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The Numeraire Problem and Foreign Exchange Risk: Discussion

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First, the dependent variable is market value of equity less book value divided by sales, or, as the authors term it “excess market valuation.” They find that this is highly correlated with foreign activity, implying that the more foreign activity the higher will be excess valuation. However, there are incredible comparability problems which arise as the accountants aggregate foreign and domestic book values. What tax rules allow to be capitalized rather than expensed, differences in depreciation allowances, etc. all must be accounted for. Indeed, if foreign depreciation rules are more liberal than domestic rules, then foreign book values will be low relative to domestic book value, other things the same. Accordingly, for any sales to assets ratio, more foreign sales, implying more foreign assets, will simply yield greater “understatements” of foreign net worth. So the correlation between excess market valuation and foreign sales could be a result of the way the books are kept, nothing more.

Second, the results do not allow easy distinction of the competing hypotheses. To the authors’ credit, a “controls” period and a “non-controls” period are used; this separation is intended to suggest whether it is product/factor market imperfection or financial market impediments which yield excess valuations. It does not do the job, however. Other things that are not held constant changed sufficiently between the two periods to undermine the revelation. Moreover, the “controls” period was one in which controls on both portfolio capital and direct investment capital applied. The noncontrol period had neither, so we do not know whether excess valuation declined in the latter period because investors could buy more foreign shares or because more U.S. firms could invest abroad—supply adjustment in the authors’ analysis—thus reducing product/factor market imperfections.

Third, all foreign investment is treated the same. However, the motivations and consequent excess valuation for U.S. based MNC’s investing in the Common Market countries may not be the same for investment in developing countries.

There are other problems with the empirical work, but there is no need to move to smaller issues. The aforementioned problems are sufficient to cause one to consider the findings as quite preliminary. These deficiencies do not really so much reflect the authors’ shortcomings as they do the deficiencies in the data that have been organized on MNCs. Nonetheless they exist.

In closing, I emphasize again that despite some questionable analysis, the authors have opened quite interesting and potentially very productive research paths. This is far more than we get from most papers, so they deserve at least our muffled applause.

DISCUSSION

J. H. MAKIN*: The Eaker paper is aptly titled the numeraire *problem* and exchange risk. The problem of preserving purchasing power over commodities with nominal assets measured in terms of some money has not generally been addressed by portfolio theorists and my analysis in Makin (1978), as Eaker observes, is no exception.

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Eaker's basic argument is that not seeking to manage a portfolio with regard to preservation of purchasing power over some basket of commodities, that is not aiming for a real riskless asset, leads one to ignore inflation risk and include too much home currency in the portfolio. While this outcome is possible it is not a necessary result. It depends on the particular collection of commodities over which a portfolio manager is attempting to maintain purchasing power. As Eaker points out in his discussion of the optimal real bond, every individual with a different expenditure pattern would require a different asset to serve as an optimal real bond. It is this fact which points the way out of the "real-nominal" difficulties seen by Eaker.

In theory, diversification to deal with both nominal and real risk can occur at the stockholder level rather than at the firm level. However, information costs suggest that investors may find it easier to diversify real risks on their own while leaving management of foreign exchange risk to company managers. To see this, consider an example. Suppose an individual investor believes that he has uniquely good information, not available to other investors, that the price of oil relative to other commodities is going to rise. He is also interested in buying assets with stable earnings measured in local currency. If he had full information on the net foreign exchange position of all oil companies it would be a simple matter to obtain his own optimal portfolio of open foreign exchange positions by purchasing a collection of claims on such companies. At the same time the desired "long" position in oil would be obtained.

It is, however, not feasible to expect that the cost of ascertaining timely information on net currency positions on each of a large collection of oil firms is as low as the cost of ascertaining that oil companies are long on oil. (Although a search to ascertain which company owned the largest stocks of oil, purchased at what will soon be seen as "bargain" prices would be useful.) Rather the investor can look *ex post* at past volatility of net earnings of oil companies due to foreign exchange rate fluctuation and *ceteris paribus* buy the firm with the lowest volatility. In short, management of nominal risk may lower a firm's cost of capital.

The basic point of the oil example is straightforward. Since the optimal real bond differs for each investor with different expenditure patterns, which themselves change over time, management of real risk must be done at the investor level. Firms may find it advantageous to indicate clearly their net positions in commodities to investors who are attempting to diversify real risk. Further firms will manage nominal risk, like that associated with volatile relative money prices, until the marginal cost of that activity equals the marginal benefit measured by a lower cost of capital from risk-averse investors willing to pay a premium for assets yielding a stable earnings stream.

Eaker's argument that real risk ought to be managed at the firm level misses an essential point. Real risk is investor-specific depending, as he recognizes, on the particular, changing expenditure pattern of each investor at different points in time. No single firm could know what configuration of real bonds would appeal to investors over time.

There may, however, be one way in which firms could benefit from a form of real risk management. Each firm has its terms of trade dependent on the price of what it sells relative to the price of inputs or what it buys. Volatility of terms of

trade will be translated into volatility of net earnings (just as are volatile relative prices of money.) It may be possible to identify a combined optimal portfolio of currencies and commodities for a firm if stable covariances exist between exchange rates and some commodity prices (each expressed in some numeraire currency.) Such an approach would see firms more insulated from effects of volatility of their own terms of trade. The individual investor buying claims on the firm would not however gain any protection from real risk in Eaker's sense unless his own terms of trade correlated perfectly with the firm's. This is unlikely for many reasons, not the least of which is the fact that most firms are buyers of labor services while most investors either are directly, or are representatives of, sellers of labor services.

REFERENCES

John H. Makin, "Portfolio Theory and the Problem of Foreign Exchange Risk," *The Journal of Finance* (May, 1978) 517-34.

DISCUSSION

R. G. HAWKINS*: Professor Rodriguez's paper has two major merits. First, it shows, using a massive amount of data, that companies—on average—behave the way the theory of risky asset management predicts they should behave (at least half the time). Second, it indicates in which types of foreign currency assets and liabilities the changes actually occur, which provides several suggestions for additional research. Certainly the second is a unique contribution.

It could be said that the issue of foreign exchange was topical in the late 1960's and early 1970's but, by 1980, who cares? The foreign exchange markets are working fairly smoothly; there are not massive flows of speculative funds, and this data of a bygone era is interesting but irrelevant. I do not hold this view. The data and the summary measures developed in the paper involve useful tests—albeit tentative—of several hypotheses of corporate behavior in periods of stress in foreign exchange markets. This has lasting value. Furthermore, the findings of the paper are consistent with, and provide a partial explanation of, the "over-shooting" observed in exchange rate movements—a matter which has recently received attention in academic research.

I will identify the strengths of the paper before turning to its weaknesses.

The paper provides a terse report, on a massive data collection project, which was supplemented by interviews of corporate treasurers. It is an efficient paper.

The paper utilizes perhaps the only systematic data available at the company level, account specific, by currency, for several dates. It was an ambitious project at the outset, and the fact that it was completed denotes unusual perseverance. It overshadows in extent and thoroughness other studies on currency speculation based on micro-data.

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