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Time for a Tobin Tax?

On a typical day in the foreign exchange market roughly $1.5 trillion changes hands. This means that in less than a week foreign exchange transactions have exceeded the *annual* value of *world* trade. Not surprisingly then, surveys find that actual "users" of foreign exchange are involved in only one out of every five trades. The rest are trades among the dealers themselves. Furthermore, surveys suggest that more than 40% of all transactions involve round trips of fewer than three days!

The explosion of foreign exchange trading has coincided with a string of spectacular currency crises: first in Europe, during the summers of 1992 and 1993, next in Mexico at the end of 1994, then in Southeast Asia during the summer of 1997, then in Russia during the summer of 1998, and most recently in Brazil, in January 1999. A growing chorus of critics have drawn a connection between these currency crises and the frenetic activity taking place in the foreign exchange market and have called for measures to "throw sand in the wheels of the foreign exchange market," in order to reduce destabilizing speculation and improve macroeconomic performance.

Some have gone beyond talking. On September 1, 1998, Malaysia announced that it was imposing a range of capital controls designed to prevent foreign investors from taking their money out of the country (at least without paying a stiff penalty). These restrictions enabled the Malaysian central bank to cut interest rates without having to fear a run on its currency. It's too soon to say what the long-term consequences of these controls will be, but the relatively favorable performance of the Malaysian economy since they were imposed has certainly caught the eye of its distressed neighbors.

This *Letter* will provide a broad overview of the pros and cons of capital controls. Because capital controls come in so many different flavors, it is impossible to discuss them all in any detail. Generally speaking, capital controls are distinguished by intent (keeping money out vs. keeping money in), by type of transaction (gross purchases and sales vs. net position-taking), and by type of asset (stocks, bonds, bank deposits, derivatives, etc.). To maintain a narrow and manageable focus, this *Letter*
attracted the attention of the economics profession, largely because its original proponent is a widely respected Nobel prize-winning economist.

What is a Tobin tax?

In 1978, James Tobin proposed a worldwide tax on all foreign exchange transactions. Tobin justified the tax on two grounds. First, he argued that it would reduce exchange rate volatility and improve macroeconomic performance. Second, he argued that the tax could bring in a lot of revenue to support international development efforts.

The defining characteristic of a Tobin tax is that it would be a tax on gross *transactions*; that is, the tax is paid twice, once when you acquire foreign exchange, and again when you sell the foreign exchange. Double taxation at a fixed rate has the crucial consequence of discriminating automatically against short-term capital flows. For example, suppose a 0.1% tax is levied on all foreign exchange transactions, and that the (annualized) domestic interest rate is 5.0%. Then, with a one-year holding period, the interest rate on a comparable foreign currency denominated asset would have to be at least 5.2% to make foreign investment attractive. If instead the foreign asset is held for only a month then the foreign interest rate must be at least 7.4% to offset the tax. For one-day round trips foreign rates would have to be at least 77%! Thus, a small and enforceable Tobin tax could virtually shut off short-term capital flows.

Discrimination against short-term capital flows is not a feature shared by many popular forms of capital controls. For example, reserve requirements, often used to inhibit capital inflows, do not in general discriminate in favor of long-term investments. Often these are just taxes on net position-taking, in which banks must deposit some portion of their net external liabilities with the central bank at zero interest. However, it is possible to make the deposits temporary, which *would* discriminate against short-term flows. For example, beginning in 1991, Chile has required banks to maintain a reserve requirement against external liabilities, but these reserves only had to be maintained for periods ranging from 90 days to a year. Initially, the requirement was set at 20%. It was then increased to 30% in 1992, where it remained until 1998, when it was removed in response to the international financial crisis. Many have argued that temporary reserve requirements were effective at keeping "hot money" out of Chile, without unduly hindering long-term investment.

Still, the speculative disincentives of a temporary reserve requirement are modest relative to the Tobin tax. Indeed, if your goal is to limit short-term capital flows, it is hard to beat a Tobin tax. The real questions are whether in fact it is desirable to limit short-term capital flows and whether in practice a Tobin tax would be enforceable.

Is a Tobin tax desirable?

No one doubts the potential benefits of international capital mobility. Open capital markets give savers a higher rate of return while simultaneously lowering the cost of capital for borrowers. Open capital markets also deliver diversification benefits, allowing investors to obtain the same returns on their risky portfolios with less risk. However, these benefits are predicated on the efficient functioning of markets, and many have argued that the foreign exchange market in particular is subject to distortions that may justify government intervention.

The most commonly cited inefficiency in the foreign exchange market is the reputed tendency of currency traders to engage in destabilizing speculation. Unfortunately, establishing that speculation is destabilizing is not so easy. It certainly doesn't follow simply from the observed volatility of exchange rates, since the determinants of exchange rates (like monetary and fiscal policies) could themselves be volatile. In fact, Friedman (1953) famously argued that speculation couldn't possibly be destabilizing, since that would imply speculators were buying high and selling low. Speculators who do that go out of business.

The fact is, it is impossible to tell whether speculation is destabilizing without first distinguishing "speculative" trades from other trades, and second, without having a reliable model of exchange rate determination that tells you how exchange rates would behave in the absence of speculation. That is, one needs a counterfactual against which observed volatility can be compared. Sadly, economists do not currently possess such a model. Without it, debates about excess volatility are like debates about the existence of life on other planets.

A second argument for throwing sand in the wheels of the foreign exchange market is related to government policy. All governments, either implicitly or explicitly, stand behind their banking systems. If a sufficiently large bank or a sufficiently large number of banks gets into trouble, governments find it politically impossible to stand on the sidelines and watch banks go under. Since bankers know this, there is some tendency for banks to take on too much risk. Although this is a problem that would exist even in a closed economy, it becomes especially severe in open economies, since currency speculation (e.g., unhedged foreign currency liabilities) is an easy way to exploit government guarantees. A Tobin tax could mitigate this problem by raising the cost of foreign currency speculation.

Finally, a third market imperfection used to justify government intervention is the notion that foreign exchange markets suffer from "multiple equilibria," i.e., a given configuration of monetary and fiscal policies may be consistent with more than one value of the exchange rate. If this is the case, seemingly insignificant events can trigger dramatic swings in the exchange rate, as the market switches from one equilibrium to another. Proponents of this argument claim that policies like a Tobin tax, which slow down the foreign exchange market, can

Theories of multiple equilibria are based on the concept of self-fulfilling beliefs, i.e., that speculators base their investment decisions on beliefs about the future which their own (collective) decisions bring about. (This idea provides a counter-argument to Friedman's contention that destabilizing speculators must lose money.) Perhaps the most persuasive example was put forth by Obstfeld (1986). He showed that when government policies themselves react to the exchange rate, then speculators' beliefs can elicit government responses that justify those beliefs. This view of exchange rate determination is in marked contrast to traditional views, which typically assume government policies are formulated independently of the exchange rate.

While each of these arguments can justify a Tobin tax, each has its limitations. Dellas and Stockman (1993), for example, point out that the multiple equilibria story cuts both ways. They show that beliefs about the imposition of capital controls can be self-fulfilling. That is, if speculators believe the government will try to lock the doors during a crisis, this will simply precipitate a dash for the exits, as each investor tries to get out while the doors are still open. If the government could commit *not* to resort to capital controls, investors might have the confidence to stay in when the going gets tough. Similarly, while a Tobin tax might help offset moral hazard problems in the banking sector, it is probably a poor substitute for direct policies of prudential regulation and supervision.

Would a Tobin tax be effective and enforceable?

Despite the theoretical ambiguities, many have argued that a Tobin tax suffers from two fatal *pragmatic* flaws. First, the tax must be unreasonably high to achieve what many regard as its primary goal, namely, preventing speculative attacks against fixed exchange rates. Second, a Tobin tax is not likely to be enforceable.

Earlier it was argued that a modest 0.1% tax would require huge interest differentials to justify one-day bets on exchange rates. However, this kind of calculation is misleading in the context of speculative attacks against pegged exchange rates, since it ignores the fact that anticipated annualized gains can themselves be quite large. For example, a 10% devaluation on a single day translates into an *annualized*
assign relatively low probabilities to such events on any given day, it may still be worthwhile to make the bet. In other words, Tobin taxes would do little to extend the lives of unsustainable currency regimes.

Enforceability is the real Achilles' heel of the Tobin tax. There are two distinct issues. First, since transactions in the foreign exchange market take place around the world, a Tobin tax would require *global*
quickly to any country that did not enforce the tax. Moreover, attracting this business is desirable. Currency trading is a highly paid job and would yield spillover benefits to other businesses. Tobin argued that cooperation might be enforced by allowing local governments to keep the tax revenue, but this would simply shift the problem to the size of the tax rather than enforcement per se.

The second enforceability problem relates to the definition of the tax base. That is, how exactly is a foreign exchange transaction to be defined? Modern financial engineering is based on replicating one asset with combinations of other assets. At a minimum, the tax would have to be applied to forward, futures, and swap transactions in addition to spot transactions, since a spot transaction can be replicated easily by a combination of debt and forwards, futures, or swaps. In fact, the problem is even worse than this. Spot transactions could also be approximated by exchanging liquid securities (like T-Bills) denominated in different currencies. Consequently, the tax would likely spread and eventually come to envelop large segments of what is traditionally regarded as the domestic capital market. This problem, more than any other, would likely kill the Tobin tax.

Conclusion

Whether a Tobin tax is desirable depends on your beliefs about the efficiency of the foreign exchange market. Economic research has not yet resolved this question. While this leaves the door open to advocates of a Tobin tax, most experts believe that it suffers from severe pragmatic flaws, primarily due to enforcement problems. Consequently, recent discussions of capital controls have shifted to unilaterally enforceable policies, like Chilean-style reserve requirements. Assessing the costs and benefits of these policies is an active topic of current research.

Kenneth Kasa
Senior Economist

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Research Department
Federal Reserve Bank of San Francisco
P.O. Box 7702
San Francisco, CA 94120