

International comparison of corporate profitability

The profitability of enterprises is today more than ever at the focus of public interest. From a cyclical viewpoint the question of profitability is being posed in the context of the persistently weak level of investment. That question is not unrelated to the earnings position of German firms, which is featuring prominently amid the shift of production and investment to foreign locations. Even reliable national data on corporate profits are sparse, but information permitting an international comparison is even sparser. The revised BACH database of the EU Commission has recently provided data material for the first time which makes it possible to attempt such a comparison.

The following article compares various profitability ratios from the harmonised annual accounts statistics of west German, French and US incorporated enterprises. But it also examines the degree of informativeness of such simple cross-country comparisons. The latter are indeed subject to considerable problems stemming from institutional differences in corporate financing, different national accounting regulations as well as statistical and methodological discrepancies in the corporate balance sheet data.

Corporate profitability as an expression of a country's locational attractiveness

*Significance of
international
comparisons of
profitability*

The growing globalisation of markets, which – besides other factors – is partly a cause and partly a consequence of the internationalisation of production through, in the main, globally operating large enterprises, has markedly sharpened the locational rivalry between individual economies in recent years. Locational factors have increased in importance as a result. Corporate profitability, calculated from macroeconomic figures or also from aggregated annual accounts data of enterprises, is often regarded as an expression of a given country's locational attractiveness as it mirrors the combined effects of many different locational factors. Consequently, international comparisons of corporate profitability arouse great public interest.

The EU Commission's revised BACH database recently made available source material which enables such international comparisons of profitability to be made on a broader basis than previous studies, which led to rather varied and even contradictory results. As the subsequent analysis shows, however, the informative value of such cross-country comparisons of profitability is much more limited – for methodological reasons – than is commonly assumed. It is therefore not easily possible to compare corporate profitability – which may be more or less representative – between countries. Needless to say, such an average value cannot be used indiscriminately as a benchmark in the specific instance of an individual firm or investment.

The data material included in the analysis

Our study was based on material taken from the European Commission's database "Bank for the Accounts of Companies Harmonised" (BACH)¹ for the period 1990 to 1995, the last complete year for which such data are available. The BACH database comprises the annual accounts of incorporated enterprises from eleven European countries as well as from the United States and Japan. The balance sheet data for Germany and France were taken from the corporate balance sheet statistics of the Deutsche Bundesbank and of the Banque de France, respectively, while those for the United States originated in the Quarterly Financial Report (QFR) of the US Department of Commerce. The following study is restricted to the United States, France and western Germany – three major competitors in the international markets; moreover, the study only considers manufacturing firms, i. e. potential or actual global suppliers of the most important category of traded goods.

*BACH database
used as a
source*

The range of firms included in the analysis varies. For example, the statistical data for the United States are based on results expanded across the universe of more than 170,000 corporate groups in the manufacturing sector. These data were drawn from the consolidated annual accounts of a stratified sample of just under 7,000 enterprises. In the case of western Germany and France, by comparison, the sample comprised all the individual annual accounts of incorporated enterprises

*Differences in
the source
material*

¹ Users can also obtain the entire dataset for a certain fee from the European Commission (Directorate-General for Economic and Financial Affairs) in Brussels.

in the manufacturing sector that were available for two consecutive years in the respective national corporate balance sheet statistics. In each of the two countries, these changing samples consisted of about 10,000 incorporated enterprises which accounted for approximately 60% and 50%, respectively, of the turnover generated by that country's manufacturing sector.

Measuring corporate profitability

*Different
profitability
ratios*

The concept of corporate profitability, which is frequently used not least in discussions on competitiveness, by no means has an unambiguous definition. In general profitability – as a measure of firms' earnings potential – is denoted by a ratio which measures an earnings variable of the profit and loss account in proportion to a suitable reference variable. The possible denominators are, essentially, the capital employed and its components or turnover. The choice of the suitable reference variable depends on the aim of the study. But this problem of choosing the indicator is frequently overlooked in analyses of corporate profitability; owing to their differing construction, the various profitability ratios cannot all be used for the same analytical purpose.

*Return on
equity*

In the context of the debate on locational attractiveness, and hence from the viewpoint of a potential supplier of risk capital, the return on equity is undoubtedly the most important measure of profitability because it expresses the return on the invested capital, which determines a firm's ability to finance capital expenditure and to bear risks. There is

a close link between return and equity in several respects. Thus in general a high return on equity not only attracts further capital but is itself also a source of increasing the level of own funds by ploughing back profits. High returns on equity thus signal locational advantages in the context of international competition and favour the inflow of external financial resources. It should not be overlooked, however, that the return on equity disregards the financing risk which arises from the use of borrowed funds.

As a rule, the return on equity is calculated on the basis of the profit for the year after taxes, as the effective return on the capital employed after deducting all taxes on corporate profits is doubtless the relevant measure on which investors base their decisions. However, the information contained in annual accounts data does not allow any meaningful comparisons to be made about the tax burden. This is because these data reflect to very differing degrees the overall burden on corporate profits, which *inter alia* depends fundamentally on the combined effect of corporation tax and of the rate of income tax payable by the shareholders (which is not recorded in the balance sheet data). In the United States, for example, the profits of incorporated enterprises are subject to corporation tax, while dividend payments to shareholders are additionally subject to income tax. In Germany and France the corporation tax paid by incorporated enterprises on distributed profits can be offset either in full or in part against the shareholders' income tax liability. In view of these problems, no attempt is made in the following to com-

*Gross versus
net view*

pare net figures (to which a comprehensive separate study would have to be devoted), attention being focused instead on gross figures. It must be admitted, however, that, because of the accounting latitude granted by the law, the profit before taxes, too, is not completely independent of the tax burden.

*Return on
total capital
employed and
return on
turnover*

In order to eliminate the effect of differences in the respective shares of borrowed and own funds on profitability, some comparisons measure the return on total capital employed, and quite a lot measure the return on turnover, i. e. the ratio of the profit for the year to total capital employed or to turnover. But whether the return on total capital employed is a suitable indicator for comparisons of competitiveness appears open to serious doubt, for this variable is influenced to a major extent by the use of the leverage effect, that is the ability to increase profits, and hence the return on equity, by borrowing additional external funds. A high return on equity may therefore be accompanied by a relatively low return on total capital employed, from which one must be careful not to draw false conclusions concerning the competitiveness of an enterprise or a location. In contrast to the return on equity, the return on turnover measures how much income the firm is able to generate from its actual production. On the one hand, this profitability ratio is a commonly used indicator in international comparisons because its calculation poses few comparability problems owing to the largely uniform definition of the denominator. On the other hand, this ratio has the drawback that it does not take account of the level of capital employed (which

is important, for example, for the choice of location). To achieve a unit of turnover, capital is necessary in greatly varying amounts in different countries.

Comparison of corporate profitability in the three countries analysed

The profitability ratios of the French, US and west German incorporated enterprises included in the study differed considerably for the period 1990 to 1995 (see table on page 37). The level of and trend in profitability were also doubtless influenced by the slightly differing business cycles in the three countries. Nevertheless, cyclical divergencies probably had only a fairly minor impact on the average values for this six-year period. Of the three countries considered, the American firms recorded the highest return on equity, at over 14 %, followed by west German firms with 12 ½ % and French incorporated enterprises with 10 ½ %. On the other hand, the results both for the return on total capital employed² and for the return on turnover indicate that the profitability of German and French firms was virtually identical on average during the first six years of the current decade.

*Empirical
results*

The US firms included in the study outperformed their French and west German com-

² The return on total capital employed is normally calculated as the ratio of the profit for the year before taxes, inclusive of interest paid on borrowed funds, to the balance sheet total, because the interest payments for the borrowed funds were also earned during the accounting period. As interest expenditure is not shown separately in the US data, it was not possible to calculate the ratio according to this concept.

petitors in respect both of return on equity and return on turnover. If the return on turnover or even the return on total capital employed is taken as the measure, the relative gap is considerably wider still than in a comparison based on return on equity: in the period under review the American groups generated a profit/turnover ratio which on average was around two-thirds higher than that of the European incorporated enterprises included in the analysis.

*Influence of
the capital
structure*

The fact that the gap in the return on equity is much smaller than that in the return on turnover is largely due to the differences in capital structure. According to the BACH data, the US incorporated enterprises had the highest average ratio of own funds to the balance sheet total, at around 38 %, followed by the French firms, with about 35 %; by contrast, the own funds ratio of the west German incorporated enterprises came to only 30 %. As was shown in a previous article,³ the differences in the capital base that become apparent in international comparisons of annual accounts should not be interpreted automatically – as sometimes occurs – as an expression of competitive strength or weakness. These are often due rather to accounting differences, but more especially also to variances in significant institutional factors. On a global view, for instance, the disparities in the own funds ratios between German and French firms can be attributed very largely to accounting-related causes.

³ See Deutsche Bundesbank, Comparison of the provision of business enterprises in selected EC countries with own funds, Monthly Report, October 1994, pages 73–87.

International comparison of corporate profitability

%			
Period	Return on equity ¹	Return on total capital employed ²	Return on turnover ³
Germany			
1990	19.6	5.8	4.1
1991	16.7	5.0	3.6
1992	11.1	3.3	2.4
1993	4.9	1.5	1.2
1994	9.6	2.9	2.3
1995	12.8	4.0	3.1
1990–1995	12.4	3.8	2.8
France			
1990	16.5	5.3	4.2
1991	11.5	3.9	3.1
1992	7.8	2.7	2.2
1993	3.6	1.3	1.1
1994	11.0	4.0	3.4
1995	11.7	4.2	3.4
1990–1995	10.3	3.6	2.9
United States			
1990	15.0	6.0	5.5
1991	9.5	3.8	3.6
1992	3.5	1.3	1.2
1993	11.8	4.2	4.0
1994	22.3	8.3	7.6
1995	23.2	8.9	8.2
1990–1995	14.2	5.4	5.0

Source: BACH database of the EU Commission. — ¹ Ratio of profit for the year before taxes to own funds. — ² Ratio of profit for the year before taxes to the balance sheet total. — ³ Ratio of profit for the year before taxes to turnover or total operating income.

Deutsche Bundesbank

*Own funds
ratio of German
and French
firms*

A major role is played by the method of accounting for the provisions set up by German enterprises for their pension obligations. Whereas in France the (relatively uncommon) company retirement pension schemes are operated – as in the United States – by pension funds which are separate from the enterprises, in Germany company pension entitlements usually represent direct obligations of the employer. German firms thus have to set up provisions for the internal financing of the future company pension benefits corresponding to the level of accumulated entitlements during the term of the pension contracts. These financial resources can be used by firms as long-term borrowed funds as part of their internal financing. To the extent that these funds are used to finance unavoidable business expenditure (e.g. on tangible fixed assets), they merely obviate the need to procure external capital. But in part such funds are also invested, say, in financial assets intended specifically to cover pension obligations. This extends the balance sheet and leads indirectly to a corresponding lowering of the own funds ratio. Judging by the results of the aforementioned earlier study, it can be assumed that the differences in profitability between German and French firms that become evident when comparing the return on equity are caused mainly by methodological factors.

*Considerable
comparability
problems with
the US data*

The more or less institutional differences in transatlantic comparisons are probably rather more significant. The first thing to note is that in the financial system of the United States, which has traditionally been oriented very strongly to the capital market, particularly

favourable conditions exist for obtaining risk capital via the capital market that enable firms to achieve a capital structure featuring a stronger equity base. In the United States even medium-sized and smaller firms enjoy unhindered and inexpensive access to the capital market. Bank financing, by contrast, plays a much less important role on account of the country's specialised banking system, the fact that enterprises do not have a close link to a particular "house bank" and, not least, owing to the comparatively high costs of bank financing. This may be one reason why the own funds ratio of US firms is higher than that of the European enterprises considered in this study. But in transatlantic comparisons, too, one needs to take into consideration accounting differences, which have an even greater bearing in this context than they do when comparing German and French companies. Another relevant factor is that the available data for the United States comprise group accounts, whereas the source material for European firms consists of individual accounts.

All in all, the above considerations indicate that the own funds ratio of enterprises is not susceptible to international comparison directly – i.e. without a detailed analysis of the results taken from a given dataset. Most of these differences which impair comparability cannot be quantified, so that ultimately the sole option remaining is that of a qualitative evaluation which inevitably contains subjective elements.

At first sight it might seem that an international comparison of the return on turn-

over might not be affected – or, at least, might be affected to a lesser extent – by the problems mentioned above in connection with the provision with own funds. But that is true only of the denominator of this variable. By contrast, this ratio shares with other indicators of profitability the far greater difficulties associated with determining the value of the numerator, which pose problems when comparing profits. A closer look will be taken in the following section at the discrepancies in calculating profit, including some examples.

Differences in calculating profit

*Different
accounting
philosophies
and policies*

Corporate accounting in the United States pursues a markedly different objective from that in France and Germany. Not least on account of the relatively large weight of capital market financing on the North American continent, the information requirements of investors and short-term dividend interests, as reflected in enterprises' orientation to "shareholder value", play a more significant role than they do for European firms. By contrast, accounting in Europe is geared mainly to creditor protection and is characterised by the extensive synchronisation of accounting under commercial law and tax law. Consequently, US accounting policy, in the form of the "matching principle", gives priority to a system of profit calculation which is based on the accrual principle over the prudence principle that underlies German and French accounting law. These different accounting approaches lead not only to short-term deviations in the time profile of corporate profits,

which balance out within a few years, but to discrepancies in their level over the longer term as well.

One substantive material difference that helps to explain the profitability gap between US firms and their European counterparts is the divergent recognition of internally produced intangible fixed assets. That the amounts involved are not a "quantité négligeable" – as one might at first suppose – cannot be derived from the BACH data but can be demonstrated with the aid of the material from the Compustat database⁴. It shows that intangible assets made up about 7% of the balance sheet total in the financial statements of some 3,000 listed US firms on average in 1994 and 1995, compared with only around 1% in the case of French and German incorporated enterprises.

*Accounting
differences in
respect of
intangible fixed
assets*

American law permits the capitalisation not only of purchased intangible assets but also of those intangible assets that have been produced by the firm itself (e.g. patents, licences, trademarks, software), and US firms make use of this option. What is more, extremely long depreciation periods (up to 40 years) are permitted for these assets. In Germany and France the cost of internally produced intangible fixed assets has to be included directly in the profit and loss account; only intangible assets acquired from others can be capitalised, and they have to be written off within five years.

⁴ This commercial database for financial statements operated by Standard & Poor's contains around 19,000 annual accounts of US and Canadian firms.

*Differences in
the valuation of
fixed assets ...*

Another key factor determining the level of the profit for the year as disclosed in the annual accounts are the different valuation rules for fixed assets and for their method of depreciation. For example, US accounting principles allow distinctly higher valuations for internally produced plant than do the German and French regulations. The different philosophies underlying accounting practices on the two sides of the Atlantic become particularly evident in the case of depreciation. In Germany and France, on account of the reverse authoritative principle, the commercial financial statements tend to feature tax valuations which are used not least to keep the tax-liable profit as low as possible. In the United States, by contrast, the commercial balance sheet and the tax balance sheet are completely separate. As a result, American firms have no opportunity to avail themselves of special tax depreciation facilities in the commercial balance sheet, and the depreciation methods and periods in the USA are influenced far less by tax considerations (leading to an accelerated amortisation of assets) than in Germany and France.

*... and above all
divergencies in
depreciation
practices*

Admittedly, there is a basic choice in all three countries included in the study between declining-balance, straight-line or units-of-production methods of depreciation. But US firms resort less to declining-balance depreciation methods, and in terms of the useful life assumed for assets they distinctly exceed the periods which in Germany or France are considered the standard in tax law (for example on the basis of tax depreciation tables). As a result, the depreciation amounts of American firms, measured against the (admit-

Depreciation of fixed assets

as % of accumulated fixed assets

Period	Germany	France	United States
1990	27.6	21.9	13.3
1991	27.0	23.0	13.3
1992	27.0	23.7	13.8
1993	26.3	23.2	13.7
1994	27.3	22.5	13.6
1995	26.8	22.5	13.7
1990–1995	27.0	22.8	13.6

Source: BACH database of the EU Commission.

Deutsche Bundesbank

tedly fairly high) residual book values of fixed assets, are only about half as high as those of German enterprises, as the above table shows. The gap between US and French firms is somewhat narrower; but that is largely due to the fact that under French accounting rules extraordinary depreciation of fixed assets has to be shown under extraordinary charges. Other than that, no major differences are apparent between the depreciation practices of French and German incorporated enterprises. By contrast, the deviating practice of US firms leads in an expanding economy, especially during phases of rising investment activity, to a perceptibly lower volume of depreciation and hence to noticeably higher profits.

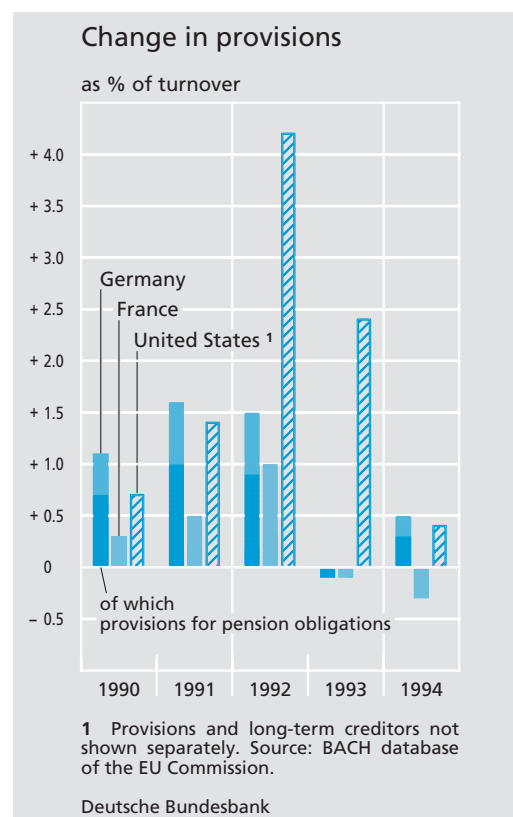
Fundamental transatlantic differences – with corresponding implications for corporate

Differences in the disclosure and valuation of provisions

profits – also exist in the methods of accounting for and valuing provisions. Under the American accounting system, provisions are not a separate balance sheet item but are included instead under creditors. This classification as liabilities means that provisions can only be set up for obligations to third parties. Provisions for future expenses, which constitute a significant parameter of German and French accounting policy, are therefore not permitted in the United States. Moreover, the creation of provisions in that country is coupled to the precondition that the liability provided for is almost certain to be incurred. (If the likelihood of incurrence is lower, only a reference in the notes on the accounts is required.) By contrast, in Germany and France – in line with the prudence principle – anticipated incurrence suffices. In addition, the quantification of the liability is subject to stricter rules in the United States than in Europe, which is why provisions for contingent liabilities (e.g. provisions for guarantees, provisions for environmental stipulations) are hardly ever set up in practice. Finally, US firms tend to place a lower assessment on the need for provisions.

Transfers to provisions recorded by US firms

The effects of these accounting and valuation differences cannot be precisely quantified using the information provided by the BACH database since in the QFR data, as is customary in US financial statements, provisions are aggregated with other major long-term creditors. However, the exceptionally large changes in this item in the years 1992 and 1993 are striking. They apparently relate to particularly high transfers to provisions. This was because the introduction of new ac-



counting regulations for certain company social benefits obliged US enterprises to set up provisions for post-retirement benefits other than pensions (notably the reimbursement of health care costs and life insurance grants); in 1992 and 1993 this item evidently included a substantial retrospective portion to cover previous periods. In the other years the provisions appearing in the income statements of American enterprises were, like those of French firms, of rather minor significance.

The differences described above, which hamper international comparisons of corporate profits, result primarily from accounting practices. But equally significant distortions also arise from the differing composition of the raw material in the BACH database. As men-

Distortion owing to special factors

Differences in recorded earnings in group and individual accounts

tioned earlier, the annual accounts statistics for the German and French enterprises comprise individual financial statements of incorporated enterprises, whereas the American figures are taken from the consolidated accounts of groups. Hence the income statements of US firms in part reflect valuation differences with respect to the profit and loss accounts of European enterprises.

*Impact of the
equity valuation
method*

The income statements of US groups contain considerable income stemming from the equity method⁵ of accounting for domestic subsidiaries and foreign participating interests that did not have to be consolidated. Their financial result therefore comprises not only direct income from participating interests but also valuation changes in respect of their participations in line with the changes in the equity of the subsidiaries. By contrast, the individual accounts of German and French enterprises exclusively embrace profit and loss transfers from subsidiaries.

*Different
recording of
profit transfer
agreements*

Furthermore, the comparability of the source material is also impaired by the different statistical recording of the effects of profit transfer agreements. The profit recorded in the individual accounts of German incorporated enterprises is statistically understated compared with the consolidated US group accounts in that a major part of the generated profit for the year is disbursed on the basis of profit transfer agreements to parent companies outside the manufacturing sector which – for example as holding companies – are not recorded in the Deutsche Bundesbank's corporate balance sheet statistics. Profit transfer agreements with a comparable

effect do not exist under French accounting law. If the annual accounts of subsidiaries and parent companies are adjusted accordingly, the ratio of profit for the year before taxes to turnover of German incorporated enterprises is raised by roughly ½ percentage point.

Conclusions

International comparisons are often problematical; that is particularly true when comparing corporate profitability, as this study has shown. Although the revised BACH database now undoubtedly provides high-quality source material for such a comparison, the use of these data for the aforementioned purpose requires critical analysis and examination in many respects. That starts with the selection of the appropriate indicator. If only the bare figures are considered, the individual ratios present a disparate picture in part. Thus in terms both of return on equity and of return on turnover, the US firms included in the study recorded a lead – of varying magnitude – over the west German and French enterprises on average between 1990 and 1995. On an inner-European comparison the return on equity of the German firms was higher than that of their French counterparts, whereas the German and French firms fared equally when measured by return on turnover.

*Informative
value of
international
comparisons of
profitability*

⁵ Under the equity method, the book value of participating interests is adjusted in line with the changes in the equity of the respective subsidiaries.

The above exposition has shown that the informative value of these results is limited by the manifold differences between the countries analysed. That does not mean to say, however, that, after making a critical analysis – especially of those factors that distort the comparability of the results – the ranking of corporate profitability between the three countries analysed could change fundamentally. Given the size of the recorded profitability gap, it is likely that the profitability of the US firms would still be higher than that of the European enterprises included in the sample even after taking into account the manifold discrepancies. This puts into perspective the

improvement in the earnings position of west German firms since 1993.

However, it would be a cardinal error to conclude from such profitability comparisons, with reference to the debate about Germany's locational strengths and weaknesses, that there is no need for further economic policy action. It should be remembered in this context that the question of the tax burden on corporate profits has been disregarded in this article; but it is precisely on that issue that the need for action would appear to be most pressing.