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We know that a major function of any financial system is to channel funds from lenders to borrowers.

Traditionally this has meant from households to firms but today much lending/borrowing takes place intra-sectorally.

In this session we shall see:

- How financial systems can be classified as bank-based or market-based
- How little firms rely upon external sources of finance
- Why the behaviour of financial markets (and share prices) matter to firms in spite of this.

Classifying financial systems

However, because of the traditional importance of the household → firm model, financial systems have come to be classified depending on how they provide corporate financing.

Two extremes:

Bank-based (Germany, Japan)
Market-based (USA, UK)

But what is striking about all systems is the extent to which firms rely on internal sources of finance. The following are rough orders of magnitude 1995-2000. (% of total sources of finance)

	Germany	Japan	UK	USA
Internal	70	70	80	100
Bank	16	20	0	-5
Bonds	-3	2	6	10
Equity	-3	3	12	-4
Other + error	20	4	2	-1

The view that firms in Germany and Japan rely much more heavily on banks (and less on bonds and equity) than UK and US firms is true, but all firms rely most heavily of all on internal funds.

This raises the Q of whether the behaviour of financial markets is largely irrelevant to large corporations?

Another way of posing this Q is to look at how much money is actually raised over a period of time by new issues (e.g. of chares) compared with the total amount of trading that in shares that takes place. e.g. in 2004 (Q1):

	Turnover £m	Funds raised by new issues £m	Ratio
Deutsche Börse	27	0	∞
Euronext (Amsterdam+Brussels+Paris)	9	6	1.5
London	463	6	77

Why then does market behaviour matter?

However, there are various ways in which market behaviour can affect corporate financing. The key to most rests with the **weighted average cost of capital (WACC)**.

$$WACC\ (K_O) = K_E \frac{E}{E+D+B} + K_D(1-t)\frac{D}{E+D+B} + K_B(1-t)\frac{B}{E+D+B}$$

where E = equity; D = 'debt' i.e. bonds; B = bank loans; t = tax rate; K = cost of funds

Retained profit (= internal funds) does not appear directly in the WACC formula.

Think. Where is it?

Retained profits belong to shareholders (until they are reinvested in capital equipment they appear on the balance sheet as 'shareholder funds'). Reinvested or not, they are part of the firm's net worth and thus enter into the current value of shares.

(Remember that *E, D* and *B* above are taken at market values).

So, why does the behaviour of financial markets matter to firms even if they are largely internally financed?

At least four points we can make:

1. Major corporate objective is maximisation of shareholder value (= max of share price).

$$P = \frac{D_1}{K_E - g}$$

where D_1 is the next dividend payment, K_E is the return required by shareholders and g is the rate of capital appreciation (= growth of earnings). Notice that minimising K_E maximises P.

K_E is determined by : $K_E = K_{rf} + \beta(K_m - K_{rf})$ where K_{rf} is the risk free rate of interest and K_m is the return on a fully diversified portfolio (the 'whole market'). ß is an index of risk attaching to the company's shares.

Numerous factors determine the riskiness of a share compared with a whole market portfolio. One is its liquidity. How easily it can be bought/sold without affecting the price.

The higher the turnover in the share, the larger the market. ('Deep' in the technical jargon).

So, *cet par,* the greater the turnover the more liquid and the lower the return required by shareholder.

(Ask yourself: if I know that there is very little market for a share, what compensation would I require to make me hold it?).

Furthermore, although banks and bondholders are not directly affected by riskiness of shares (they have a prior claim on the firm's earnings) they may take the behaviour of the share price as a proxy

for the underlying riskiness of the firm (in the absence of anything else). If they do this, then the rate of interest they charge will be affected by the observed behaviour of share prices.

2. A rise in the share price reduces the WACC (*cet. par.*)

The return to shareholders comes as a dividend yield and capital appreciation, i.e.

$$K_E = \frac{D_1}{P} + g$$

An increase in P reduces K_E and the WACC.

Consider the case of the 'dotcom' boom (2000) when internet coy shares bid up to astronomical heights and capital flowed in while utilities fell in value and found equity funds very expensive.

But we might say that: 'if firms raise little capital by way of the equity market, the WACC is not v relevant.' (If we are going to finance the next project from internal funds, why should we bother about the cost of external finance?) This brings us to (3).

3. In order to meet the existing WACC, firms must invest in projects which earn a return ≥ WACC.

Hence if

$$WACC\ (K_O) = 0.2\frac{50}{50+30+20} + 0.1(0.8)\frac{30}{50+30+20} + 0.08(0.8)\frac{20}{50+30+20} = 0.1368 \text{ or } 13.68\%$$

then 13.68% becomes the test discount rate for investment projects.

Another way to look at this is that any retained profits remain the property of shareholders, so if shareholders demand 20% p.a. for funds that they have invested by buying shares, they will expect 20% to be the return on the funds that they leave in the firm for future investment.

If funds were to be raised externally, there would be additional transaction costs. So to deliver 13.68% (on average) to current investors, the project would have to pass a higher test (say, 14%).

So there is a legitimate argument that internal funds are marginally cheaper than external funds, but the price is still being set by market considerations.

4. If markets are focused on maximising shareholder wealth in short-run, then this may force managers into short-run projects.

The argument that firms must meet the requirements of investors, is based upon the existence of markets which allow dissatisfied investors to walk away.

(If K_E fails to match shareholder requirements, shareholders will sell, pushing down the price of shares and increasing K_E.)

For many years there was a popular view that UK and US markets focused upon short-term maximisation while bank-based systems encouraged long-term investment – because banks developed long-term relationships with firms rather than a purely market-based one.

Certainly mergers and takeovers have been much more common in market-based systems suggesting that investors are happy to sell one firm to another as soon as performance falls below a target level.

But poor productivity growth in Germany and Japan in last 10 years and the reluctance to allow failed firms to collapse or be taken over now suggests that ‘short-termism’ may not produce sub-optimal long-term results.