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## Time for the chop: economics focus

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TERMS

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"The capital-asset pricing model is one of the most influential economic theories. As capital markets become more global, it will face its toughest test"

MODERN finance owes much of its success to the capital-asset pricing model (CAPM, pronounced 'cap-em'), a theory that defines the relationship between the risks and returns on financial assets. During the past three decades few economic models have done better than the CAPM in bridging the gap between theory and practice. But the increasing integration of world financial markets is forcing economists to scrutinise more closely the theory itself. They may soon have a lot of explaining to do.

The value of a financial asset depends on two things: its expected return and its risk. If two equities, for example, are both expected to earn 10% during the next year, people will prefer to buy the less risky of the two. But how should an investor measure this risk, and how much of it should he accept in exchange for a little more return? It is here that the CAPM comes to the rescue. It says that an asset's risk is simply its sensitivity to movements in the 'market portfolio', which is the total set of assets available to investors. This sensitivity is called beta: when the market portfolio rises 10%, an asset with a beta of one also rises 10%, an asset with a beta of two rises 20%, and so on. The CAPM also says that an asset's expected return should increase proportionally with its beta.

The CAPM's power comes from the ease with which it can be applied. A company considering a new capital investment, for example, needs a benchmark to judge it against. By looking at the stock returns of similar companies with similar investments, the firm can estimate how sensitive the project's pay-off will be to market movements. This, in turn, allows it to estimate the market's expected return. If managers think the investment project can beat this return, they should go ahead. But corporate decision-makers are not the only ones to reap huge benefits from the CAPM. It has enabled investment-fund managers to construct well-diversified portfolios for their clients, and it has provided a springboard to help researchers and economists solve many of finance's mysteries.

Despite its many practical uses, however, the theory itself is far from solid. Its biggest drawback is its dependence on the notion of a 'market portfolio'. Technically, this should be the entire set of assets available in the world. Yet although it is a global model, economists have until recently almost ignored its global implications. In testing the theory's validity, many researchers have looked only at America; others have examined several countries but have focused just on bonds and avoided equities. As global markets become more integrated, research that ignores the

CAPM's international underpinnings looks increasingly lame.

## Going far, far away

A new book\* from America's National Bureau of Economic Research (NBER) puts the CAPM through some truly worldwide tests. The book's editor, Jeffrey Frankel, an American economist, has gathered together various studies that focus on international capital markets. And although much more international research will be needed before economists pass a verdict on the CAPM, this early evidence uncovers some strange puzzles.

One of these is whether people pass up valuable chances to diversify by investing too much in their home country. At first glance it may seem obvious that they do: most countries' investors put only a small fraction of their equity investments into foreign stocks. But financial economists have always explained this away by pointing out that transaction costs are often higher when dealing abroad. Since the costs of diversifying are so high, they argue, it is not surprising that people pass up many of the benefits.

One study in the book, by Linda Tesar and Ingrid Werner, blasts a hole in this argument. They find that most investors actually trade their foreign shares far more frequently than their domestic ones (see table). If foreign transaction costs are so high, then investors should use these transactions to add to their existing foreign portfolios, not to turn them over. Defenders of the CAPM must explain why investors bear the costs of investing abroad, yet miss out on the full benefits.

This is not the only mystery raised by the NBER book. Another, highlighted by Gikas Hardouvelis, Rafael La Porta and Thierry Wizman, involves the behaviour of so-called 'country funds'. These investment funds are backed by assets in foreign countries, but are traded on domestic stock exchanges, thus providing local investors with easy access to overseas markets. By comparing the prices of these funds with the prices of the underlying assets, one can gauge whether foreign investors are getting their prices right.

The study suggests that they are not. The authors examine 35 country funds, all traded on American exchanges, during the period 1985-93. They compare these prices to the (currency-adjusted) prices of the underlying assets. That these prices differ is, in itself, not too surprising: transaction costs and restricted access to foreign markets often drive a wedge between the two. What is surprising, however, is the behaviour of these price gaps, or discounts, across countries and over time.

For a start, the authors find that these discounts can be used to predict the future prices of the funds, but not of the underlying assets. This suggests that fund prices are driven by factors other than the assets' values. Moreover, this predictability seems linked to changes in worldwide and American stock returns, and not to changes in the individual countries. All of this implies that the sentiments of investors, fuelled by global trends, are driving the prices of country funds away from the value of the assets that back them.

One such country fund provides an example of this tendency. The authors find that, in 1990-93, investors in the Mexico Fund became increasingly more cheerful about its underlying value than investors in Mexico. This makes the recent Mexican crisis seem less surprising: once these over-optimists caught on to the truth, they drove prices down sharply, in Mexico and elsewhere.

If it can be made relevant to global problems, such as those in the NBER's collection of studies, there may yet be life in the CAPM - and the dismal science will have proved its worth as an investment tool.

\* 'The Internationalisation of Equity Markets'. Editor: Jeffrey Frankel, University of Chicago Press, 1994

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CHURNING ALONG

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Average turnover rate\*, 1982-90

	Foreign	American	All
	investors in	investors	investors
	American	in foreign	in domestic
	equities	equities	equities

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United States	-	-	57
Canada	92	36	20
Britain	61	152	51
Germany	21	65	97
Japan	334	377	56

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\*Transaction volume as % of total equity holdings

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