inflation (and hence with the replacement cost of companies' assets) while nominal interest rates have risen with inflation. It is necessary to qualify this argument, however, to the extent that outstanding debt is at fixed nominal rates of interest; for the higher the proportion of debt at fixed rates, the slower the growth of interest payments in response to rising nominal interest rates. In fact, the proportion of fixed-rate debt within companies' total liabilities has been declining, thus contributing to the growth of income gearing.

It is a well-known consequence of high and uncertain rates of inflation that companies are reluctant to undertake fixed-interest-rate commitments because of the risk of getting locked into high fixed-rate debt should the rate of inflation and nominal interest rates decline in the future.[3] As a result, an increasing proportion of company debt has been in the form of bank borrowing, on which interest rates are generally variable. Table B shows that the proportion has increased in every year since 1967. There are, however, some risks for companies in having a high volume of debt in maturities which do not extend beyond the medium term, and of which a substantial proportion is repayable on demand (although that proportion has declined as medium-term loans have been increasingly substituted for overdraft finance). In particular, future cash flow is thereby subject to uncertainty as to whether the debt can be rolled over on acceptable terms when required.

**Table B**  
**Debt structure of industrial and commercial companies**

End-year	Total nominal debt	of which, per cent		
		Preference shares	Debentures	Bank borrowing
1963	8,022	27.3	37.3	35.4
1964	8,752	25.1	35.6	39.3
1965	9,548	24.6	35.0	40.4
1966	11,002	20.0	42.9	37.1
1967	11,625	18.5	45.3	36.2
1968	12,810	17.3	46.0	36.7
1969	13,025	14.2	45.6	40.2
1970	14,501	10.8	47.0	42.2
1971	14,700	10.0	44.7	45.3
1972	17,674	7.6	38.5	53.9
1973	23,023	6.4	33.8	59.8
1974	27,635	6.7	31.0	62.3
1975	27,706	5.5	28.0	66.5
1976	30,665	5.1	25.8	69.1
1977	33,257	4.7	25.1	70.2
1978	34,433	2.7	22.6	74.7

### Rates of return on the equity interest

The December 1978 article reported measures of the pre-tax rate of return on the equity interest using company accounts data. The estimates, based on the aggregated accounts of listed companies published in the Department of Industry's *Business Monitor*, MA3,

[1] That is, the sum of gross trading profits net of stock appreciation, rent and non-trading income, net income from abroad, and net receipts of capital transfers, less UK tax payments.

[2] The price of a company's loan stock may also be adversely affected by a high income gearing ratio, but to a lesser extent than the price of its equity.

[3] The reasons were set out more fully in the June 1976 article.

*Company Finance*, are extended by one year (to 1977) in this section, with some small revisions to figures for earlier years.[1] Three adjustments are required to move from a measure of the return on a company's total trading assets to one on the equity interest:

- the deduction from earnings of net interest payments;
- the addition of a gearing adjustment to earnings to reflect the gains accruing to equity holders by virtue of the erosion of the real value of the company's net monetary liabilities at a time of inflation (or, looked at in another way, the gains accruing on that part of a company's physical assets financed by debt); and
- the deduction from total trading assets of net monetary liabilities, to leave the equity interest in the business.

The first and third of these adjustments are straightforward, but the gearing adjustment is somewhat complex. It represents an offset to the deduction of interest from earnings and effectively re-credits to income that part of the nominal interest payment which may be taken to represent the early repayment of real capital and which would need to be reborrowed to maintain the real value of the liability. Because a significant, though declining, proportion of debt is at fixed-interest rates, and because the nominal rate of interest has in recent years failed to keep pace with inflation, the gearing adjustment has exceeded the size of net interest payments in most years since 1963.

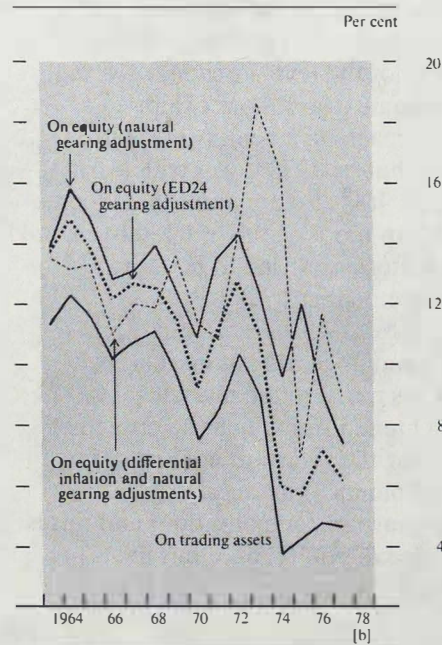
The gearing adjustment implied in this analysis corresponds to what was called the 'natural' gearing adjustment in the December 1978 article. It is an accruals concept which, in the case of a company with net monetary liabilities registering a 'gearing gain', conflicts with the overriding prudential requirement of accounting practice: namely, that gains should only be taken into profits when they are realised, whilst losses should be acknowledged when they accrue. The most recent proposal on inflation accounting from the accountancy profession, Exposure Draft 24 (ED 24)[2] accordingly requires that only realised gearing gains should be credited to profits. In this it follows the 'Hyde' guidelines of November 1977,[3] with, however, a significant difference: within the total of a company's net monetary liabilities, ED 24 distinguishes that element which represents net monetary working capital. The latter, which will be equivalent in most cases to net trade credit extended or received, gives rise to a gearing adjustment which, because of the short-term nature of the relevant items, is effectively regarded as being realised at the time it accrues. In practice, therefore, net monetary working capital is subject to a 'natural' gearing adjustment. For the remaining net monetary liabilities, however, the requirement that only realised gains be credited to profits is satisfied by limiting the

gearing adjustment to the geared (i.e. debt-financed) portion of the three adjustments employed in translating historic cost profits into current cost operating profits: namely, adjustments for stock appreciation (the cost of sales adjustment), the excess of current cost over recorded depreciation (the depreciation adjustment), and the change in the real value of net monetary working capital (the monetary working capital adjustment).[4]

The December 1978 article also referred to a 'differential inflation' adjustment in calculating real income, corresponding to the extent to which the rise in the average price of a company's physical assets exceeds the increase of a general price index.[5] As with the gearing adjustment, there is a choice between using accruals or realisations. If accruals are used, profits are credited with the product of the differential rate of inflation and the current value of the company's stock of physical assets. If realisations are used, the addition to profit is limited to the excess of the stock appreciation and depreciation adjustments over their value when computed with a general price index.

Three measures of the real pre-tax rate of return on equity, computed on the bases described above, are shown in Chart E, together with the real pre-tax rate of return on trading assets. Each of the equity measures displays a downward trend, but each consistently exceeds the real rate of return on total trading assets. The decline in the differential inflation-adjusted

**Chart E**  
Real pre-tax rates of return on trading assets and equity [a]



- [a] Estimates are based on the listed company sample in *Business Monitor*, MA3 covering manufacturing, distribution and services.  
[b] Figures not available.

[1] Similar calculations cannot be carried out for all industrial and commercial companies because complete balance-sheet data are not available.

[2] *ED 24: Current Cost Accounting*, published by the Accounting Standards Committee, April 1979.

[3] *Inflation accounting—an interim recommendation*, published by the Accounting Standards Committee, November 1977.

[4] It should be noted that ED 24, in contrast to the 'Hyde' guidelines, does not seem to require the immediate recognition in the accounts of a gearing loss in the case of a company with net monetary assets (to the extent that the latter are not included in net monetary working capital); this would appear to be not quite consistent with the concept described above.

[5] In the calculations for Chart E, the retail price index was used as the general price deflator to calculate both the gearing adjustment and the differential inflation adjustment.

series[1] is less marked than for the others. It is also noticeable that equity returns fell further in 1977, while returns on trading assets stabilised. This divergence results from the increase in real interest rates in 1977.

For the purpose of calculating the ED 24 rates of return, it has been assumed that monetary working capital comprises only net trade credit. The monetary working capital adjustment has been calculated by reference to the annual (December–December) change

in the retail price index. The ED 24 rates of return differ from those calculated according to the 'Hyde' guidelines by no more, generally, than 0.2 percentage points. ED 24 returns are higher whenever net monetary working capital is a liability (that is, when trade credit received exceeds trade credit extended), and are lower when net monetary working capital is an asset. In practice, ED 24 calculations for the *Business Monitor* sample of companies produced higher rates of return only for the years 1975–77.

[1] The December 1978 article noted, however, that the allocation of companies' financial years to particular calendar years in *Business Monitor*, MA3 is necessarily approximate, and the differential inflation adjustment, therefore, most uncertain.