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Tales from the FAR side

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Financial markets' evaluation of risk determines the way firms invest. What if the markets are wrong?

INVESTORS are rarely praised for their good sense. But for the past two decades a growing number of firms have based their decisions on a model which assumes that people are perfectly rational. If they are irrational, are businesses making the wrong choices?

The model, known as the 'capital-asset pricing model', or CAPM, has come to dominate modern finance. Almost any manager who wants to defend a project-be it a brand, a factory or a corporate merger-must justify his decision partly based on the CAPM. The reason is that the model tells a firm how to calculate the return that its investors demand. If shareholders are to benefit, the returns from any project must clear this 'hurdle rate'.

Although the CAPM is complicated, it can be reduced to five simple ideas:

- * Investors can eliminate some risks-such as the risk that workers will strike, or that a firm's boss will quit-by diversifying across many regions and sectors.
- * Some risks, such as that of a global recession, cannot be eliminated through diversification. So even a basket of all of the stocks in a stockmarket will still be risky.
- * People must be rewarded for investing in such a risky basket by earning returns above those that they can get on safer assets, such as treasury bills.
- * The rewards on a specific investment depend only on the extent to which it affects the market basket's risk.
- * Conveniently, that contribution to the market basket's risk can be captured by a single measure-dubbed 'beta'-which expresses the relationship between the investment's risk and the market's.

Beta is what makes the CAPM so powerful. Although an investment may face many risks, diversified investors should care only about those that are related to the market basket. Beta not only tells managers how to measure those risks, but it also allows them to translate them directly into a hurdle rate. If the future profits from a project will not exceed that rate, it is not worth shareholders' money.

The diagram shows how the CAPM works. Safe investments, such as treasury bills, have a beta of zero. Riskier investments should earn a premium over the risk-free rate which increases with beta. Those whose risks roughly match the market's have a beta of one, by definition, and should earn the market return.

So suppose that a firm is considering two projects, A and B. Project A has a beta of 1/2: when the market rises or falls by 10%, its returns tend to rise or fall by 5%. So its risk premium is only half that of the market. Project B's risk premium is twice that of the market, so it must earn a higher return to justify the expenditure. Every week, around the world, factories are closed, people sacked and new products launched using this kind of reasoning.

Never knowingly underpriced

But there is one small problem with the CAPM: it doesn't work. Financial economists have found that beta is not much use for explaining changes in firms' share prices. Worse, there appears to be another measure which explains these changes quite well.

That measure is the ratio of a firm's book value (the value of its assets at the time they entered the balance sheet) to its market value. Several studies have found that, on average, companies that have high book-to-market ratios tend to earn excess returns over long periods, even after adjusting for the risks that are associated with beta.

The discovery of this book-to-market effect has sparked a fierce debate among financial economists. All of them agree that some risks ought to carry greater rewards. But they are now deeply divided over how risk should be measured. Some argue that since investors are rational, the book-to-market effect must be capturing an extra risk factor. They conclude, therefore, that managers should incorporate the book-to-market effect into their hurdle rates. They have labelled this alternative hurdle rate the 'new estimator of expected return', or NEER.

Other financial economists, however, dispute this approach. Since there is no obvious extra risk associated with a high book-to-market ratio, they say, investors must be mistaken. Put simply, they are underpricing high book-to-market stocks, causing them to earn abnormally high returns. If managers of such firms try to exceed those inflated hurdle rates, they will forgo many profitable investments. With economists now at odds, what is a conscientious manager to do?

In a new paper*, Jeremy Stein, an economist at the Massachusetts Institute of Technology's business school, offers a paradoxical answer. If investors are rational, then beta cannot be the only measure of risk, so managers should stop using it. Conversely, if investors are irrational, then beta is still the right measure in many cases. Mr Stein argues that if beta captures an asset's fundamental risk-that is, its contribution to the market basket's risk-then it will often make sense for managers to pay attention to it, even if investors are somehow failing to.

Often, but not always. At the heart of Mr Stein's argument lies a crucial distinction-that between (a) boosting a firm's long-term value and (b) trying to raise its share price. If investors are rational, these are the same thing: any decision that raises long-term value will instantly increase the share price as well. But if investors are making predictable mistakes, a manager must choose.

For instance, if he wants to increase today's share price-perhaps because he wants to sell his shares, or to fend off a takeover attempt-he must usually stick with the NEER approach,

accommodating investors' misperceptions. But if he is interested in long-term value, he should usually continue to use beta. Showing a flair for marketing, Mr Stein labels this far-sighted alternative to NEER the 'fundamental asset risk'-or FAR-approach.

Mr Stein's conclusions will no doubt irritate many company bosses, who are fond of denouncing their investors' myopia. They have resented the way in which CAPM-with its assumption of investor infallibility-has come to play an important role in boardroom decision-making. But it now appears that if they are right, and their investors are wrong, then those same far-sighted managers ought to be the CAPM's biggest fans.

* 'Rational Capital Budgeting in an Irrational World'. By Jeremy Stein. The Journal of Business, October 1996.

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