

Companies' short-term financial decisions

This article summarises the findings of research undertaken in the Bank into the factors underlying the short-term financial behaviour of some 700 UK-based companies.⁽¹⁾ Information about these companies was taken from their published accounts and was used to model their decisions about, for example, appropriate levels of bank borrowing or holdings of bank deposits and other liquid assets. The reasons for undertaking this research, the approach adopted in modelling short-term financial behaviour and some of the findings are briefly discussed.

Background

One of the difficulties in attempting to control monetary growth is that the demand for bank loans, in particular from companies, has appeared quite insensitive to changes in cost. In addition, it has been difficult to explain why companies in aggregate should have at times simultaneously increased both their bank borrowing and their bank deposits by substantial amounts. There have been a number of attempts to explain fluctuations in total company borrowing from banks, but none has yielded a robust empirical relationship. One of the reasons advanced to explain these findings is that changes in financial aggregates reflect decisions by individual companies taken for a variety of motives, and that aggregate economy-wide data, which had formed the basis of previous studies, masked this diversity. Some companies have, for example, increased their bank borrowing in recent years primarily to help finance the expansion of their businesses, while others have relied on bank finance to cover a shortfall in their net operating revenues or to finance extraordinary costs associated with a severe contraction of their business. It may not be possible to observe this variety using aggregate data.

Company accounts are a source of information that is largely unexplored by economists. Their main advantage is that they allow the effects of both local and economy-wide influences on financial decisions to be assessed. Moreover, because company accounts information is more plentiful than aggregate time series data, it allows the effects of the various factors underlying company decisions to be identified with greater precision.

There are, however, some drawbacks to basing research on company accounts. The most important, as far as this study was concerned, is that it will not produce an empirical relationship that can be used directly to predict aggregate corporate borrowing from the UK monetary sector. This is because company accounts consolidate information about both UK-based and overseas operations, and do not, for example, distinguish between short-term borrowing within the United Kingdom and overseas. For this reason only companies whose sales

were primarily in the United Kingdom were included in the sample of companies analysed, on the ground that these companies were most likely to rely on sterling finance raised domestically. In this way, it was hoped that the study would offer insights into the factors which influence companies' decisions relating to short-term financing that would be of use to those responsible for monetary policy.

Theoretical considerations

The basis of the model used in the study was the following simplified flow of funds statement for a company:

$$f = c - p - e.$$

where f is the net short-term financing requirement
 p are net funds generated by current operations
 c is fixed capital expenditure
 e are funds raised by way of equity issues and long-term borrowing

This simply says that a company's net requirement for short-term finance reflects funds required for capital expenditure, less any funds generated by its mainstream operations or funds raised by way of capital issues and long-term borrowing. The reason for focusing on short-term financing in this way reflected the view that companies are likely to make decisions on, say, fixed investment, capital issues and production and price levels *prior* to deciding on the pattern of their short-term financing. Moreover, once made, these prior decisions can probably only be changed at considerable cost. It is, for example, often only possible to delay capital expenditure programmes by meeting penalty costs as contracts are cancelled. By contrast, short-term financial facilities provide the considerable advantage of flexibility.

A wide range of short-term financial instruments are available to companies, but, to keep this study manageable, they were aggregated into four categories:

Sources of funds:	borrowing from banks (repayable within one year)
	trade credit received

(1) A detailed description of the research will form the basis of a *Discussion paper* by G Chowdhury, C J Green and D K Miles to be published shortly.

Uses of funds: acquisition of bank deposits and other liquid assets
trade credit extended

It was assumed that, in deciding how to allocate its overall net demand for or supply of short-term finance among these four instruments, a company took into account both relative interest rates and the shape of its own finances, including capital gearing and profitability. Quantitative restrictions on bank credit, which had applied at various times in the 1970s, were also thought relevant, in so far as they might have distorted the pattern of financing. A company's decisions relating to short-term financing were thus assumed to turn on both macroeconomic considerations and on an assessment of its own financial position.

Information on companies' finances was taken from their published accounts, as supplied in a computer-readable form by Datastream Limited. The 700 companies in this study were all non-financial companies that had reported at yearly intervals between 1970 and 1983. They were primarily quoted companies, but included some private companies and some UK subsidiaries of overseas parents. In addition, as mentioned above, they were companies where domestic sales accounted for a predominant share of total sales. In total, they represent around 40% of the assets of all UK industrial and commercial companies.

Summary of results

Estimates of the impact of economy-wide variables and of a company's own financial position on its portfolio of short-term assets and liabilities were obtained using econometric techniques for the analysis of disaggregated data.

Effect of expenditure and inflow

Estimates of the short-run effect on short-term financing of changes in company expenditure, inflows of longer-term funds and profits are shown in Table A. (Short-run in this context refers to a period of twelve months.) The table shows, for example, that an estimated 40% of an increase in fixed investment (other things being equal) is financed by bank borrowing in the short term, with around 30% coming from running down liquid assets and roughly the

same amount from trade credit received (presumably from suppliers of capital goods). About 40% of the finance for stockbuilding is also provided by bank borrowing, while trade credit supplies about 50%. There was little evidence that increased profits substantially reduce bank borrowing in the short run; rather, they are mainly used to build up stocks of liquid assets. Proceeds from capital issues and from longer-term borrowing, however, appear to be used to repay bank borrowing (by around 40p for each pound raised). Tax payments are financed predominantly out of holdings of liquid assets.

Interest rate effects

Relative interest rates appear to have a powerful short-run influence on firms' choices among liquid assets and liabilities, but the absolute level of interest rates has a much smaller effect. The effects of four interest rates—the three-month interbank rate; the three-month CD rate; the covered three-month eurodollar rate⁽¹⁾ and clearing banks' base rate—on firms' short-term financial decisions were examined. Table B shows the estimated effect on a company's short-term financial position of isolated changes in each rate (first four rows) and of the same rise in all four rates (bottom row). The calculations are based on the assumption that the change in rates is sustained for one year.

Table B suggests that changes in relative interest rates bring about a complex re-scheduling of short-term financial flows. A rise in the interbank rate, for example, causes a sharp reduction in bank borrowing, which leads to cuts in holdings of liquid assets. Net trade credit given also falls, reflecting the increased cost of financing this credit from externally-borrowed funds. A rise in the CD rate, on the other hand, encourages a buildup of liquid assets financed by higher bank borrowing. It also leads to an increase in net trade credit given, though it is not easy to explain this.

Isolated changes in the covered eurodollar rate and in base rates have smaller effects on companies' financial flows than do changes in the CD and interbank rates. Changing the level of all rates has only a minor short-run effect on the pattern of financing, although there is some substitution of net trade credit received for bank debt. This is plausible as the terms on which trade credit is made available are likely to be much less sensitive to market rates than is the cost of bank debt and the return on liquid assets. The effect is, however, not powerful.

The results reported in Table B describe the effects of a change in interest rates sustained throughout a company's accounting year. An attempt was made to consider whether the pattern of short-term financing reported in a company's accounts was largely influenced by the interest rates in the final stages of its accounting year. This would be the case if short-term financing could be adjusted quickly and at little cost. Estimated results provided some support for this proposition. They showed that the

Table A
Estimates of short-run impact of sources and uses of funds on firms' short-term finance

Pence per £1 additional expenditure/receipt; changes over one year

	Short-term finance				Total (1) - (2) + (3) - (4)
	Short-term bank borrowing (1)	Liquid assets (2)	Credit received (3)	Credit given (4)	
Sources and uses of funds					
£1 change in:					
Investment	41	-29	28	- 2	+100
Stockbuilding	42	-16	52	10	+100
Dividends	37	-16	17	-30	+100
Tax payments	15	-50	12	-23	+100
Capital issues	-36	30	9	43	-100
Loan capital	-39	30	- 8	23	-100
Profits	- 4	38	-25	33	-100

(1) ie including an allowance for the cost of forward cover.

Table B
The effect of changes in interest rates on firms' short-term finance

Percentage changes^(a)

	Short-term finance			
	Bank debt (short-term)	Liquid assets	Trade credit received	Trade credit given
Interest rate changes				
Rise of 0.1% in interbank rate	-13.0	- 8.5	- 2.25	-3.5
Rise of 0.1% in CD rate	+13.25	+ 7.0	+ 2.0	+3.5
Rise of 0.25% in covered eurodollar rate	- 0.2	+ 0.2	+ 0.2	—
Rise of 0.25% in banks' base rate	- 0.75	+ 3.0	+ 1.0	-1.0
Rise of 1% in all rates	- 0.6	+ 1.8	+ 2.75	+1.8
Average company stock in 1983 (£ millions)	9.3	13.0	34.4	36.6

(a) Changes in stock over one year from a change in spread sustained for one year.

structure of interest rates in the final three months of a company's accounting year had an effect on short-term financing over and above that of the average structure of rates during the accounting year. Trade credit given and received seemed to respond quickest to changes in interest rates, with bank borrowing also showing a significant response within three months.

The effects of quantitative controls on bank lending

There was only very limited evidence that the operation of the 'corset' in the late 1970s had an impact upon firms' bank borrowing and the effects were never estimated as being large. Similarly, the earlier introduction of *Competition and credit control* did not seem to have had a significant effect on companies' short-run financial behaviour.

Diversity in company financing

The results presented so far describe the average response of the companies in the sample. These results stood up well to various tests that were undertaken of their robustness and representativeness. There was, however, evidence that a firm's size influenced its pattern of short-term financing, with larger firms placing relatively more reliance on bank borrowing to finance expenditure. This accords with other evidence which suggests that smaller firms are particularly dependent on trade credit as a source of finance. Besides size, profitability appeared to be a significant determinant of company behaviour, with the more profitable firms relying less upon bank borrowing and more on net trade credit received. An increase in a company's real pre-tax rate of return from 10% to 15%, for example, was estimated to reduce its outstanding bank borrowing by roughly 7% after a year.

A company's decisions on short-term financing were also found to depend on its net liquidity. Not surprisingly there was strong evidence that firms with relatively high outstanding stocks of bank debt relied comparatively less upon additional bank borrowing and more on trade credit. Similarly, firms that began a year with higher than average liquidity tended subsequently to borrow less and to finance expenditure by running down their liquidity to more normal levels.

Conclusions

The study demonstrates the advantages of using information in company accounts to model company behaviour. It allows the decisions of individual companies to be modelled and for differences in behaviour to be explored. In addition, the wealth of detail in company accounts allows company decisions to be modelled with considerably more precision than does the more limited aggregate data that are available for the company sector as a whole. Nevertheless, there are some limitations inherent in the company accounts data, notably that the definitions used do not always correspond to those used in constructing aggregate company sector data.

The study has shown that a company's short-term financial decisions turn on an assessment both of its financial position and of the general economic environment. Perhaps the most interesting finding is that relative interest rates have a powerful short-term impact upon both sides of a company's balance sheet, whereas changes in the general level of rates have a very much smaller overall effect. This suggests that company short-term borrowing will prove difficult to control by way of changes in the general level of interest rates, *unless* items of company expenditure, investment and stockbuilding in particular, are also affected. The consensus from earlier studies was that investment and stockbuilding were not very interest sensitive⁽¹⁾ and this finding was supported by some of the results from this study. Some other findings are worth noting. First, a major short-run influence on a company's bank borrowing appears to be the funds required or generated by its mainstream operations, including capital expenditure, long-term borrowing and capital issues. However, profits seem to have only a minor impact on bank borrowing. Second, trade credit emerged as an important substitute for bank borrowing, with interest rate changes and extreme levels of capital gearing inducing a switching between the two.

(1) See, for example, W W Easton. 'The importance of interest rates in five macroeconomic models'. Bank of England *Discussion Paper* No 24, October 1985.