

New solutions, new questions

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Consideration of trading costs sheds light on the capricious movements of exchange rates, but it creates analytical problems of its own

FOUR down, two to go. Last week's Economics focus began examining a pathbreaking article* that claims to explain six enduring puzzles in macroeconomics by incorporating an overlooked factor—trading costs—into the theoretical model. This week we consider the last two puzzles, and also some early reactions to the paper.

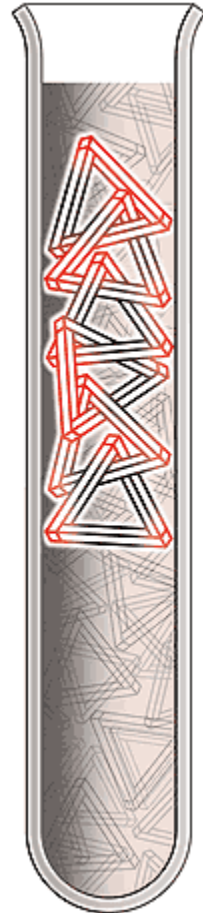
In the first four problems, the authors, Maurice Obstfeld of the University of California at Berkeley and Kenneth Rogoff of Harvard University, used trading costs to explain why, in consumption, investment and saving, there seems to be so little cross-border risk-spreading. The other two puzzles are to do with prices and currencies: that similar goods often do not cost the same in different countries; and that there are no short-term links between fluctuations in exchange rates and measures of economic activity.

Practically identical products often sell at different prices, adjusted for exchange rates, in different countries. *The Economist's* "Big Mac Index" is based on this point. It is a calculation of "real" exchange rates, which measure the relative costs of goods—not currencies. A Big Mac in, say, New York costs a certain number of dollars, and a Big Mac in, say, Paris costs a certain number of dollars when converted from euros. Under "purchasing-power parity" theory, the dollar cost of both ought to be the same: the real exchange rate should be one Big Mac in New York for one Big Mac in Paris. In practice the two prices are almost always different.

The reasoning behind purchasing-power parity is that there is the possibility of arbitrage: if the real exchange rate were much greater than one, enterprising individuals would buy huge quantities of Big Macs in New York and sell them in Paris. American prices, French prices and/or the dollar-franc exchange rate would then adjust until the real exchange rate approached one. But domestic prices and exchange rates are in fact slow to adjust to changes in each other.

Previous work in the field has found that price adjustments come roughly three times faster at the wholesale level than at the retail level. Since wholesale importers enjoy big economies of scale over retail consumers, this already suggests that trading costs may have an important role in the matter. But that wholesalers' prices are quicker to adjust to exchange-rate imbalances does not explain why they exist at all: why does arbitrage not lead importers to eradicate the disparities altogether?

As the authors admit, other factors must come into play, such as the ability of monopolistic suppliers to discriminate between markets in their pricing policy. A



monopolistic exporter, such as De Beers in the diamond industry, may be able to vary prices in different countries without risking arbitrage. It could, for example, accomplish this directly by licensing importers. Or it might be impossible for would-be arbitrageurs to achieve economies of scale big enough to make the game worthwhile. High trading costs make it more expensive for consumers to arbitrage; despite their (proportionately) smaller trading costs, it may also be hard for wholesaler importers, because of exporters' market power and their price-discrimination abilities.

Only disconnect

The sixth puzzle is known as "the exchange-rate disconnect". This means economic theory's failure to explain why, in broad empirical studies, extreme volatility in exchange rates is only weakly linked to consumption, investment and growth in the short term. Here the authors make an intuitive connection to purchasing-power parity. In a world with fairly immobile domestic prices, the exchange rate provides the only source of adjustment to shocks in financial markets. If consumers' purchases are cushioned by layers of middlemen, even large exchange-rate swings will have smaller-than-expected effects on prices and consumption.

In these puzzles, then, trading costs do not provide a complete solution—but they do form an essential ingredient of one. As in its models of "real quantities", such as goods and securities, discussed last week, this research sets itself apart from its predecessors in not relying on the narrowness of financial markets, and on distinctions between traded and non-traded goods.

Charles Engel of the University of Wisconsin, whose data Messrs Obstfeld and Rogoff use in their study, and Olivier Jeanne of the IMF were invited to be the authors' first official critics. Mr Engel's comments focus on a difficulty in an assumption the authors make in one of their models: that there is a strong link between consumption levels and real exchange rates. In reality, no such link can be observed. For his part, Mr Jeanne points out that the solution to the puzzle of low net foreign investment flows relies on the assumption that countries can easily switch between importing and exporting the same goods. In practice, although this may occur for broad categories (cars, say), it is rare for specifically defined goods (Rolls-Royces, say).

The wide scope of this paper suggests that it will attract more criticism, partly because it has the potential to affect so many policy debates around the world. Take, for example, the debate in Europe over the euro, especially the claim that a single currency will greatly enhance cross-border trading. The Obstfeld-Rogoff paper explains the dominance of intra-national over trans-national commerce largely by trading costs. If the authors are right, this pro-euro argument loses much of its force.

An experienced economic forecaster, Rudi Dornbusch of MIT, predicts that the Obstfeld-Rogoff research will garner thousands of citations and an equal number of challenges before the end of the year. Although he declines to call the paper revolutionary, he does applaud it for launching the field in a new direction. As to

whether its results will remain intact after the dust settles, Mr Dornbusch takes the economist's traditionally cautious stance: wait a year, and collect more data.