Debating
The Tobin Tax

New Rules for Global Finance

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INTRODUCTION

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The late James Tobin, Sterling Professor of Economics at Yale, a Nobel Laureate, a great economist and great human being, proposed in the 1970s, after the breakdown of the fixed exchange rate system that a currency transactions tax be imposed in order to slow down speculative movements of currency and give governments greater ability to manage their own domestic monetary and fiscal policy. Since the 70s this proposal has been changed in several ways –to have a two tier tax, to become part of financing for development, to include taxes on sales of international securities, and several other variations.

New Rules sponsored a conference on Alternatives to Neoliberalism in May 2002. At that conference, we reached a high degree of consensus among the participants on several topics: including agreement with Dani Rodrik's proposals for alternatives to neoliberal macroeconomic policies for developing countries; with Tom Palley's proposal for domestic demand led development; with Didier Jacob's proposals for reform of global governance; with Fran Horner's proposals for reform of the international system for taxing multinational corporations; with Randall Dodd's proposals to reform financial market regulation; with Kunibert Raffert's proposal for an international bankruptcy system; with Aaron Goldzimmer's proposals for reform of export credit agencies; with Ilene Grabel's proposals for capital controls; with John Grieve Smith's proposals on exchange rates; and with David Reed's proposals for alternatives to neoliberalism in order to achieve sustainable development. When we published the

papers and proceedings of the conference, we had a document which reflected a high degree of consensus among the participating NGOs on these important topics.

However, we did not achieve a consensus on the desirability or practicality of Tobin taxes. And it is obvious that this is an important issue. So, we planned a conference to see if we could reach a consensus, or if not a consensus to obtain clarity on where we agree and where we disagree.

This is a stimulating collection of papers. The first two papers, delivered as a debate at the conference, are a lively presentation of the case for and against the Tobin tax. Tom Palley of the Open Society Institute provides a strong case for the desirability and feasibility of the tax. Randall Dodd of the Financial Policy Forum finds significant problems with the proposal.

We then move to the question of whether Tobin taxes can stabilize financial markets. Bruno Jetin of ATTAC-France is part of an alliance which is hoping to use NGOs to build support for the Tobin tax and argues that it can stabilize financial markets, particularly in its two tier version. Karl Habermeier and Andrei Kirilenko of the International Monetary Fund (IMF) marshal evidence that such a tax will not reduce instability, that it will, in fact increase instability. Ilene Grabel, of the University of Denver, argues that the Tobin tax may be a useful reform, along with others, to reduce destructive capital flight.

The next papers deal with the issue of implementing currency transaction taxes. Dean Baker, of the Center for Economic and Policy Research, makes the case that such a tax can be implemented. Howell Zee, of the IMF, takes the position that implementation issues can be overcome by taxing capital, not currencies. Robert Pollin of the University of Massachusetts, Amherst analyzes the implementation and revenue impacts of a securities transactions tax on the US.

Professor Young-Chul Kim, of Keimyung University in Korea organized one of the first conferences on the Tobin tax to be held outside Europe and North America and gives a view of the tax from the East Asian perspective.

Jo Marie Griesgraber, who is the founder and chair of the New Rules for Global Finance Coalition presents a summary of our agreements and disagreements and suggestions of where we go from here. She found a high degree of consensus on many points.

The final two papers are primers on the Tobin tax. Maureen Hinman, of the University of Denver, completed the first one while an intern at Oxfam America. Randall Dodd prepared the second one to highlight some of the unresolved issues with the tax.

We had a stellar list of speakers and authors at our conference. And we had a stellar audience, mostly representatives of non-governmental organizations (NGOs); people who operate on tiny budgets and have as their objective to bring about enormous changes in the world: to adopt new rules for global finance, or end poverty, or end the use of land mines, or cancel global debt. They have chutzpah, they have hope, and they are doing God's work in the world. Theirs is truly a holy vocation.

In conclusion, I would like to thank the C.S. Mott Foundation for financing the conference, the Open Society Institute for financing the publication, and the Heinrich Böll Foundation and Oxfam America for contributing funds to bring participants from the South. I would also like to thank George Mocharko for the design of the cover. And while I am expressing thanks, I want to thank Jamie Baker, of Oxfam America, who did great work in pulling this conference and this volume together.

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THE ECONOMIC CASE FOR THE TOBIN TAX[1]

Thomas I. Palley
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The international financial instability of recent years has prompted calls for a new international financial architecture. Often included in proposals for this new architecture is a tax on international currency transactions, commonly known as the Tobin tax. Proponents argue that a Tobin tax is feasible, and would help reduce financial instability. Opponents counter that it is infeasible, and could even worsen instability. This article examines the economic case for a Tobin tax, and argues that it is both desirable and feasible.

Three important points deserve emphasis. First, with regard to financial crisis prevention, the Tobin tax should be viewed as part of a package of reforms to the international financial architecture. No measure alone can prevent financial crises, and many measures generate synergies so that they work better as a package. A house has doors, windows, floors, and ceilings: a well-designed financial architecture will also have many elements, of which the Tobin tax should be one.

Second, James Tobin (1978) initially proposed the Tobin tax in connection with spot market currency transactions. Since then, there has been significant financial innovation in currency markets, including development of more extensive futures markets and derivative

[1] The author thanks M.E. Sharpe for permission to use material previously published in "Destabilizing Speculation and the Case for an International Currency Transactions Tax," Challenge, (May/June, 2001), 70 - 89. The views expressed in this chapter are those of the author and not those of the Open Society Institute.

instruments. This means the Tobin tax must now be applied to all forms of foreign currency related transactions to avoid evasion. More generally, the Tobin tax should be seen as part of a family of financial market transaction taxes, and many of the arguments for a Tobin tax carry over and support other forms of financial market transaction taxes. Indeed, from a purely technical standpoint, taxing domestic financial market transactions may be the easier place to start since these involve a single jurisdiction, and are therefore harder to evade.

Third, not only does the Tobin tax promise to improve international financial stability, it also has significant tax revenue raising capacity. This is an important feature at a time when public finances in many countries are under pressure owing to mobility of capital income. Moreover, this tax raising capacity can be justified in terms of conventional optimal taxation theory (Palley, 1999a).

In sum, not only is the Tobin tax good for financial stability, it also can raise large amounts of revenue in an economically efficient way. The same holds for modest financial market transaction taxes in general.

The Intellectual History of the Tobin Tax

The idea of an international currency transactions tax was first advanced by the late Nobel laureate economist James Tobin (1978) who proposed a small tax - these days the suggestion is 1/10 percent - on all foreign exchange (FX) dealings. The intention was to reduce disruptive speculation in FX markets by raising the cost of engaging in such activities.

The Tobin tax builds on an earlier proposal made by Keynes (1936) in his magisterial book, *The General Theory of Employment, Interest, and Money*. In *The General Theory* Keynes proposed the imposition of a small transactions tax on all stock exchange dealings to diminish instability in domestic stock markets. His proposal was motivated by the disastrous consequences of the stock market crash of 1929, combined with the observation that speculation tended to be more prevalent on Wall Street than on Throgmorton Street (home of the London stock exchange) in part due to the absence of a tax in the New York market.

> *"It is usually agreed that casinos should, in the public interest, be inaccessible and expensive. And perhaps the same is true of stock exchanges. That the sins of the London Stock Exchange are less than those of Wall Street may be due, not so much to*

differences in national character, as to the fact that to the average Englishman Throgmorton Street is compared with Wall Street to the average American, inaccessible and very expensive. The jobber's "turn", the high brokerage charges and the heavy transfer tax payable to the exchequer, which attend dealings on the London Stock Exchange, sufficiently diminish the liquidity of the market to rule out a large proportion of the transaction characteristic of Wall Street. The introduction of a substantial Government transfer tax on all transactions might prove the most serviceable reform available, with a view to mitigating the predominance of speculation over enterprise in the United States (Keynes, 1936, p.159-60)."

More recently, following the U.S. stock market crash of 1987, the idea of using transactions taxes to curb speculation received support from Joseph Stiglitz (1989), the former Chairman of the U.S. Council of Economic Advisers and former Chief Economist of the World Bank. It has also received support from Lawrence Summers (1989), the former U.S. Treasury Secretary. The bottom line is that the Tobin tax has a highly respectable intellectual heritage. Though this does not make the Tobin tax necessarily right, it does dispel the notion that it is an outlandish idea.

Overview of the Paper

The economic case for the Tobin tax is multi-faceted. Arguments for are that (1) it can reduce currency volatility and damaging speculation, (2) it can enhance the power of domestic monetary policy, (3) it can efficiently raise significant tax revenue, (4) it can reduce the dominance of financial interests over economic policy, and (5) it can reduce waste of scarce resources that goes with excessive financial transacting.

Regarding the question of feasibility of the Tobin tax, there are two distinct sets of issues. One set concerns administrative and technical feasibility – that is whether the tax can be put into effect if policymakers wish to. The second set concerns political feasibility. Here, the issue is obtaining appropriate political buy-in.

Currency Volatility and Speculation: The Evidence

A key claim of Tobin tax proponents is that the Tobin tax can reduce currency volatility and damaging speculation. A natural starting point for discussion of this claim is the question of whether there is excess volatility in FX markets, and whether these markets are working well.

Currency Volatility: The Microeconomic Evidence

Foreign exchange rates are a key macroeconomic price, powerfully influencing the relative price at which goods and services in one economy trade for goods and services in another. According to economic theory, exchange rates should be determined by "economic fundamentals" such as a nation's resource endowment, relative level of productivity, and prospects for productivity growth. These economic fundamentals are relatively stable, changing little from day-to-day, month-to-month, and even year-to-year. This in turn suggests that exchange rates ought to be relatively stable. Yet, the empirical data clearly shows that flexible exchange rates have been much more volatile than warranted by macro-fundamentals, a fact that is especially clear in the daily and monthly data.[2]

Along with this unexplained volatility, there has also been a massive unexplained increase in the quantity of foreign exchange trading. In 1973, daily trading volume averaged around $15 billion. In 1998 it averaged $1,500 billion (Felix, 2001). This increase far exceeds that which can be explained by inflation and increased international trade. Moreover, over 80% of this daily trading is of a very short-term nature, being for settlement within 7 days (Felix, 2001).

Formal statistical analysis shows that there is a robust positive correlation between volume and volatility. Research on the microeconomic structure of FX markets (Wei and Kim, 1997) shows that the open position of large FX traders Granger-causes volatility, and is unrelated to subsequent appreciation. This is an important finding since these open positions are speculative positions, and the evidence shows that taking of these positions occurs systematically prior to bouts of increased volatility, yet opening of these positions is unrelated to sustained changes in the exchange rate.

In sum, the microeconomic evidence paints a picture of a market characterized by significant speculation – that is patterns of trading and

[2] See Obstfeld (1995).

price movement cannot be explained by economic fundamentals. Instead, the evidence supports the picture described by Tobin (1978):

> *"In the absence of any consensus on fundamentals, the markets are dominated – like those for gold, rare paintings, and – yes, often equities – by traders in the game of guessing what other traders are going to think."*

Currency Volatility: The Macroeconomic Evidence

In addition to microeconomic evidence based on high frequency (daily and monthly) data, there is also macroeconomic evidence based on lower frequency data. Over the last twenty five years, a clear feature of FX markets is that they have been subject to long swings that result in large departures of the real exchange rate from purchasing power parity (PPP) which theory predicts should hold (Rogoff, 1996).[3] In addition, economic models are empirically unable to predict actual exchange rates. This applies to all theoretically suggested models, and the best model over any modest time horizon is a simple random walk.[4] This is indicative of the presence of speculative noise traders.

Finally, the system of flexible exchange rates has been marked by increased frequency of financial crises. Mexico was afflicted by crisis in 1994, East Asia in 1997, Russia in 1998, and Brazil in 1999 and 2002. Financial crises have also afflicted industrialized countries. The French franc was subject to speculative attack in 1982. The British pound was attacked in 1992, as was the Swedish Krone. And U.S. markets were buffeted by the collapse of Long Term capital Management (LTCM) in 1998 that occurred as a result of the wave of unpredictable interest rate movements generated by the Russian financial crisis. The belief is that all of these crises were either triggered or exacerbated by financial speculation, and that measures to reduce speculation - such as the Tobin tax - would either have helped avoid the crises or reduced the extent of resulting damage.

From a policy standpoint, financial crises impose massive economic losses owing to the sharp deep recessions that follow. From a U.S. perspective, more damaging than the immediate effects of financial crises are long swings in exchange rates. Thus, for the U.S.,

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[3] Economic theory predicts that the equilibrium real exchange rate should be roughly equal to the ratio of country price levels, adjusted for differences in (1) *ad valorem* sales taxes, and (2) the value of non-tradable inputs whose price is not equalized across country markets.

[4] The empirical literature on exchange rates is briefly reviewed in Taylor (1995).

more important than the immediate impacts of the East Asian financial crisis, was the plummeting of East Asian currencies relative to the dollar. This has undermined U.S. manufacturing by imposing a massive competitive disadvantage. Indeed, the persistence of the economic slump that began in 2001 (and continues as of this moment), can be significantly attributed to the effects of an over-valued dollar on manufacturing (Palley, 2003).

Moreover, the current episode of sustained dollar over-valuation is not the first. A similar episode occurred in the first half of the 1980s when the dollar underwent a prolonged period of over-valuation that rendered U.S. firms internationally uncompetitive. There have also been similar problems in the U.K., both in the early 1980s and late 1990s, when the pound sterling appreciated thereby making British manufacturing uncompetitive.

Finally, on a historical note, for much of the 1980s Europe's economy was adversely impacted by fears of currency crisis. To avoid this, many European governments raised interest rates to shore up their currencies, resulting in higher Europe-wide interest rates that contributed to higher unemployment. The introduction of the Euro in 1999 has significantly solved this problem by reducing the scope for currency crises amongst small European economies, but the episode illustrates how even developed countries can be hurt by currency market speculation.

Why the Tobin Tax Can Help Reduce Harmful Speculation

The above evidence – both microeconomic and macroeconomic – points to dysfunction in FX markets. Proponents of the Tobin tax believe that it can help correct this dysfunction. Before detailing how the Tobin tax can do this, two important points. First, a Tobin tax will work best when introduced as part of an overall financial architecture, which is why proponents usually present it as part of a package of reform measures. Second, the Tobin tax does not prevent bad outcomes resulting from bad policy. For instance, a major reason for the damaging appreciations of the dollar and the pound sterling in the 1980s was tight monetary policy in the U.S. and U.K. respectively. This raised interest rates and attracted an inflow of foreign capital that appreciated the exchange rate. Consequently, an appreciation would likely have happened even in the presence of a Tobin tax, though it is possible that the inflows might have been marginally dampened. Similarly, a Tobin tax will not prevent exchange rate collapses resulting

from government attempts to maintain fixed exchange rates that are massively over-valued relative to the level warranted by economic fundamentals. Critics of the Tobin tax often point to the fact that the tax is so small (1/10 percent) that it would not deter speculators from attacking over-valued fixed exchange rates when large double-digit percent gains are anticipated.[5] However, such criticism misses the point. The Tobin tax is not intended to prevent speculation resulting from massive policy induced exchange rate overvaluation. It is intended to prevent groundless speculation that increases noise in financial markets and imposes costs on other sensible investors.

The traditional "Chicago School" view of speculation is that speculation is stabilizing (Friedman, 1953). This Chicago point of view is predicated on the argument that there exists a market price that is warranted by economic fundamentals. When the actual price exceeds this warranted price, speculators realize that the market is over-valued. They therefore sell, and drive the market down to its warranted price. Conversely, when the actual price is below the warranted price, speculators realize the market is under-valued. They therefore buy and drive the market up to the warranted price.

This traditional "Chicago School" view has been challenged from a number of directions. One challenge comes from the Chicago School's own rational expectations theory of behavior which shows how asset price bubbles can be rationally self-fulfilling. All that is needed is that market participants expect that the future price will be higher, and they will buy now in anticipation of this higher future price. In this fashion, "market beliefs" can become the driving fundamental, and if speculators share and shape this belief they can drive prices away from the level warranted by economic conditions.

A second challenge comes from the noise trade literature (De Long, et al., 1990) that shows market participants who trade purely on the basis of noise may come to dominate the market. FX market noise traders look to make gains on very small basis point movements. Because they are indifferent to risk, they earn a higher rate of return then ordinary risk-averse persons. As a result, noise traders can come to dominate the market, and though the market remains stable, it produces socially sub-optimal outcomes.

A third challenge to the traditional view comes from the literature on herd behavior (Banerjee, 1992; Palley, 1995) that posits market investors may rationally act as a herd. Each individual acts rationally

[5] See Davidson (1997). Spahn 's (1995, 2001) two tier Tobin tax can actually dissuade speculation even when larger gains are anticipated.

from his or her own standpoint, but collectively they behave as a herd, each following the actions of others for no reason other than the fact that others are doing it. In this case, the "behavior of others" becomes the market fundamental, and the actions of speculators can trigger herd-driven exchange rate movements that have no relation to underlying economic conditions.

A fourth strand of work, emphasizing economic efficiency concerns, focuses on how speculators may cause damage to other market participants when they cash out of their investments (Palley, 1999a). This seems to have been particularly prevalent in East Asia, where the decision to cash out and repatriate investments led to a fall in the exchange rate that then increased the debt burden of those east Asian entrepreneurs who had used foreign currency borrowings to finance their business expansions. In such instances, speculators impose a negative externality on other investors. These other investors (call them fundamentals investors) are in for the long haul, and their investment calculus is thereby compromised. Conventional economic theory advises that policy makers should tax activities having negative externalities, thereby making them more expensive and discouraging them. This is well-known theory of Pigouvian taxes, named after the English economist A.C. Pigou. Viewed from this vantage, the Tobin tax is a form of Pigouvian tax that is applicable to international financial markets.

The above theoretical arguments complement the earlier empirical arguments. They explain why FX markets exhibit the patterns they do, and they explain why these patterns are inefficient and sub-optimal. A Tobin tax can help improve the situation. The logic is simple. Speculation is economically disruptive and destabilizing. It is caused by noise traders whose presence creates market volatility risk, and these traders profit from the induced volatility premium. The imposition of a very small tax can wipe out these gains, thereby discouraging noise traders from entering the market.

In addition to reducing daily FX market volatility, the Tobin tax may also help reduce medium term exchange rate swings that have so distorted the international economy. Here, the argument is that these swings can result from momentum FX trading strategies.[6] Once the wagon gets rolling, traders extrapolate that it will keep rolling, and they therefore have an incentive to jump on board. When everyone does this, the trading strategy can become self-fulfilling. A Tobin tax may be able

[6] They can also be caused by bad economic policy, in which case the Tobin tax will be of no benefit.

to prevent this by stopping momentum from developing. The analogy is with a car on a hill, which if held by a small wedge, will not roll down the hill and gather momentum.[7]

Finally, the hill – wedge analogy also helps understand why the Tobin tax is of little use in stopping financial crises. Such crises can be thought of as analogous to a situation where the car has started rolling down the hill. In this event, placing a small wedge under the wheel will be of little use in stopping the car from moving. However, in this situation a modified two-tier Tobin tax, as proposed by Spahn (1995, 2001), may work. His proposal is that in times of speculative crisis the Tobin tax be raised to penalty rate levels – say 15% instead of the normal 1/10%. This second tier would become a form of FX market circuit breaker, akin to that used in stock markets where computer-trading programs are suspended when prices have fallen a given amount.

Could the Tobin Tax Increase Volatility and Reduce Efficiency?

Critics of the Tobin tax maintain that it could actually increase market volatility by discouraging transacting, and thereby reducing the liquidity of the market. This would thin the market, and increase volatility because thin markets are prone to "one-sided" market sentiment – i.e. everyone wants to sell or everyone wants to buy.

By definition, if the Tobin tax is successful at eliminating noise trading, it will reduce market volume. However, that does not automatically imply that the market will be thin. FX markets are so large ($1,500 billion per day in 1998) that even if some trading were discouraged, they would remain highly liquid. Moreover, these markets would continue to have larger volumes than fifteen years ago. The markets were stable back then, and there is no reason to believe that they would not be now. Finally, empirical evidence from the International Monetary Fund (Habermeier and Kirilenko, 2001) shows that securities transactions taxes, which are far larger than the proposed Tobin tax, do not raise volatility in securities markets.

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[7] Momentum bubbles have a strong resemblance to rational expectations bubbles. The difference is that momentum investors only look one period ahead so that a small tax may be sufficient to prevent them from buying. A rational expectations investor looks into the infinite future, and a small tax may not be sufficient to prevent them from buying if they see future prices rising by a lot. The momentum model, with its truncated investor time horizon, seems a better model of reality. Given this, the Tobin tax could be very effective in preventing bubbles.

Another related objection is that the Tobin tax will drive *bona fide* market-makers out of business by raising their transaction costs. This in turn could contribute to a more inefficient and volatile market. Here too, the assertion is questionable. First, costs of transacting, even after the imposition of a Tobin tax, would be lower than they were a decade ago because of declines in other transactions costs. Thus, if market-makers could survive under the earlier cost structure, it stands to reason that they will be able to survive under a lower contemporary cost structure, even though it includes a Tobin tax.[8]

Second, it is not even clear that total transaction costs would be higher with a Tobin tax. The initial implementation of the tax would definitely raise transaction costs. But if successful at driving out noise traders, the tax would reduce volatility, in turn reducing the volatility risk premium. Transaction costs could therefore even fall owing to the changed composition of traders, with noise traders permanently kept out of the market by the presence of the Tobin tax. This type of link between low transactions costs, increased volume, and increased volatility is suggested by recent U.S. stock market data. Figures 1 and 2 show how volatility on both the New York and NASDAQ stock exchanges has increased significantly during the second half of the 1990s, which was a period of sharply declining transactions costs. The figures suggest that a small increase in stock market transactions costs that reduced volume might reduce stock market volatility. By similar reasoning, an increase in currency dealing transactions might reduce exchange rate volatility.[9]

Another form of objection to the Tobin tax is that it reduces market efficiency by taxing all transactions, regardless of their economic contribution. Here, it is worth distinguishing between types of trader, and for this purpose let there be three types – short term speculators (noise traders), long term "fundamentals" investors, and traders engaged in financing international trade in goods and services. With regard to speculators and investors, the impact of the Tobin tax is likely to be significantly different. Speculators make their profit from small basis point movements on each trade, and even at 1/10 percent, the Tobin tax stands to eliminate this profit. Consequently, they have a very high elasticity of trading demand with respect to the Tobin tax, and their trading volumes will be significantly reduced. Conversely, investors are in for the long haul, and the 1/10% tax is close to

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[8] Data on stock market volatility come from TIAA-CREF Participant, August 2000, p.2-3. Data for 2000 is through June and is annualized.

[9] Data on stock market volatility come from TIAA-CREF Participant, August 2000, p.2 - 3. Data for 2000 is through June and is annualized.

insignificant for them. They therefore have a negligible elasticity of trading demand with respect to the tax, and their trading volumes are unaffected. This situation is captured in figures 3.a and 3.b, showing speculators and investors trading demands as a function of the Tobin tax. In the limit, investors could even be completely unaffected, in which case the Tobin tax functions as a screening device that matches the unremunerated reserve requirement (speed-bump) arrangement used by Chile's monetary authority (Palley, 1999b). Indeed, investors' demand might even be a positive function of the Tobin tax if the tax so reduced volatility that it reduced risk and increased return to investors.

Regarding international trade, it is true that the Tobin tax also taxes *bona fide* currency transactions made to finance international trade in goods and services. This is because it cannot distinguish between speculative currency dealings and dealings to finance trade. Since trade is *prima facie* welfare enhancing, this suggests that public welfare will be reduced to the extent that trade is reduced.

There are three counter-arguments to this trade argument. First, the Tobin tax would be very small in magnitude. This means that trade which could not bear the addition of a 4/10 percent tax (assuming financing of one dollar of trade requires four financial transactions) contained little social value, and any loss to society would be correspondingly small. In effect, only the most marginal of trade would be displaced. Moreover, this marginal trade may in reality have negative social value, so that stopping it may be a social good. The reason is that trade often leads to a reallocation of production. This reallocation is decided on the basis of the private benefits and costs to firms, and firms reallocate as long as their net private benefit is positive. Yet, trade induced reallocations of production frequently impose large costs on workers and communities as jobs are lost and worker skills are rendered redundant. These costs are borne by the displaced workers and communities, and are not internalized (i.e. taken account of) in firms' decisions to relocate production. A small Tobin tax would serve as a way of proxying for these costs, and it would force firms to internalize them in their production relocation calculus. Furthermore, trade also has significant environmental externalities, in the form of pollution, that are not costed into the social value calculus of trade. A Tobin tax would serve to internalize this environmental externality.

A second counter to the trade-loss argument is that a Tobin tax might actually increase trade. This is because it stands to reduce currency market uncertainty, thereby making it easier for firms to trade. With reduced currency risk, firms would pay less to hedge against

foreign currency risk exposures incurred in the course of financing international trade. This would lower the cost of trade, thereby increasing trade.

Finally, a third reason why a Tobin tax could increase trade is that the reduction of currency risk that goes with reduced exchange rate volatility could induce firms to substitute away from multi-national production toward increased use of trade. Exchange rate volatility has likely been an important factor explaining the growth of multi-national production. This is because it has given firms a reason to build up a cross-country portfolio of production facilities to protect against exchange rate fluctuations. However, in doing so, firms have reduced their reliance on trade. Absent currency uncertainty, trade would be the best way of organizing production; with currency uncertainty, firms switch to multi-country production, often running facilities at less than full capacity.[10]

Macroeconomic Policy Autonomy and the Dominance of Finance

A significant original concern of Tobin (1978) motivating his proposal of the Tobin tax was the issue of country macroeconomic policy autonomy. Capital flight and exchange rate volatility can undermine this autonomy by compelling governments to abandon policies that may be in the national interest, but are disliked by financial interests. The classic example of this is France's attempt in 1982 to pursue a modest Keynesian stimulus to combat the effects of recession. Financial markets disapproved of the policy, and mounted a speculative attack on the franc that compelled the government to reverse course.

This power of financial markets rests on veto by exit. It is a power that has grown over the last two decades as transaction costs have fallen with advances in electronic communication and money transfer technology. A Tobin tax can help counter this power of financial markets since the imposition of a transactions tax makes movement between countries more expensive.

A second feature of the last two decades has been the explosion in the volume of financial transacting. Excessive financial trading can be viewed as an economic distortion, in that it uses scarce real resources.

[10] Another consequence of the shift to multi-national production concerns income distribution. By contributing to a changed structure of production, exchange rate volatility has helped change the pattern of bargaining power in favor of capital over labor, which in turn has contributed to deterioration in income distribution.

Here, an analogy can be made with casinos. Operating a casino costs resources, and these resources are only justified if they produce net gains. In the casino industry, gambling is entertainment, and it is generation of entertainment value that justifies the industry. FX markets are not part of the entertainment industry, yet much activity may simply be a form of noise trader gambling. [11]

Finally, the introduction of a Tobin tax can also be viewed as contributing to the agenda of taxing capital. There is now widespread recognition that globalization has tended to favor capital by facilitating the movement of capital, thereby increasing options available to capital. This has contributed to twisting the distribution of income in favor of capital, and shifting the burden of taxation on to labor income. A Tobin tax can be a small step in redressing this shift.

The Public Finance Case for a Tobin Tax

In addition to lowering market volatility and reducing damaging speculation, a Tobin tax also has a public finance justification that is by itself justification enough. Using 1995 currency transactions figures, Felix (2001) estimates the global revenues from a Tobin tax of 0.1% to be between $186 billion and $241 billion. If the tax were set at 0.05%, the revenue estimate is between $134 billion and $149 billion. Using 1997 data, Pollin et al. (1999) consider a joint Tobin - Keynes tax (they call it a Securities Transactions Tax) that applies within just the U.S. to all currency, equity, and bond market transactions. They estimate that this would rise between $70 - $100 billion a year. These sums constitute enormous revenues that could either be retained by national governments to finance important public spending priorities, or could be used to finance equitable sustainable global economic development - a new global Marshall Plan. For instance, the UN estimates that the annual funding needed to achieve the Millennium Development Goals (MDGs) is of the order of $50 billion, so in principle a Tobin tax could fund the MDG project.

Such revenues are especially valuable given the widely acknowledged problem of tax competition (Tanzi, 1996; OECD, 2000) that has contributed to an erosion of national tax bases, and to a shifting

[11] Hirshleifer (1971) provides theoretical arguments why the activities of financial markets may be socially unproductive even though they are productive from a private standpoint. The crux of his argument is that financial markets may engage in activities that are redistributive (my gain = your loss) rather than production augmenting. Tobin (1984) also criticizes the financial system for absorbing too many real resources to the detriment of the rest of the economy.

of tax burdens away from capital on to labor (Rodrik, 1997). In this regard, there is also every reason to believe that a Tobin tax would be relatively progressive in incidence, with the burden falling predominantly on those with higher incomes.

The amount of revenue raised will of course depend importantly on the extent to which the tax reduces currency speculation (i.e. on the elasticity of demand for foreign exchange transactions). If the tax has little impact, the revenues will be relatively larger: if the tax has a large impact, the revenues will be relatively smaller. However, interestingly, in both cases the tax is justified by the theory of optimal taxation (Palley, 1999a). If the impact is small, this implies the demand for currency transactions is relatively inelastic, and the theory of optimal public finance recommends that governments should tax activities with inelastic demands.[12] Conversely, if the impact is large, then speculation will have been reduced, thereby reducing the negative externality imposed by speculators on other investors in accordance with Pigouvian tax theory. This reveals the win - win public finance character of the Tobin tax.

Is a Tobin Tax Feasible?

The theoretical case for a Tobin tax represents one part of the debate. Equally important is the question of whether a Tobin tax is feasible. Critics claim that it is not. One criticism focuses on "avoidance through jurisdictional shopping", while a second focuses on "avoidance through changed product mix".

With regard to the former, the principal objection to the Tobin tax rests on the claim that it needs to be applied on a global basis in coordinated uniform fashion. Absent this, currency traders will have an incentive to engage in "jurisdictional shopping," and traders will just shift their activities away from countries with the tax to countries with out it.

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[12] The economic logic is as follows. Governments need to raise revenues, and hence the need to tax. But taxes change relative prices, thereby distorting the pattern of economic activity and shifting it away from the first best equilibrium that would prevail in the absence of taxes. Public finance theory therefore advises policy makers to tax those activities that are relatively insensitive to increased prices (i.e. in which demand is inelastic), in which case taxes will have relatively little impact on the pattern of economic activity. This is often advanced as an economic justification for "sin" taxes on tobacco, alcohol, and gambling, because the demand for sin is relatively inelastic. The Tobin tax can be seen as a form of sin tax - the sin being currency market speculation.

Though some jurisdictional shopping would exist in the absence of uniform application, there are a number of reasons to believe that this effect would be inconsequential - especially if the tax were applied in a significant group of countries such as the G-7. This prediction derives from the Bank of International Settlement's (BIS) experience with capital standards, which in many regards exactly parallel the Tobin tax. These standards impose an additional cost on banks by asking them to hold more costly equity capital, and banks therefore have an incentive to shift to jurisdictions where they are not applied. Yet, there is no evidence that this has occurred. Instead, conforming to the BIS standards has become the equivalent of a seal of good housekeeping, and this has given governments an incentive to apply and enforce them in order to retain good standing and attract business to their financial markets.

Furthermore, establishing a *de facto* global standard will be facilitated by the fact that currency trading is highly concentrated. Using 1995 data, Felix (1996) reports that 62% of trading takes place in the top five markets (U.K., U.S., Japan, Singapore, and Hong Kong) and that 84% takes place in the top 9 (top 5 plus Switzerland, Germany, France, and Australia). If these countries, plus the remaining G-7 countries (Italy and Canada) were to impose a Tobin tax, this would capture the vast bulk of the world's markets.

Not only would it be feasible for the G-7 to go it alone in imposing a Tobin tax, Baker (2000) suggests that the U.S. could successfully unilaterally impose a Tobin tax. The bottom line is that a Tobin tax would fractionally raise the cost of doing business, but the U.S. is one of the world's low cost producers of financial services. Because of this, the tax-induced small increase in the cost of doing business would not necessarily result in much loss of business to other markets. Decisions where to locate do not depend exclusively on narrow transactions costs. They are also influenced by the business environment, the network of other support services and ancillary markets, and by the soundness of the regulatory system governing the conduct of business. All of these factors work to the advantage of U.S. markets, so that a small Tobin tax need not be critical in the business location decision.

A second issue regarding feasibility concerns avoidance by change of product mix. Here, the argument is that even if governments were to impose a Tobin tax, market participants would have an incentive to substitute out of financial instruments subject to the tax into instruments not subject to it. In this fashion, markets would innovate so as to avoid the tax.

There is merit to this observation, yet again it is not decisive. First, the extent of avoidance will depend critically on the design of the Tobin tax. To the extent that it is narrowly designed, avoidance by substitution will be larger. For instance, focusing on just spot currency markets would clearly induce a huge shifting of transactions into futures and derivatives markets. Thus, the real issue is how to design a tax that takes account of all the methods and margins of substitution available to traders. Taking account of these considerations implies a Tobin tax that is bigger in scope, and pushes the design toward a generalized securities transactions tax that resembles the tax suggested by Pollin et al. (1999). There are four benefits to this broader approach. First, it is likely to generate significantly greater revenues. Second, it maintains a level playing field across financial markets so that no individual financial instrument is arbitrarily put at a competitive disadvantage versus another. Third, it is likely to enhance domestic financial market stability by discouraging domestic asset speculation. Fourth, to the extent that advanced economies already put too many real resources into financial dealings, it would cut back on this resource use, freeing these resources for other productive uses.

Lastly, there are also significant market forces that deter avoidance by product substitution. A Tobin tax imposes a small cost on transactors, giving them reason to substitute into different financial instruments. But such substitution is costly both in resource use, and because alternative instruments do not provide exactly the same services. These costs act as a check on the incentive to substitute. Thus, just as the market provides an incentive to avoid a Tobin tax, so too it automatically sets in motion forces that deter excessive avoidance.[13]

The above arguments regarding feasibility are theoretical in character. A final empirical point of support comes from the history of use of transaction taxes in asset markets. Baker (2000) documents how these taxes have been widely used in most major economies, and they continue to be used in many countries. When it comes to domestic asset markets, securities transactions taxes have clearly not prevented efficient functioning of securities markets. The Tobin tax represents a marginal expansion of the domain of these taxes to include currency transactions. Given the history of use of securities transactions taxes, it is hard to see why such an extension would be either dangerously destabilizing or infeasible.

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[13] The same market forces also operate to contain the problem of jurisdictional shopping and evasion. Moving the geographic location of transacting is costly in terms of lost business networks, ancillary markets, etc. This dampens the incentive to move.

The Tobin Tax, Political Will and the Principles of Good Public Policy

Reflection on the issues of enforcement, evasion, and avoidance that surround the Tobin tax raise critical technical questions. But beyond this, are issues of political will and the principles of good public policy. The Tobin tax raises a series of complex issues related to the economic need for and feasibility of such a tax. Argument and the evidence suggest that it is needed, and that it is feasible. This means that "political will' is the ultimate constraint. Much has been made of the issue of feasibility, but the experience regarding BIS capital standards shows that international collective action problems can be solved when governments choose.[14]

Critics argue that the problems of enforcement, avoidance, and evasion make the Tobin tax infeasible. Not only are these problems over-stated by the critics, they also miss the point that evasion and avoidance are not decisive in determining whether a tax is warranted. Every tax system is subject to some evasion and avoidance, and the extent of such behaviors is an appropriate concern. But such behaviors are only part of the decision calculus. Also relevant is the amount of needed revenue that the tax raises, and the behaviors it discourages. This is the test that should be applied to the Tobin tax - just as it should for all tax systems - and on this test the Tobin tax scores well. Taxes are imposed on a wide variety of goods and services, and these taxes are generally regarded as being in line with market principles. The same holds for the Tobin tax.

Beyond this is an even broader principle concerning the nature of regulation in a dynamic global economy. Critics of the Tobin tax argue that financial markets will innovate to avoid it. This is undoubtedly true, yet it does not mean that a Tobin tax is unwarranted. Effective taxation places costs on profit maximizing firms, while effective regulation imposes constraints that prevent them from doing what they would like. Firms therefore have an incentive to search out ways of avoiding taxes and regulations, and over time they tend to succeed in doing so. Indeed, if the incentive to avoid is not there, it probably means the regulation is of little consequence. Seen from this analytical

[14] Baker (2000) makes similar claims about political will comparing the problem of Tobin tax enactment and enforcement to that of money laundering. With regard to the latter, the political will exists to stop it, and governments have therefore joined together to do so.

vantage, it becomes clear that good regulation always sows the seeds of its own destruction. This should be the Rosetta stone of all regulators.[15]

Over time financial markets will undoubtedly innovate in directions that allow some avoidance of a Tobin tax. But this does not invalidate the case for a Tobin tax. Instead, it affirms the fact that regulation is an on-going process - a dynamic game played between regulators and regulated - that needs to be continually updated. Sometimes regulators manage to get ahead of the game, and other times they just manage to stay even. However, there is never an excuse for capitulating and surrendering the public interest to the dictates of the market. Unfortunately, much of the opposition to a Tobin tax partakes of such surrender. This is unjustified in principle, and unjustified on the particular merits of the Tobin tax.

[15] See Palley (1999c, p.110).

Figure 1 Number of days S&P gained or lost more than 1% or 2%.

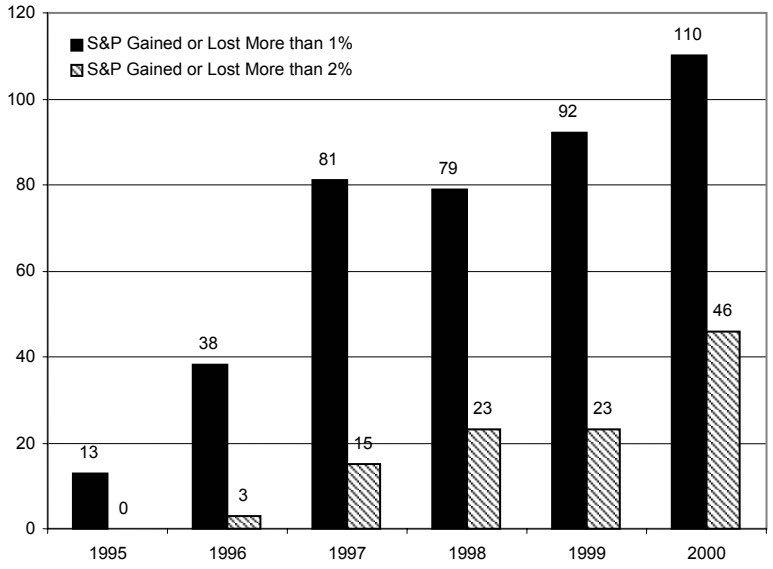
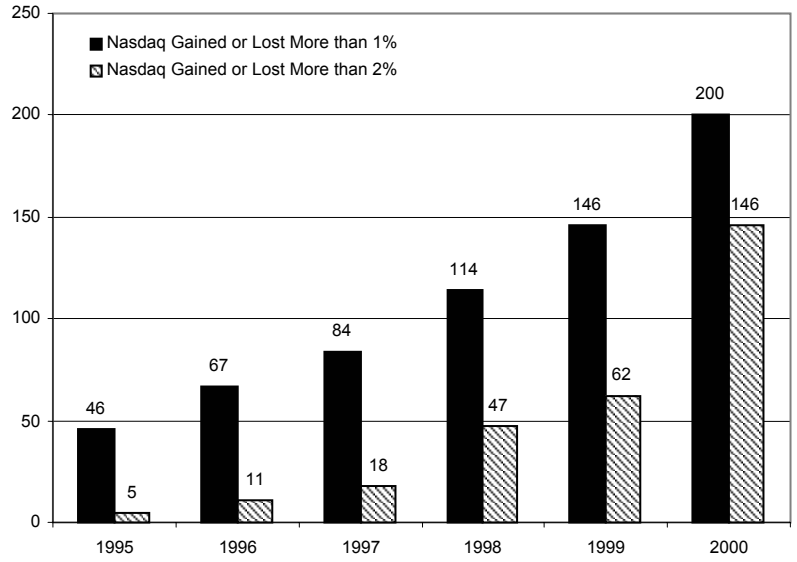


Figure 2 Number of days NASDAQ gained or lost more than 1% or 2%.



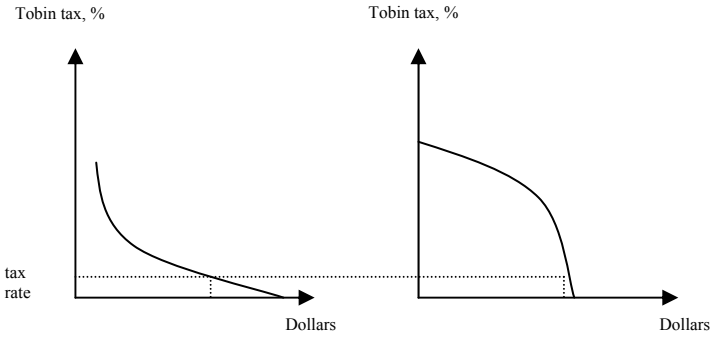


Figure 3.a Speculators' demand for currency trades as a function of the Tobin tax rate.

Figure 3.b Long term investors' demand for currency trades as a function of the Tobin tax.

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3

LESSONS FOR TOBIN TAX ADVOCATES: THE POLITICS OF POLICY AND THE ECONOMICS OF MARKET MICRO-STRUCTURE

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The policy proposal for the imposition of a transaction tax – also known as a "Tobin tax" or currency transaction tax (CTT)[1] – is a bad idea for three fundamental reasons. It is bad politics because it cannot be achieved politically, and therefore the pursuit wastes much effort and other resources. It is also bad policy because it cannot be achieved technically or administratively without an unreasonably high cost. It is bad yet again because even if one were to assume that it could be achieved politically and administratively, it would not accomplish its purported goal of stabilizing financial markets. Instead, it might well lead to policy outcomes that are in stark contrast to the goals of its proponents by resulting in lower financial market stability and higher volatility in prices and capital flows.

A better policy proposal would focus on a proper set of prudential financial market regulations which would more likely accomplish the desired policy goals while at the same time would be more politically feasible and less administratively expensive. An even easier comparison can be made to a capital gains tax proposal. In accordance with the "specificity rule" of policy efficiency and effectiveness, a tax

[1] The terms transactions tax, currency transaction tax and Tobin tax will be used synonymously throughout this essay. I understand that Tobin's was a particular variant among the larger rubric of proposals, but Tobin's name is now well attached to the notion of transactions taxes and it is the name used for this conference. Any needed qualification to the term will be made in the appropriate context.

on capital gains on transactions would apply directly to speculative gains and therefore exert a stronger disincentive on this type of activity.

Lastly, a side note on the claim, heard from time to time in this policy debate, that supportive remarks from Keynes and Tobin give the policy idea a wonderful pedigree or heritage. I do not agree with the notion of the ascendance of people – or ideas – based on inheritance. Just because someone you like or admire says something, or once said something, does not make it true or make it right. Simply stated, the formation of good policy is not akin to the practice of good animal husbandry. And this should be especially true regarding any quote from Keynes who warned that it was more important to be right than consistent.

Bad Politics

The transactions tax proposal is bad politically because it is too big and too vast,[2] and this makes the costliness of the political effort to pass such tax laws far greater than the promised benefits of the policy. If sufficient political power can be mobilized to establish a new global agreement on the taxation of financial markets, then the objectives should be far more ambitious than a mere transactions tax. If we can summit the Himalayas of politics, then we should have grander priorities than just reducing volatility and raising taxes.

One reason why it is so costly is that it most surely needs to be applied globally. Financial markets are very efficient, highly malleable and trading activities are not tied-down geographically. An attempt to impose such a substantial tax[3] in a narrow or limited location would lead to a swift and sure relocation of trading activities.

One often quoted empirical study by Umlauf (1993) shows that 60% of the trading volume moved offshore in a short period of time after Sweden raised its transactions tax on securities trading in 1986. Today, financial markets are even more sophisticated, efficient and electronic than when Sweden raised its transactions tax. The impact today would most likely be even greater than the 60% figure.

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[2] Kevin Kasa of the Federal Reserve of San Francisco, amongst many others, agrees with this point.

[3] Transaction tax proponents frequently repeat the claim that the tax rate is small or a small percentage rate. In fact it is a very large rate compared to the transactions costs of trading foreign exchange and most liquid securities and derivatives. If the transaction costs on currency trading were even 0.04% of principle (and that is a high estimate for trading the major currencies), then a 0.25% transaction tax could amount to a 625% increase. The percentage increase would become even larger if it were to lead to a wider bid-ask spread.

Another, and more recent, example of large and sudden migration of trading volume can be found in the market for German government bond "Bund" futures contracts. This exchange-traded derivatives market was, and remains today, one of the largest in the world. Until the late 1990s, the market was located in London on the LIFFE[4], but once lower cost trading was offered by the Deutsche Terminbörse (now Eurex) in Frankfurt then the vast majority, and ultimately the whole market, of futures trading moved quickly to the home country of the German security. The difference in trading costs was miniscule compared to the 0.10% to 0.25% range of the Tobin tax proposal.[5]

This high degree of geographical mobility makes the imposition of transaction taxes a global imperative. It will require the agreement of all the world's nations, and they will have to agree on the rate of the tax increase as well as how to reallocate the revenue and how to collect and enforce the tax payments.

This task will be all the greater because of the potential gains to free-riders and the fact that the tax will be collected primarily in wealthy money centers in New York and London. Consider the difficulty caused when Freedonia[6] taxes trading in Sylvania's currency, or taxes Sylvania's citizens for trading in Freedonia's currency or demands that Sylvania make tax payments to Freedonia in Freedonia's currency.

And in turn, what makes this even more difficult is the fact that foreign exchange trading is highly concentrated in a few locations and currencies. According to the Bank for International Settlements' 2001 triennial survey, 47% of total trading volume is in New York (16%) and London (31%) and 84% of spot trading is in dollars. As a result, the tax will be collected mostly by wealthy nations and from trading in their currencies.

There is little or no precedent for such as a worldwide agreement and coordination on a tax increase, its enforcement, its collection mechanisms and its formula or system for distributing the revenue. The U.N. has yet to demonstrate its ability to facilitate such a worldwide level of agreement on an economic policy. Even such smaller bodies as the G-7 or the G-11 have never had a common tax

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[4] London International Financial Futures Exchange where futures and options contracts were traded in pits through open-outcry.

[5] Keep in mind that 0.2% of $1,000,000 is $2,000. The cost of trading a futures contract is no more than $7 or $70 for ten $100,000 contracts. The amount by which Eurex is cheaper than LIFFE is most likely less than a dollar.

[6] With apologies to Bert Kalmer, Harry Ruby, Arthur Sheekman and Nat Perrin who authored the Marx Brothers' "Duck Soup".

policy – much less one that raises taxes. The members of the European Union have not established a uniform tax policy but agree on lowering tariffs (a tax decrease) and a common monetary policy. In comparison to the rest of the world, members of the EU are proximate in location and level of economic development.

Similarly, larger bodies such as the signatories of GATT and members of the WTO – the latter of which did not initially include China, Russia and others – have never agreed to a common tariff increase.

There are yet additional reasons why the economics of the politics of the tax do not work in its favor. A transaction tax will fall most immediately and heavily on financial institutions, and so most of the world's financial and commercial interests will oppose it. They will have the force of not only money but also economic rationale and efficiency on their side.

In addition, the proposal is undeniably a tax increase. That may not be seen as such a problem in some nations, but it is a major hurdle in the U.S. whose support for the proposal is necessary. Recall that there was not sufficient political power in the U.S. to stop the Bush Administration's enormous tax cut for the rich in 2001 and then an acceleration and expansion of the cuts in 2003. This is neither a unique nor a new situation. Reagan caulked up similar tax cuts in 1981 and 1986, and by comparison many Democrats suffered electoral defeat for their support of tax increases (which were small in comparison to the tax cuts) in the 1993 budget. In this light, it would seem that any new tax increase would face tremendous opposition.

In sum, the transaction tax proposal is a bad idea for political reasons. It is enormously costly to achieve and promises only modest results if implemented. There are already too many campaigns we are losing, why add another uneconomical one?

Bad Prospects for Implementation

The tax increase is bad policy also because it is extraordinarily costly to implement. The reason is that it must both be implemented throughout the world and it must be imposed on a wide array of instruments throughout the financial markets. Moreover, these transactions often occur in the largely (if not entirely) unregulated over-the-counter market where surveillance and enforcement is most difficult. By comparison, stamp tax duties and other examples of securities or futures transactions taxes were all imposed on transactions

on regulated exchanges. In order to facilitate the same tax imposition, an entirely new level of tax administration would need to be created.

Cross-border requirement (global in scale). If the tax were imposed in only part of the world, then it would lead to a relocation of trading into other, untaxed countries.

This would have the especially vexing consequence of further enriching off-shore tax havens. These renegade nations already engage in tax evasion and other financial transactions that are designed to outflank the prudential regulations of other countries. The introduction of a transactions tax would prove such a boom to their pirate economies that they might well issue postage stamps bearing the likeness of Professor Tobin or maybe even put his portrait on their local currency. If it is a bad idea to allow tax havens to serve as a conduit for terrorist financing, to undermine the tax base of developed and developing economies and to outflank prudential regulation of financial markets, then it is a bad, bad idea to give them additional tax incentives to do so.

Another way to circumvent the tax would be through the use of clearing houses, and the location of clearing houses in tax haven countries would be especially effective. A clearing house would enable participants in the taxed financial market to both multilaterally net their transactions with other market participants and in addition allow them to make payments and receive gains in a single currency thus potentially avoiding any actual foreign currency transaction. Markets organized around a clearing house would enable currency speculators to take long or short positions, close them out and then cash out in their original currency. Trading through such a clearing house arrangement would most likely be used by speculators rather than those engaging in international trade or foreign direct investment. Thus this gap or leakage in the imposition of the tax would more directly affect the market sector that is the target of the tax.

Some have argued that such a transactions tax could be imposed in a narrow range of countries. One proposal (Felix and Sau, 1996) focuses on the 5 or 7 or 9 countries where most trading is currently taking place, while another (Baker, 2000) argues that the U.S. could effectively impose the tax unilaterally. Palley (2001) provides a good discussion of this point. He argues that the Tobin tax is small relative to the lower cost advantages of trading in the U.S. over other countries and this small tax would not therefore overwhelm these cost advantages.

"Thus, the small induced increase in the cost of doing business would not necessarily result in much loss of business to other markets." (Palley, 2001, p.84)

This is a multi-flawed argument. The U.S. is probably not the lowest cost trading center. More trading volume is booked in London than in New York – in fact the volume of spot and derivatives transactions in foreign currency in the U.K. is double that in the U.S.[7] – and this suggests that it is the lowest cost location. More importantly, the cost in the U.S. and everywhere else is nevertheless very low. Based on the interdealer bid-ask spread,[8] the cost is less than 0.04% and maybe as little as 0.01% on transactions between major currencies (i.e. the vast majority of transactions). Taking the upper range of 0.04% and assuming the after-tax bid-ask spread does not widen, the 0.25% transactions tax would increase by 625% the cost of a transaction. Looked at another way, the 0.29% transactions cost would be over 7-times greater than before. Moreover, there is every reason to expect that such an increase in cost would reduce trading volume and liquidity and therefore widen the bid-ask spread. A wider bid-ask spread that raised pre-tax transactions cost to 0.08% would bump after-tax costs to 0.33% which would be more than 8-times the current level.

This would not amount to a "small induced increase in the cost of doing business." It would more than reverse years of investment and innovation in the means of currency trading that has reenabled transactions costs to be reduced to where they are at present.

The result is not a small increase in cost. Consider the consequences for the U.S. alone. If currency trading volume were cut in half, the tax levy would amount to $31.7 billion a day, and based on 255 trading days it would total $80.85 billion a year or 56% of the $144 billion total profits before tax for the domestic financial sector in the U.S. in 2001.[9] Such a tax increase would have a far greater consequence for the U.K. where trading volume is higher and output of the national and the financial sector is smaller. In sum, it would definitely overwhelm any real or perceived low cost advantage for the

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[7] BIS. 2002. Triennial survey for April 2001.

[8] Bid is the price at which someone is willing to buy, ask or offer is the price at which someone is willing to sell and the bid-ask spread is the difference between the two. The ask is generally higher than the bid as dealers try to buy low and sell dear.

[9] BIS. 2002. Triennial survey for April 2001. Volume in the U.S. is $253.654 billion per day. B.E.A. data on corporate profit by industry. Author's calculations for average share (75.3%) of finance in FIRE for 1994-1999.

U.S. and would almost certainly drive the majority of currency trading volume overseas or underground.

The result of a significant increase in the marginal cost of conducting financial transactions would result in the large and sudden relocation of trading volume. This would undermine if not vacate the goals of the tax increase.

Cross-market requirement. Similar to the need for the transactions tax to be applied across all borders in order to avoid substantial avoidance, if not complete evasion, the tax would also need to be imposed on a wide array of near-substitute financial transactions.

An effective transactions tax regime will need to rope in not only derivatives but also other financial instruments such as securities that are highly exchange rate sensitive. Derivatives are especially important because they can be traded without the need to deliver the underlying foreign currency or otherwise engage in a foreign currency transaction. If only foreign exchange spot transactions are taxed, then the trading and speculation will move to the derivatives markets. At present there is a large volume of trading on derivatives exchanges in futures and options on foreign exchange. Only a very small proportion of this trading involves any foreign currency transaction, and it could be structured so that it never involves such a transaction. In the over-the-counter (OTC) derivatives markets for foreign exchange there are already instances of trading in non-deliverable forwards, swaps and options in foreign exchange. The volume of such trading rises sharply whenever capital controls or other restrictions raise the cost of delivering foreign currency.

An additional problem in applying the transactions tax across markets and financial instruments is the problem of imposing the tax in an unbiased or efficient manner.[10] Efficiency requires that a tax be neutral across financial markets, and so it must be applied to securities markets, derivatives markets and lending markets to the degree that their returns are like those in foreign currency markets. Just as the regional imposition of a transactions tax caused trading volume in Swedish equity securities to migrate out of Sweden, the uneven imposition of the tax across markets will lead to a change in trading volume across markets. Campbell and Froot (1993) describe how the U.K. stamp tax led to an increase in the volume of derivatives trading in markets where the tax was not applied.

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[10] The Umlauf (1993) study makes a compelling case against a unilateral transaction tax, and that lesson should not be ignored.

Transactions tax proponents such as Dean Baker and Robert Pollin recognize this problem, and they argue that the tax must be applied in a neutral or uniform manner across markets. However even the best of intentions can go awry. Their studies (Baker (2000) and Pollin, et al, (2002)) contain a proposal for the application of a "neutral" transactions tax across instruments that include options; it is neutral in that the impact on transactions costs would be neutral. It would not however be neutral in terms of its impact on the cost of "taking a position on the market" or in other words in terms of the different rates of return on alternative derivative and currency investments. For instance, they propose to apply the tax to options according to their premiums.[11] This would result in vastly different tax impositions being applied to options that were identical but for the strike price or identical but for the time to maturity. It would create similar differences in costs for options on different currencies. Two otherwise identical options, except that one was on the Euro/U.S. dollar and the other was on the Real/U.S. dollar, would impose the greater tax on the Brazilian transaction.[12]

Their proposal would create a relative subsidy for options that were out of the money, and raise the tax (exponentially, I should add) as they appreciated in value. This is especially important in light of the historic problem with a high incidence of fraud by sharp futures brokers selling cheap "out of the money" options. Another problem would be created for barrier options.[13] As an example, it would relatively cheapen options such as knock-in puts on an LDC currency – just the vehicle a speculator would want to use in order to benefit from a currency devaluation.

The proper method for uniformly applying a transactions tax across futures and options is to apply the tax rate to the notional value of the derivative instrument. This effectively taxes the amount of price exposure, and hence the *ex ante* rate of return, in a manner that is equivalent to holding (or shorting) the currency.

Yet another major problem arises once the tax is imposed cross-markets. Many derivatives are traded over-the-counter. In doing so they are not necessarily cleared through any central bank or clearing

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[11] The term premium when applied to options means the price or cost of the option. This is akin to the use of the term when applied to the premium on insurance policies which is the cost of the insurance or the price paid for the policy.

[12] The economic reasoning is that the Real has a greater volatility and that volatility is one of the major factors determining the price of the option.

[13] Barrier options include knock-in and knock-out options. They have this structure in order to reduce their cost and increase their use by market participants.

house. Perhaps some of the net currency transactions between dealers and between dealers and their customers are paid through central bank clearing. In so far as derivatives are designed so that they pay-off entirely in a single currency, then they would not involve an exchange of foreign currencies at all. The upshot of this customization and over-counter trading is that there is currently little or no market surveillance or reporting requirements so that no one knows the total amount of trading – certainly not a thorough census of the activity which would be needed to assess tax payments. The imposition of the transactions tax would therefore require substantial new regulatory authority and new institutions to properly oversee this activity. While better market oversight would be a positive development in itself, this requirement nonetheless adds to the height of the summit that must be reached by the transactions tax proponents.

As an aside, the transactions tax proponents often reply to challenges to the feasibility of the tax by stating that all taxes have compliance problems, i.e. by saying that all tax impositions suffer from some tax evasion. The following is but one example.

> *"Of course, all taxes raise enforcement problems… but there is no a priori reason to believe that evasion of financial-transactions taxes would be more frequent than with other forms of taxation, such as the income tax"* (Baker, 2001)

It is of course true that all taxes regimes face efforts to evade them, but that is not the right point. The challenge is not that there is the usual or customary degree of evasion, but rather that there is a major problem of enforcement across borders and across (non-transparent and currently unregulated) markets.

More to the point, different taxes can have drastically different tax compliance rates. All may be less than 100%, but that common imperfection ignores real material differences in the degree of tax efficiency. In the U.S., the tax compliance rate on labor income is in the high 90s – maybe 96% – while that on rental income is closer to 50%. To say that the implementation of one is of no more concern that the other because they both suffer from some degree of tax evasion ignores a great deal of economic reasoning.[14]

In sum, and by comparison, there are better alternatives. The capital gains tax is an excellent example. The U.S. has had one for a long time (Europe by comparison has not), and although it has been

[14] IRS. 1986. Study of tax compliance in the U.S. Washington, D.C.

reduced in recent years the efforts to eliminate it have been unsuccessful. The case can be made that it is a better deterrent to speculation than a transactions tax. A good case can also be made that it would do so without the deleterious effects to liquidity. In addition, the capital gains tax has a record for being enforceable and that record can be the subject of further study to explore better enforcement methods. The capital gains tax is highly progressive from the point of income or wealth distribution. This is supported by numerous studies conducted on several occasions over the past 10 years in the U.S. by the Congress' Joint Committee on Taxation.

Bad Policy

The transactions tax proposal is a bad idea because it will not achieve the policy goals that it claims. It will not stop speculation. Nor will it lower financial market volatility or prevent instability. Instead it might well make matters worse. It is likely to significantly reduce market liquidity and to increase high-frequency[15] market volatility.

Consider first the claim that it will stop speculation. Even some transactions tax proponents agree that it will not stop speculation against currency devaluations. In other words, it will not deter currency attacks. Tax rates in the 0.10% to 0.25% range will not be sufficient to discourage speculation on the likely devaluation of a currency by 20% to 50%. Tobin tax proponent Tom Palley (2002, p.74) agrees that it will not prevent speculative attacks on weak or over-valued exchange rate regimes, and he goes on to state the following.

> *Similarly, a Tobin tax would not prevent exchange rate collapses resulting from government attempts to maintain fixed exchange rates that are massively overvalued relative to the rate warranted by economic fundamentals.… The Tobin tax is not intended to prevent speculation resulting from massive policy-induced exchange-rate overvaluation. Instead, it is intended to prevent groundless speculation that increases noise in financial markets and imposes costs on other sensible investors.*

[15] I use the term high-frequency volatility to refer to that measured intra-day or interday as opposed to quarter-to-quarter or year-to-year.

The Spahn (1995, 1996) version of the transactions tax will not help if the speculator lays on the position before the higher rate is triggered. Nor will it help if the triggered rate is not so high that it is confiscating. (Other problems with the Spahn version will be addressed below.)

As a result, a transactions tax will not prevent or even discourage speculation of the type that brought down the Thai baht and set off the East Asian financial crisis. The same would hold true for the Russian devaluation or the subsequent devaluations in Brazil, Turkey and Argentina. In fact all the recent financial crises have involved large degrees of currency devaluation, and such magnitudes would reward speculators even in the face of small transactions tax rates.

Similarly, the transactions tax will not stop or substantially discourage short-term banking lending or so-called "hot money" from flowing between developed and developing countries. The tax proponents argue that paying the tax at the beginning and end of each loan will significantly reduce the incentives for the short-term speculative lending. However, rolling-over loans does not require currency conversion and thus would not be subject to such a tax. Another means of avoiding the tax, while engaging in the same short-term lending, would be to issue a variable rate, long-term bond with a put option attached that allowed the lender to recall the loan on demand. That would certainly avoid any currency conversion except at the beginning and end of the loan. Given the large differences in interest rates between developed and developing financial markets, the disincentive of the transactions tax would not be strong enough to stop or discourage this activity.

Aside from whether transaction taxes will not prevent or substantially discourage speculation, their proponents argue that they will reduce market volatility and enhance financial market stability.

The claim that the transactions tax will reduce volatility rests upon the following explanation of market structure and market behavior. Briefly stated, the argument is that low transactions costs allow speculators and noise traders to participate in the market. Their behavior is not motivated by the pursuit of long-term investment gains, but rather by capturing short-term profits from day to day or even minute to minute changes in prices. This drives up trading volume, and their short-term speculative efforts – based on uninformed investment decisions – generate disruptive, inefficient price movements that are inconsistent with stability. The fundamental investors in the market are neither sufficiently numerous nor active to overwhelm the effects of this behavior. Instead the speculators and noise traders have a decisive

impact on the market and thus impose costs from noisy price signals onto the fundamental investors. If the fundamental investors were left alone in the market, their investment activities would result in more efficient and less volatile markets.

Given this explanation for the structure and behavior of the market, the policy claim is that the imposition of the transactions tax will raise the cost of trading and drive these participants partially or completely out of the market while leaving the fundamental investors to dominate the market.

The foundation for this argument is that speculators or noise traders are the source of the disorder and that they are dependent upon low transactions costs for their nefarious activities. This view assumes basically two kinds of market participants. One kind is the disruptive speculators or noise traders, and the other kind is the investors whose activities are informed by market fundamentals or who are engaging in international trade of investment. The noise trader is motivated by betting on changes in prices over the next day, or hour or minute. Information about market fundamentals is presumed to not play a role in this thinking. These opportunistic speculators make many, many short-term round-trip speculative trades as they attempt to profit from short-term changes in currency values. Since they are not informed, they sometimes act like animal herds or wolf packs in driving up prices too high or down too low. Other times they might act like lemmings and follow each other over a cliff to the detriment to the market, or they might become irrationally exuberant and like Icarus push prices dangerously high.

This is a good story. It is coherent and it ties the underlying flaws in the market to the policy remedy. However the story is based on a view of the markets that is not accurate. Sure all models make abstractions from the real world in order to simplify and clarify the economic analysis. But that does not mean that all abstraction are valid and it should not be used to justify abstractions that produce grossly distorting characteristics of markets and market participants.

The actual foreign exchange market is not composed of market participants whose behavior can be clearly and cleanly differentiated by terms such as "noise" and "fundamental." The actual world of market participants consists of multifaceted people with multifactor motivations. These include motives and objectives such as international trading, international investing, noise trading, speculation, arbitrage, relative value or "hedge" investing, dealing or market-making, underwriting and so on. Many market participants have more than one of these motivations just as so-called fundamental investment

decisions across markets might involve some degree of speculation about market timing.

In contrast to the simple bifurcated model, consider the following analytical description of the actual structure and functioning of the over-the-counter market in foreign exchange.

The OTC markets have traditionally been organized around a group of dealers who "make a market" by maintaining bid and offer quotes to each other and to their "customers."[16] The quotes and the negotiation of execution prices are conducted over the telephone, often with the aid of electronic bulletin boards, or through direct electronic trading.[17]

As a product of the central role played by dealers in OTC markets, the majority of transactions involve the dealers and a majority of those are transactions between the dealers themselves. The OTC inter-dealer market for foreign exchange includes perhaps three hundred dealers (broadly defined). However the lion's share of trading volume is conducted by the largest five or ten dealers. The list of the largest dealers, and they are not all banks, includes J.P. Morgan Chase, Citibank, Bank of America, Deutsche Bank, Goldman Sachs, Merrill-Lynch, and Royal Bank of Scotland.

According the Bank for International Settlements Triennial study of foreign exchange markets, 63% of total foreign exchange trading occurs between dealers, i.e. in the inter-dealer market. Table 1 below shows share of inter-dealer trading compared to that between the dealer and other financial institution and non-financial institutions.

Dealers are critical in maintaining market liquidity. Without the role of market makers, the markets would be subject to greater liquidity risk (the risk that a position cannot be changed because a trade cannot be executed or cannot be executed at a price near the market).

This is not the only function they serve. Madhavan (2000) finds that by carrying inventory, dealers in comparison to automatic order matching systems contribute to price stability in financial markets by their ability and willingness to buy and sell.

The U.S. Office of Comptroller of the Currency (O.C.C.) data on U.S. banks shows that 96% of the derivatives held by U.S. banks are used for trading and not hedging their portfolios. The figures for the largest 7 banks are listed below in Table 2. This data implies that amongst banks, there are 24 market-making trades (or dollars worth of trading) for every 1 hedging or speculative trade.

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[16] See Dodd (2002a) for a description of OTC markets and their regulatory structure.

[17] Electronic trading can involve automatic order matching through a trading algorithm (usually in a multilateral environment) or direct submission of quotes and orders to accept quotes in a bilateral environment.

Table 1

Global FX Dealers and Trading Volume
Million $, Average Daily Volume and %

Spot	$577,737	
Dealer to dealer	$347,689	60.2%
Dealer to financial institution	$120,708	20.9%
Dealer to other	$109,137	18.9%
Forward	$129,671	
Dealer to dealer	$49,078	37.8%
Dealer to financial institution	$34,424	26.5%
Dealer to other	$46,155	35.6%
FX Swap	$734,122	
Dealer to dealer	$511,719	69.7%
Dealer to financial institution	$124,077	16.9%
Dealer to other	$98,289	13.4%
Total	$1,441,530	
Dealer to dealer	$908,486	63.0%
Dealer to financial institution	$279,209	19.4%
Dealer to other	$253,581	17.6%

* *BIS Triennial Survey of Foreign Exchange Markets*

Table 2

Outstanding Derivatives By Purpose:
Trading and Market-Making or Hedging Portfolio
Millions $, Amount Outstanding and Percent of Total

U.S. Bank	Trading	%	Hedging	%
JPMORGAN CHASE	25,950,278	99.2	209,964	0.8
BANK OF AMERICA	11,203,772	98.3	192,327	1.7
CITIBANK	7,659,347	98.6	107,945	1.4
WACHOVIA BANK	2,001,221	89.1	245,484	10.9
WELLS FARGO BANK	302,525	27.4	800,927	72.6
BANK ONE	1,036,414	99.2	8,760	0.8
HSBC BANK	521,882	99.0	5,379	1.0

* OCC for 2002, Third Quarter

Of course dealers can speculate too. A dealer can speculate by merely holding on to the yen and hope that someone would come and buy the yen at the dealer's higher offer price. One other alternative is that the dealer could have speculated by holding on to the yen in the expectation than the price of yen and thus the other dealer's bid price would rise. This speculation is part of the normal course of the market and is an integral part of each dealer's willingness to buy and sell.

Table 3

Trading and Speculation:
Exposure and Trading Volume
Millions $, Positive, Negative and Net Value

U.S. Bank	Positive	Negative	Net	%
JPMORGAN CHASE	578,247	568,550	9,679	0.037%
BANK OF AMERICA	220,470	214,176	6,294	0.056%
CITIBANK	150,207	148,014	2,193	0.029%
WACHOVIA BANK	33,001	33,124	-123	-0.006%
WELLS FARGO BANK	4,990	4,863	127	0.042%
BANK ONE	21,235	20,848	387	0.037%
HSBC BANK	8,089	7,857	232	0.044%

* OCC for 2002, Third Quarter

Although dealers speculate too, it is a very small share of their trading volume. OCC data in Table 3 shows that the net market value of these major banks' trading books is very close to zero (the sums and the net of these sums however could mask much larger amounts of exposure in any one instrument or between maturities of one instrument).

The role of dealers in the market is also important for financial markets such as stock exchanges. A study by Hasbrouck and Sofianos (1993) estimate that 26% of total NYSE volume – where the share ranges from 20% for the highly traded stocks to 38% for those with the least volume – involved a dealer or "specialist."

Market-makers play an even greater role in OTC markets like that for foreign exchange than on the stock exchange markets. These vast numbers of transactions are not by "noise traders" but by dealers who are the mostly highly informed participants in the market.

The transactions that are not inter-dealer, are between the dealer and customers or more generally non-dealers. There are many possible purposes for transactions, and some of the major categories are:

speculation in currency values; speculation in a security or derivative that involves a currency transaction; direct foreign investment; outright purchase or sale of security or other asset; international trade; and foreign loan disbursement or repayment.

As market-makers they continually maintain bid and ask prices throughout the trading day. They post bid-ask quotes for trading with other dealers, but they also post a different, wider set of bid-ask quotes for trading with non-dealers known as "customers." At any time of the day a dealer can trade with another dealer at the other dealer's posted bid or ask prices, but there is little expected gain in this activity because the bid-ask a dealer gains is offset by the bid-ask spread it pays to other dealers. The better mark-up is made by trading with customers where the spread is larger, i.e. a larger difference between the price at which the dealer buys and sells. The customers pay this because they need the access to liquid currency markets (and because they cannot participate in the inter-dealer market).

Consider this typical string of events. In response to another announcement of bad news from Tokyo, a customer comes to the foreign exchange dealer and sells yen for dollars at the dealer's posted bid price for yen. This customer is said to "hit" the dealer's bid. The dealer does not necessarily want the yen. Holding an inventory of yen incurs an interest expense[18] and it exposes the dealer to a possible decline in the price of yen. So the dealer in turn sells the yen to some other dealer at that dealer's bid price and in the process of the two transactions earns the difference between the inter-dealer bid price and the dealer-customer bid price. Next, the other dealer that had its bid hit by the first dealer is now holding possibly unwanted yen. That dealer can sell to another dealer at the third dealer's bid price. However market competition in the inter-dealer market usually results in dealers all having the same bid and offer price, and so when one dealer buys at its bid price and then dumps the currency at another dealer's bid price, it does not generate any gain. In fact it leaves the dealer with a tiny transactions cost. Nonetheless this third dealer too may choose to unload the yen to yet another in order to avoid the inventory carrying costs and the currency exposure. One useful image of this activity is the child's game of "hot potato."

The above scenario illustrates how liquidity is created in OTC markets and how it entails many seemingly fruitless transactions. Fruitless, but not economically useless, because this activity

[18] In this case the interest expense might be the difference between the dollar interest rate of financing inventory and the zero interest rate earned on yen currency.

nonetheless creates a very liquid market in which even large sized transactions can be conducted with little or no price movement. It also creates the confidence that a counterparty is always there in the market willing and able to take the other side of a transaction. Liquidity is both a source of market stability and an indication that market participants have confidence in the market and market-makers to maintain liquidity.

Liquidity also facilitates the efficient pricing of securities, commodities or whatever the object of the market might be. Less liquidity, or less market efficiency, means that producers might receive too low a price or consumers pay too high a price.

Liquidity is also a deterrent to fraud and manipulation. It is hard to manipulate a large market and relatively less difficult to knock around a small market. This basic wisdom is firmly established in the regulatory framework for U.S. securities exchanges, futures exchanges and the OTC market in U.S. Treasury securities. For example, futures markets are subject to special precautionary measures when the underlying commodity is unusually scarce (illiquid cash market trading) at the end of the crop year.

This view of the actual structure and activity of foreign exchange markets provides additional insights into the causes of trading volume and the relationship to volatility. Volatility originates, for the most part, from an uncertain or changing world. Changes in volatility comes from changes in uncertainty or changes in the distribution of the changes that the world undergoes. Market prices reflect that underlying volatility, and it would be irrational for markets to ignore or disregard it. The issue here is whether the markets over-react to shocks or news events or other information and thus add to volatility, and whether markets sometimes cause volatility from their own internal machinations.

Regarding over-reaction, financial market participants respond to news and shocks by setting new prices and trying to readjust their positions accordingly. This is a rational economic response, and investors cannot be prevented from *trying* to react and adjust. The market price should be expected to change in order to reflect the implications of the new information about the value of the asset or commodity. Sometimes a large volume of trading occurs as market participants readjust their positions and establish a new price. The above scenario or "string of events" used to describe the structure of the foreign exchange market is an example of how a news event can generate a large number of transactions that ripple through the market as the news is digested.

Even if markets appear to experience volatility in excess of that justified by changes in the real world, it is not necessarily a substantial economic concern. For example, the average daily change in the Euro/dollar exchange rate is only 0.5% and in only 3 of 700 days did the change exceed 2% (measured by day to day change in noon buying rate as certified for customs purposes).[19] The social and economic cost of this level of variance or volatility is not high.

The extent that the volume of purchases and sales generated by the response to these shocks leads to a quick and orderly change in price is determined in part by the degree of market liquidity. The greater the degree of liquidity, the greater the ability of the market to handle large transactions without pushing prices away from their new fundamental values. Even though liquidity does not always guarantee an orderly marketplace, it does facilitate orderly trading and a more efficient price discovery process.

This is how volatility generates trading volume, and not the other way around. Shocks, news, events and unexpected information lead to reevaluation of market prices and then a flurry of trading to profit or cut losses from the price change. In the process, this activity generates a great deal of trading volume. As the great wit and sage Yogi Berra said, "you can observe a lot by watching." This direction of causation can also be seen time and time again by watching securities and derivatives markets: first the shock, then the surge in trading. Alternatively, observe the lull in trading prior to the announcement of a key economic number or central bank policy decision.

This view is supported by most financial analysts and numerous empirical studies of financial markets that show that increases in volatility cause the increase in trading volume. The reasoning is that the volatility leads investors to trade in order to better manage their risk and this in turn allows them to open, close, or change the quantity of existing positions. Portfolio managers trade in order to shift the composition of assets in their portfolio. The market makers in those markets naturally conduct several liquidity-making transactions for every one that is initiated to risk manage or portfolio shift.

Recall that 1998 was a very volatile year, due to the Russian debt default and the collapse of Long-Term Capital Management, and it was also a banner year for many futures brokers who profited by the increased volume in trading by their customers. In short, it was a bad year for volatility, but it was a great year for volume.

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[19] Authors calculations from Fed data for the time period beginning with the introduction of the Euro until the end of November 2002.

Short-term speculation. While a transactions tax will not stop or significantly curtail speculative attacks or speculation over major devaluations of developing country currencies, the transaction tax proponents argue that it might well have a substantial impact on inter-day or intra-day speculation.

The first step in evaluating this argument is to question to the social cost of short-term speculation. Intra-day or day-to-day speculation, and any volatility associated with it, is not necessarily a major social or economic concern. Recall the above example of the daily Euro-dollar exchange rate volatility. Similarly, no one complained about the volatility of the peso in July of 1994 or that of the Thai bath in March of 1997. The normal level of volatility might well be of little economic concern. It is the big changes, the devaluations, that cause major economic disruptions and costs and these movements are not mitigated by the transaction tax.

Moreover, it is not necessarily the case that speculators add to price upswings or downswings or otherwise add to market volatility. If speculators buy when prices move low and then sell when they move higher, then they dampen rather than exacerbate volatility. Only if they were trend investors, buying on upswings and selling on downswings, would they add volatility. However the trend investors are more likely to be the big institutional investors, i.e. professional fund and money managers, who manage pension funds, insurance company funds, mutual funds and the cash balances of corporations.[20] Their compensation is based on how they perform relative to the market benchmark, and therefore they have incentives to follow the market. Trend investment is based on buy-and-hold, not so-called "round-tripping," and so the transactions tax will not likely materially affect this behavior.

One could also argue that those buying or selling currency as a means to trade goods and services push the exchange rates up or down because they make their transactions, often in large quantities, without regard to whether the price is above or below expected values. Those transactions are not as sensitive or elastic with respect to small movements in the price, and they cannot be expected to drive the price towards equilibrium levels.

In short, there is a case to be made that speculators perform some useful economic functions. They help provide liquidity to some

[20] This is precisely the point made by former hedge fund manager George Soros in testimony before the U.S. Congress.

markets, they help "complete" derivatives markets when there is an excess of short- or long-hedgers, and they sometimes stabilize price movements by buying when prices are low and selling when prices are high.

In sum, trading volume is a healthy sign in a market and is not the cause of market volatility -- instead it is the market response to volatility. Volatility itself is not the product of uninformed speculators or speculative activity, but rather the market response to real or expected changes in market fundamentals. The degree of the response to market fundamentals, i.e. the magnitude of the volatility, may not be of significant economic concern even if it is in excess of that warranted by fundamentals. And speculators may perform economically useful, as well as useless, roles in the market. The well identified problems are those associated with substantial currency devaluations, but this cannot be solved or mitigated through the imposition of transaction taxes.

The imposition of a transaction tax might instead lead to far worse outcomes. The tax imposition would increase transactions cost, lower trading volume and increase the pre-tax or underlying bid-ask spread. The dealers would be less willing to engage in market-making activity because laying off a trade would cost the dealer the tax. This would lead to a less liquid inter-dealer market and a less liquid overall market. A less liquid foreign exchange market would be less efficient and more prone to volatility as large orders have a greater tendency to change market prices. A less liquid market would also be more susceptible to market manipulation. Thus the tax would raise the bid-ask price spread, lower trading volume, lower liquidity and likely lead to greater volatility.

Conclusion

The transactions tax is bad idea politically, administratively and economically. It is bad politically because it is all but impossible. And if possible, then of too high a cost for the benefit that it promises to generate. As a mere source of revenue for development assistance it is an inferior strategy to most other tax regimes, and provides no guarantees that the revenue would be appropriated for development. There is already a large supply of tax revenue in developed countries, the problem has been the inability to direct it towards development purposes and towards development policies that are most effective. Increasing the supply will not necessarily solve the problem of control. Even the most optimistic assessment of the tax proposals claim that it

raises $200 billion? That is only 1% of world tax revenues.[21] So the additional revenue is not necessary to increase development assistance, and there is little reason to conclude that the additional 1% would be spent in any way different from the other 99%.

It is bad administratively because it is all but impossible to implement in an effective manner. It is too big and too vast. There are better, more effective ways to tax speculation through capital gains taxes. We certainly want to avoid creating further incentives to expand the use of tax havens.

It is bad economically because it will not achieve what it promises, and will likely make things worse.

Instead of a transactions tax, there are alternative policies that are more politically feasible, less administratively challenging and most of all more effective at achieving the stated policy goals. If you want to tax speculators, then support a capital gains tax. If you want to help deter or prevent financial market disruptions, then support prudential market regulation. If you want to mitigate the damages of financial market crises when they do occur, then support capital controls. But the transactions tax proposal is a costly distraction from these productive pursuits.

[21] See IMF data for estimate of global government revenues (from non-debt sources).

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4

HOW CAN A CURRENCY TRANSACTION TAX STABILIZE FOREIGN EXCHANGE MARKETS?

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In 1971, after the demise of the international monetary system, the so-called Bretton Woods system that ensured semi-fixed exchange rates thanks to capital controls, James Tobin conceived his now-famous "Tobin tax". Since then, some supporters of his original proposal have introduced some major changes to make it more suited to financial globalization. Paul Bernd Spahn (2002) in particular has proposed a two-tier Currency Transaction Tax (hereafter CTT). The CTT could curb the usual speculation that occurs during "normal times" but also deter big speculative attacks that strike especially, but not exclusively, developing countries. I would add that a fine tuned CTT could discourage, if not suppress, capital flights that plague fragile developing countries before and after the burst of an economic crisis. However it is true that a CTT cannot do everything, but the same is true for every other proposal such as prudential regulations and capital controls. Rather than looking for the fairy's wand, it is wiser to combine a full array of instruments at hand to construct a safe financial environment for economic progressive policies.

The Efficiency of a Two-Tier CTT

As one of the purposes of the CTT is to reduce speculation in currencies, the first simple question we have to consider is: does speculation exist? The question may appear naive, but neither banks, nor their big customers (multinational firms, insurance companies,

mutual funds, pension funds and hedge funds) recognize that they speculate (with the exception of hedge funds). Banks call speculation "proprietary trading" and they conceal the profits (and the losses) they make from it inside otherwise profitable trading books. A whole literature depicts traders' activity as essentially providing liquidity to the market and rendering services to their customers. When they speculate, it is only to assume the risks that other agents don't want to assume. When big speculative attacks lead to a major devaluation of a currency, it is always the government's fault of the affected country. So, it is not useless to assess the importance of speculation.

Does speculation on currencies exist?

The answer must distinguish between ordinary speculation and major speculative attacks that cause strong depreciation of the foreign exchange rate and is often associated with economic crisis.

	INTRADAY	WITHIN 6 MONTHS	OVER SIX MONTHS
Bandwagon effects	29.3	9.5	1
Over-Reaction to news	32.8	0.7	0
Speculative forces	25.3	30.7	3.1
Economic Fundamentals	0.6	31.4	82.5
Technical Trading	10.3	26.3	11.3
Other	1.7	1.5	2.1

Source: Y.W. Cheung, M. D. Chinn, I. W. Marsh, 2000, p 21.

The importance of speculation on a short-term horizon can be best understood thanks to a survey of UK based foreign exchange dealers conducted in 1998 (Y.W. Cheung, M. D. Chinn, I. W. Marsh, 2000). Among other questions, traders were asked to "select the single most important factor that determines exchange rate movements in each of the three horizons listed". The results are presented in the table.[1]

[1] These results are confirmed by two other surveys that asked exactly the same questions to traders and obtained nearly the same results. One by Cheung Y., Chinn, M.D. (2000) is a survey of the U.S. market and the other one by T. Hutcheson (2000) is a survey of the Australian market.

Intraday, over-reaction to news was cited most frequently, closely followed by bandwagons effects[2] and speculative forces. Technical trading[3] is ranked low and economic fundamentals[4] are deemed irrelevant. For example, 61% of the panelists judge that interest rate news is incorporated into the current price within ten seconds of the announcement. The dominant interpretation of the news will create a trend, thanks to bandwagon effects, and speculation will build on it. At medium-run (within 6 months) news ceased to be important as they are already incorporated, while economic fundamentals, speculative forces and technical trading comes to the fore. Over the long run (over 6 months), economic fundamentals are the only factor of real importance.

Speculative forces are then the only factor perceived to have a significant role in determining prices over both the intraday and the 6 months horizons.[5] This raises immediately the question:

Is ordinary speculation destabilizing or stabilizing?

When asked, US traders answer that speculation increases volatility (84%) but at the same time pushes exchange rates toward their fundamental values (61%). "Moreover, speculation is viewed as enhancing market liquidity by 81% and improving market efficiency by 74%" (Y.W. Cheung, M. D. Chinn, 2000, p 15). The increased volatility can be explained by speculators building up and reversing profitable trading positions. Speculators can be seen as improving market efficiency because they are perceived as forcing the currency value to change until it reaches its "fundamental value". And liquidity

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[2] Bandwagon effects come from herd behavior. Each investor is following the actions of others for no reason other than the fact that others are doing it. It creates a new market trend that everybody follows. The interpretation of news together with speculation is at the origin of the phenomenon. It can lead to market prices totally disconnected with economic reality as long as a majority of investors believe in it. Keynes was the first to analyze this phenomenon.

[3] The technical analysis is based on the principle that the observation of past data is a good base for predicting future movements. It tries to establish trends and oscillations around the trend. It uses the chartist analysis and the statistical analysis. Its weakness is that any unpredicted event makes past data irrelevant.

[4] Economic fundamentals comprise a wide range of parameters like interest rates, inflation, the growth rate, the rate of unemployment, the balance of payments, etc. of the major countries. Their interpretation varies according to the socio-political and economic context, the hegemonic ideology and the last fad in neoliberal economic theory.

[5] As we shall see, 6 months is a significant period for firms engaged in international trade or for multinational firms because it can impact their profit published each quarter on the stock exchange.

is apparently increased because the bandwagon effect will attract more dealers to enter the market to trade for the purpose of speculation. Overall, it seems that in the US market, speculation drives foreign exchange rates away from their fundamental values within 6 months, but then brings them back toward their fundamental values.

These survey results are consistent with studies based on econometric investigations. For instance according to Shang-Ji Wei and Jungshik Kim (1997), who study the big banks' trading on the foreign exchange markets, "the data reveals that increases in the absolute value of the positions in spot, forward and futures are associated with increases in the subsequent exchange rate volatility, but not the other way around" (p. 9, underline added). These positions are "likely taken, at least in part, to speculate on the level of exchange rate movements" (p 9).

Other studies[6] found that under 3 months, speculation and bandwagon effects are destabilizing: "An upward blip will generate expectation of further appreciation, leading to buy orders, and thereby contributing to the upward trend" (J. Frankel 1996, p 54). But on a longer horizon, 3 months to one year, there is a twist in expectations. A one percent appreciation generates an expectation of 0.08% depreciation over the coming three months and an expectation of 0.33% over the coming 12 months (J. Frankel 1996, p 54).

So speculation is destabilizing at the short horizon and stabilizing at the medium horizon (between 3 to 6 months). We shall see how these facts fit perfectly well with a theoretical explanation of liquidity, volatility and periods of tranquility of financial markets based on Keynesian conventions. But for the moment, two additional observations are necessary.

First, the results of the destabilizing/stabilizing role of speculation are very dependent on the location of the market. It is probable that in developing countries subject to more frequent and severe crisis, the perception that speculation is stabilizing at the medium term may be less established.

Even in a country like Australia, the results are different. In a recent survey (T. Hutcheson, 2000) "… respondents do not unanimously support speculation as a stabilizing force with 55.6% indicating that speculation mainly moves exchange rates toward their fundamental values and 44.4% indicate that it moves them away." (p. 18). This could be due to the occurrence of several speculative episodes

[6] Frankel and Froot, 1987, 1990; Frankel and Ito, 1989; Chinn and Frankel, 1994.

since the 1970s and especially the destabilizing impact of hedge funds on the Australian dollar in mid 1998 (p 19).

Second, "economic fundamentals" can mean a whole set of different things, far distant from the notion of economic equilibrium. In the neoclassical text books, Purchasing Power Parity (PPP) is deemed to represent the foreign exchange equilibrium in the long run.[7] But the survey shows that only 44.3% of the dealers thought PPP could be used to gauge or predict exchange rate movements over the long run. Less than 27% would sell the US dollar if a PPP-based calculation showed it to be overvalued and 65% would do nothing (Y.W. Cheung, M. D. Chinn, I. W. Marsh, 2000, p 10). Traders, who jointly determine the exchange rate, do not act so as to restore equilibrium but "fundamental values" which are quite different in terms of financial stability.

What is the importance of major speculative attacks?

According to Aart Kray (1999) there have been 308 speculative attacks between January 1960 and April 1999 that struck 75 countries with high and medium per capita GNP, and with a population of at least 1 million people. Of these 308 attacks, 105 succeeded, leading to a depreciation of the exchange rate of more than 10% in a month, while 203 failed.[8] 308 episodes in 39 years make an average of 8 major speculative attacks per year, 3 of them being a "success" and 5 a failure. But in both cases, the damage is done. The country will increase its interest rate to skyrocketing levels provoking a recession with its dramatic consequences on employment and welfare. And generally, this sacrifice is useless because interest rates increases are not sufficient to dampen speculation and capital flight.

So there is a case for a permanent preventive protection that would be efficient against ordinary speculation and speculative attacks avoiding excessive interest rate increases, and even allowing interest

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[7] The Purchasing Power Parity (PPP) theory asserts that, in the long run (3 to 6 years) the exchange rate between two currencies should move toward the rate that equalizes the price of identical baskets of goods in each country. It is difficult to establish a basket of goods of reference, because consumers' taste are different from one country to another, the *Economist* magazine has popularized the PPP by calculating a "Big Mac" exchange rate index each year. The flaw of the PPP theory is that there is no reason why the same good should have the same price because of imperfect competition at the world level.

[8] Speculative attacks are defined in a restrictive sense. In the 12 previous months, the fluctuation of the exchange rate must not have exceeded 2.5% on average, in order to be sure to identify "pure" speculative attacks. Also, when two attacks occur in one year, only one is registered in order to avoid double accounting.

rate decrease in periods of tranquility. In a context of financial globalization, the CTT can be an appropriate shield against the danger of free capital movements. In a period of crisis, it could be completed, if necessary, by other capital controls measures.

How does the CTT work?

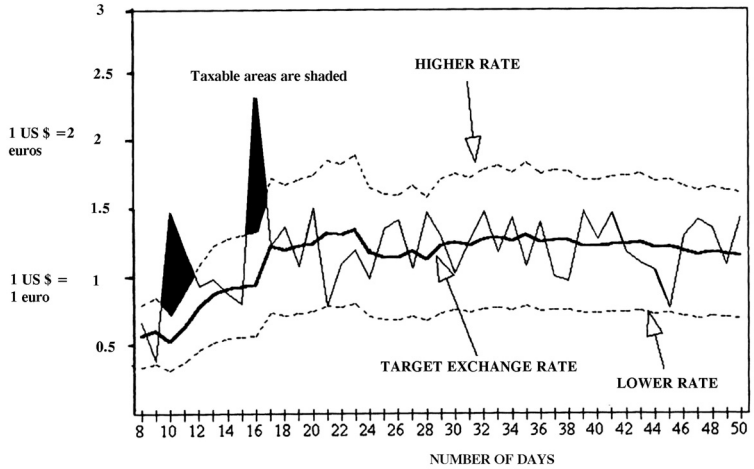
The basic principle is the following: as long as the daily fluctuations of the exchange rate remain small a small tax is applied to the currency transaction. If the daily fluctuations go beyond a predetermined threshold a surcharge is applied. The following chart illustrates how it works. Let's consider the US dollar against the euro market. The foreign exchange rate between the two currencies fluctuates everyday as it is shown. It is possible to calculate the average on the last 20 days, 30 days, or on even longer spans. As the foreign exchange fluctuates every day, the average will change in accordance (hence the name "moving average"). From then it is possible to determine each day an upper limit of approximately 2.5% above the average and a lower limit of 2.5% under the average that creates a band of fluctuations of 5%. As long as the exchange rate determined by the market stays inside the band, a small "normal" tax is applied on each transaction.

What would be the level of the ordinary tax rate and who should pay the tax?

Paul Bernd Sphan advocates a very small tax from 0.005% up to 0.01%. This is because banks are the only economic agents making transactions on the gross foreign exchange markets. For this reason, they should pay the tax. Since the transaction fee they charge for an interbank transaction on the Euro-Dollar market (the bigger one) is on average 0.01%, the tax should not exceed this amount and should probably be lower.

I support a higher ordinary tax of 0.1% because it is the transaction fee charged by banks to their large customers such as multinational firms, insurance companies, mutual, pension and hedge funds. Speculators are not an easily identifiable group of villains. Since the banks and their customers are all speculators the ordinary tax should be paid by all of them. Only small firms and households should be exempted from the tax if their transactions do not exceed a certain amount.

ILLUSTRATION OF THE WORKING OF THE EXCHANGE SURCHARGE



SOURCE: "ON THE FEASIBILITY OF A TAX ON FOREIGN EXCHANGE TRANSACTIONS". PAUL BERND SPAHN, (2002), pspahn@wiwi.uni-frankfurt.de

What would be the purpose of the "normal" tax?

The "normal" tax has a fiscal function. According to my own calculations, a 0.1% tax would generate annual revenues of US $116 billions per year.[9] That compares with the extra US $80 billions needed each year for financing the millennium development goals, and the US $30 billions needed for financing global public goods.

The ordinary tax would also smooth the daily fluctuations of the foreign exchange rate. As we have seen, most of the transactions are not justified by customer orders but by news that fuel speculation and bandwagon effects. "This has the following consequence: a rise in price generates a larger rise in expected price; leading to increased demand now in anticipation of higher future prices, thereby exacerbating the rise in price. This phenomenon of destabilizing speculation can be observed at short term horizons, a few hours up to 3 months to 6 months, according to empirical surveys of the foreign exchange markets "(J. Frankel, 1996).[10] After the 3 to 6 months

[9] Under the following conditions: Transactions costs are 0.1% (those charged to customers), the volume elasticity is –0.5, fiscal evasion is 20% of the market, and 10% is deducted for official transactions which are exempted. The annual volume of the market is US $321.5 trillions in 2001 according to the BIS. For further details, see B. Jetin (2002), chapter 2.

[10] For empirical surveys, see J. Frankel and K.A. Froot, 1987, 1990; K.A. Froot and T. Ito, 1989, M. Chinn and J. Frankel, 1994, Y.-Wong Cheung, M. D. Chinn, I. W. Marsh, (2000).

periods, there is a switch in traders' anticipations. Traders expect a depreciation in the coming months toward a "fundamental value" in the very broad sense.[11] The CTT is expected to work in the following manner: "a rise in the exchange rate above its "norms" would not lead agents to expect further rises (…) because they would see the tax as operating as a disincentive to the market activity necessary to produce such a rise" (P. Arestis, M. Sawyer, 1997, p 760, see also J. Frankel, 1996, pp 54-59). Short-term speculators would be affected by the tax but not long-term investors who would benefit from stability. This is exactly the objective pursued by J.M. Keynes and J. Tobin. The CTT can be seen as an "uncertainty-reducing-institution" (P. Arestis and M. Sawyer, 1997, p 760) stemming destabilization through its effect on agents' expectations. In this sense it has the same advantage as prudential regulations advocated by R. Dodd (2002).

But if the "normal" tax proves insufficient because speculators bet on big profits in the coming three or four weeks, and not on small profits coming from intraday fluctuations between the Euro and the US dollar each day of the year, then a surcharge will be automatically applied. This occurs when the daily foreign exchange rate reaches the upper or lower limit of the band. The surcharge (50%, 100%, or more) will be calculated on the difference between the exchange rate outside the band (for example $1 = 2.4 euros on the 16th day on the chart) and the upper limit of the exchange rate (around 1.3 euros for $1 on the chart) multiplied by the amount of money traded this day by the speculator. Speculation is defined precisely as trading outside the band and the objective of the surcharge is to penalize it with a punitive tax that will cut the speculative profit. If the mechanism is announced in advance it should discourage speculators and if not, it will punish them until they trade inside the band. The punitive rate can lead to a temporary closing of the foreign exchange market similar to the way the circuit breakers enforce on the US stock exchanges. Since 1989, computers are automatically disconnected whenever the share prices move up or down by more than 10%. It avoids a crack and gives time for economic agents to change their mind. But the difference with the stock exchange circuit breakers is that speculators on the foreign exchange markets who trade outside the band have to pay a prohibitive tax.

The CTT could be implemented by the US alone if they wanted to, or by a significant group of countries like the European Union (EU), or

[11] As we have already said, fundamental values and equilibrium are two different things. This leaves room for a Keynesian interpretation where the "fundamental value" is nothing else than what average opinion believes what average opinion to be.

regional unions of developing countries like the Mercosur, or a possible Asian monetary union. The major interest is to give back the necessary autonomy to national economic and social policies that existed during the Bretton Woods era.

Some Responses to the Criticisms

One frequent criticism is that the CTT is too high during "normal" times and too low in case of a major speculative attack.

This criticism is right as far as the original "Tobin tax" is concerned, because there was only one small tax for any kind of speculation. The two-tier CTT was designed precisely by P.B. Spahn to address this criticism.

We have already explained how a prohibitive surcharge can be the appropriate answer to speculative attacks expecting big profit in a short period of time. We will return to this question below to show that the surcharge can also contribute to dampen capital flight. Here we will focus on the accusation that the ordinary tax is too high during periods of financial tranquility.

The "ordinary tax" is considered too high by some, for example, in 2001 58.7% of the transactions occurred between dealers and these transactions were critical in maintaining market liquidity. According to the "hot potato principle", when a dealer receives a certain amount of a currency from a customer, he does not necessarily need it and holding it is costly and risky. He will try to sell the full amount or part of it directly to another customer or to another dealer who will sell it again to another for the same reason and so on. It is estimated that the chain involves 4 to 5 dealers until a final customer is found. These transactions are now made with a nearly zero transaction cost thanks to computers. This is the way liquidity is created and risk fractioned and disseminated through the market. In this ideal world, the ordinary tax will destroy the market because it will prevent the dealers from selling the currencies they receive to other dealers.

First, it is important to remember that during the seventies or eighties, transactions costs between dealers were much higher (0.5% to 1%) and it was not an obstacle to transactions. So, one should not overemphasize this argument.

Second, P.B. Spahn's original proposal is a nearly zero rate (half a basis point or 0.005%) precisely to preserve market liquidity when the tax is borne by traders while at the same time eliminating some of the destabilizing noise trading. A higher tax of 0.1% (10 basis points)

would not cause the foretold chaos. Part of the tax would be shifted to final customers, which now accounts for 41.3% of the transactions (against 30.4% in 1992). Competition between banks will decide more precisely how much will be borne by dealers (mostly big banks) and how much by their final customers (other financial institutions and non financial institutions). But in any case, remember that the rate of the ordinary tax is a purely empirical question. If, by experience, it appears too high, then it can be lowered. If it appears too low, it can be increased.

Thus, interdealer transactions will still be possible. It is only when dealers will speculate on their own account that they will have to pay the full amount of the tax.

Third, the way the foreign exchange market works is changing. The description made by R. Dodd (2003, see his chapter in this volume) does not take into account the decline of interdealer transactions from 69.6% in 1992 to 58.7% in 2001.[12]

One reason for this decline is due to the consolidation process in the banking industry from 3,087 reporting banks for the 1998 BIS survey from 43 countries to 2,772 in 48 countries for the 2001 BIS survey and the growing share of electronic broking in the spot interbank market. So the "hot potato chain" is shortening spontaneously and no one has cried wolf for fear of reduced liquidity.

A second reason for the decline is the progress of electronic trading. According to G. Galati and K. Tsatsaronis (2001), in 2000 85%-95% of interbank trading in the major currencies was said to be conducted using electronic brokers, compared to about 50% in 1998 and 20%-30% in 1995. Before electronic brokerage, dealers tended to execute small trades regularly throughout the trading session to gather information about the current price and be continuously informed. "In 2001, any dealing room with an EBS terminal instantly knows the current dollar price of the euro and yen, certainly for trades of the size typically dealt through EBS"[13] (A. Chaboud, S. Weinberg, 2003). This means that the decrease in volume implied by the CTT won't alter the price discovery process, because this one has already changed by itself through the implementation of technical progress.

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[12] During the same period, the transactions made between dealers and other financial customers increased from 12.5% in 1992 to 28% 2001, which reflects the increasing role of asset managers, while transactions with non-financial customers declined from 17.6% (according to the final data of the 2001 BIS triennial study of the foreign exchange market).

[13] Electronic Broking Service (EBS) is an electronic broker formed by a large group of dealing banks in 1993. It covers mostly trades in the dollar, euro, yen and Swiss franc. The other electronic broker, Reuters covers mostly transactions involving sterling.

As a consequence, trading is moving from bilateral over the counter (OTC) relationship towards a market place with more centralized price discovery and transparency (BIS, CGFS, 2001, p 1). So far, these trends have only affected the interdealer market (banks and brokers) and not much the dealer-to-customer market. But this could change. Electronic trading makes it technically feasible for the market structure to move to a centralized order book where final customers can transact directly with each other. Trading platforms[14] have appeared on the dealer-to-customer market. Banks are resisting this trend because they have a vested interest in the current segmented market but the balance of power seems to be shifting in favor of final customers. We are seeing a move from single- to multiple-dealers sites where dealers are put in more direct competition with each other for customer business. "Some market participants noted it is a matter of time before trading in these products (foreign exchange and sovereign bonds) takes place on a platform to which dealers and end-users have equal access" (BIS, CGFS, 2001, p 15). If so, a centralized customer-driven market could expand at the expense of the present decentralized dealer-drive market. The foreign exchange market would become closer to a stock exchange and the provision of liquidity by customers through limit order books would substitute for the current interdealer mechanism of risk-sharing. The "hot potato chain" would be shortened even more allowing customers to get into contact more directly, although dealers would not disappear totally.

The CTT would accelerate this trend because each participant would want to reduce the number of transactions in order to reduce the times they pay the tax (J. Frankel, 1996, p 66).

Would a much more centralized market be for the better or for the worse? It is difficult to answer this question because the theoretical literature is inconclusive. One may say that a lower number of dealers especially market-makers will reduce liquidity especially in times of stress. "However it is not so obvious from previous examples of market turbulence that market-makers did provide liquidity when it was required. There have been cases in various volatile markets where market-makers simply stopped answering their phones. Ultimate liquidity may be provided by those end-users able to take a long-term view because they are neither leveraged nor subject to daily marking to

[14] A trading platform is an infrastructure or mechanism aimed at facilitating securities or foreign exchanges transactions between those who wish to buy and sell. A trading platform could be a legal entity recognized as an exchange or an integrated part of a stock exchange.

market" (BIS, CGFS, 2001, p 20). The CTT has exactly this objective of increasing the weight of long-term horizons propitious to stability.

The CTT will reduce market liquidity and reinforce volatility

Whatever the tax rate and whoever pays it, there will be a reduction of the number of transactions and liquidity will shrink. Since liquidity is necessary to stability, the tax will increase volatility.

To respond to this seemingly simple criticism, one has to define more precisely, if possible, what is liquidity. There are two interlinked but distinct aspects in liquidity. The first is what I would call the "technical liquidity" and the second the "economical liquidity".

The "technical liquidity" can be defined by the depth, the tightness and the resilience of the market, as analyzed by the Bank of International Settlement (BIS). "Depth denotes either the volume of trades possible without affecting prevailing market prices, or either the amount of orders on the order-books of market-makers at a given time". Tightness is a measure of liquidity derived from the bid-ask spread (difference between buying and selling quotes). "Resiliency refers to the speed with which price fluctuations resulting from trades are dissipated, or the speed with which imbalances in order flows are adjusted". (BIS, 1999, p 5).

A fine tuned CTT would not reduce the depth of the market, i.e. its capacity to absorb large trades. It would increase the bid-ask spread because the difference between buying and selling prices includes all transaction costs and the tax will increase them. But the major component of the bid-ask spread is the risk premium that reflects the uncertainty of the market usually measured by volatility. As long as the tax will reduce volatility, it will reduce the risk premium. So, overall there must be compensation. For the same reason, resilience should be improved because the pre-announced automatic two-tier mechanism will reinforce market capacity to return to normal conditions. So the "technical liquidity" should be preserved.

The "economical liquidity" refers to economic factors that affect liquidity. Most of the studies cause confusion between volume (depth) and liquidity, and pretend that a very voluminous (liquid) market is a guarantee for stability.

That is simply not true. Peter Martin (2002), the famous *Financial Times* columnist, cannot be suspected of sympathy for anti-globalists, makes a distinction between an "… acceptably liquid market - one in which there is active trading, so you can deal in size without moving the price against you…" and "… super liquid markets that do not bring

extra benefits". "Indeed, they may produce perverse effects such as a high degree of short-term volatility that makes trading appear more attractive-sucking in more briefly lucky fools. It also encourages the belief that you can always trade your way out of a tricky position". Super liquidity also leads to large losses for banks.[15] Peter Martin believes that James Tobin's solution is unlikely to happen. So his remedy to trading losses is very simple although never mentioned: "stop trading".

I think that Peter Martin's remedy is right--we must reduce the excessive liquidity--but it is also unlikely to happen spontaneously. Since the decline of their traditional lending activity, currency trading represents up to 50% of bank profits (H. Ramcharran, 2000). Competition pushes them to engage in even more trading to present the most brilliant financial results to their shareholders, and traders are encouraged to speculate by the promise of huge bonuses if a risky position pays off. So, one cannot expect banks to take the initiative to stop speculating and prudential regulations, if necessary, are not sufficient simply because they are violated when they are not binding.[16]

What is in fact the true guarantee for stability is the heterogeneity of beliefs and anticipations. That was precisely J.M. Keynes 's opinion: "It is interesting that the stability of the system and its sensitiveness to changes in the quantity of money should be so dependent on the existence of a *variety* of opinion about what is uncertain"[17] (J.M. Keynes, chapter 14, 1936).

Heterogeneity ensures that there will always be a buyer and a seller, but there is no linear relation between market volume, (the number of investors and the number of transactions they make), and the diversity of beliefs. Of course, the probability for a seller to always find

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[15] "The $750 millions losses attributable to John Rusnak, Allied Irish Bank's alleged rogue trader, are by no means a record. Toshidhide Iguchi, of Daiwa Bank, lost 1.1 billion over 11 years. Robert Citron, Orange County's Treasurer, lost US $1.6 billion. Showa Shell Sekiyu, Shell's Japanese affiliate, lost US $1.5 billion in the early 1990s". (P. Martin, 2002).

[16] See the exemplary case of John Rusnak, who was hired as a foreign exchange speculator by AIB, in 1993. In 1994, he had already breached his limits in 1994, then hid his losses by constructing bogus option trades that apparently offset those that were genuine, and was able to manipulate prices fed from Reuters, since they came into Allfirst through his computer. His traded conversations were not even recorded. (*The Economist*, 2002).

[17] And he added: "Best of all that we should know the future. But if not, then, if we are to control the activity of the economic system by changing the quantity of money, it is important that opinions should differ. Thus this method of control is more precarious in the United States, where everyone tends to hold the same opinion at the same time, than in England where differences of opinion are more usual".

a buyer is low when the market is very thin. Contrary to common sense, beyond a certain threshold, which is probably what I call the "technical liquidity", the probability that diversity increases becomes small.

This is because usually, when there is one more investor inside the market, it is rational for him to follow the mood. If the market is bearish, he will be a bear. If the market is bullish, he will be a bull. There can be a time lag between the arrival of a new investor on the market and the moment when he follows the trend. The new comer has to discover and learn market reality. But unless he systematically has better information or is risk prone, he will sooner or later follow the trend. Herd behavior models have shown why it is rational and less costly for an individual to follow the decision of a large number of people ahead of him without looking at his own private information (information-based herding). Another type of model is based on the "sharing-the-blame" effect. "Dumb" investment managers will always want to hide and disguise their inability and are therefore likely to imitate the "smart" investment managers and take action in conformity. If everyone gets it wrong at the same time, smart investors have an excuse to conceal their mistakes, by saying that the outcome was unexpected.

In times of market stress, the combination of short-termism, herding behavior and a generalized use of similar risk management techniques could amplify the homogeneity of behaviors and contribute to financial crisis. Variety in opinions disappears when it is most needed, i.e. during the crack. In this circumstance liquidity vanishes, proving how much liquidity is an institutional construction and not a natural feature (A. Orléan, 1999).

In the absence of an international coordination of economic policy, the two-tier CTT cannot work miracles. It would not have stopped the decline of the US dollar and the increase of the euro. But it could have slowed down the process, giving more time for firms to adapt to the new exchange rates, especially for those who cannot hedge against exchange rate fluctuations. As we shall see below, it is not a marginal question.

But, in this new period of uncertainty, the contribution of the CTT could be to prevent excessive fluctuations due to speculation. The re-established relationship between interest rate differentials and exchange rate movements promoted the return of leveraged speculative players to the foreign exchange markets. Macro hedge funds, which were said to have disappeared form the foreign exchange markets during the 1990s, were drawn in as a result of the lackluster performance of stock markets. Hedge funds and other institutional investors were borrowing

funds in countries where interest rates were low to invest them in countries where they were high (the so-called carry trade strategies). At the end of 2000 and throughout 2001, the yen was depreciating against the US dollar while at the same time the short-term interest rate were around 6 to 7% higher in the US vis-à-vis Japan. It was very profitable to borrow in yen and invest in dollars. As a consequence, the yen appreciated sharply in 2002. The same speculative episode had occurred in the fall of 1998 provoking a very strong short-term volatility. In October 1998, the dollar/yen rate decreased from ¥ 133 to ¥ 112 in less than 48 hours. Worse, between 1997-2000, there have been three more main stress events (May 1997, September 1999, and October 1999), i.e. increases of 10% of the yen vis-à-vis the US dollar in one day, when speculators unwound their positions in the US, selling the US dollar and buying yen.

The same carry trade strategy has also been observed on the foreign exchange markets of other industrial countries such as the non-EMU countries, Australia, New Zealand and Canada. According to the BIS (2003, p 87-88) the most striking example is the Norwegian krone. Hedge funds and other institutional investors were borrowing funds in euros and investing them in short-term Norwegian Papers. The krone strengthened 11% against the euro and 29% against the dollar throughout 2002 and peaked in January 2003, forcing the central bank to cut interest rates. Carry trade was also significant for some emerging market currencies like the South African rand, and the Brazilian real.

How can we strengthen the heterogeneity of beliefs and anticipations to favor a relative stability?

The solution is to support the existing convention, which is the true guarantee of the diversity of beliefs. The market will always determine endogenously a convention, based on the interpretation of the fundamentals that investors make at the moment. But the problem is that this convention can be established on a wrong basis, for instance, a false belief in the "new economy", or the "strong dollar politics" or "huge twin deficits". This is why it is preferable for the State to try to establish the appropriate convention through a sound and credible economic policy. J. M. Keynes considered this possibility when he explains how the State can lower the long-term interest rate step by step.[18]

[18] Like equity prices or the foreign exchange rate, the long-term interest rate is defined by J.M. Keynes as a "highly conventional phenomenon" (see chapter 15).

> *"Such comfort as we can fairly take from more encouraging reflections must be drawn from the hope that, precisely because the convention is not rooted in secure knowledge, it will not be always unduly resistant to a modest measure of persistence and consistency of purpose by the monetary authority. Public opinion can be fairly rapidly accustomed to a modest fall in the rate of interest and the conventional expectation of the future may be modified accordingly; thus preparing the way for a further movement — up to a point. The fall in the long-term rate of interest in Great Britain after her departure from the gold standard provides an interesting example of this; — the major movements were effected by a series of discontinuous jumps, as the liquidity function of the public, having become accustomed to each successive reduction, became ready to respond to some new incentive in the news or in the policy of the authorities". (J.M. KEYNES, 1936, chapter 15, section 2).*

These lines were written in the 1930s, when it was still possible for the state to define the appropriate national economic policy without the fear of capital flight. Now that governments have decided to give capital the full liberty to travel from one country to another, it is no longer credible to contemplate a progressive economic policy that would be only based on a patient and gradual endeavor to convince investors to adopt the desired interest rate or foreign exchange rate. The only economic policy that markets are spontaneously ready to accept is the neoliberal one. So if we want a progressive economic policy to be adopted, say a full employment policy with the adequate interest rate, free movements of capital must be restricted, and there must be a strong commitment by the State to enforce its policy. If this policy is a good one, for instance, full employment creates a self-sustained growth process, then it will turn into a credible norm, or in other terms what I call a "good" convention.

The two-tier CTT can be an efficient institutional support for such a "good" convention once established by the State. It will convince investors that the daily fluctuations of the exchange rate will stay inside the normal limits tolerated by the convention and protected by the CTT. To paraphrase J.M. Keynes, *any* level of a conventional price (the rate of interest, the foreign exchange rate, or even the anticipated profit) which is accepted with sufficient conviction as *likely* to be durable will

be durable.[19] To conclude on this point, we can say that the CTT can extend the life of conventions.

Is foreign exchange market volatility only important for developing countries or does it also concern developed countries like the US?

One may think that fluctuations between major currencies are not important because short-term volatility is limited and speculative attacks are rare. A second reason is that the impact of exchange-rate fluctuations on domestic inflation is sometimes weak.[20] A third reason is the difficulty in identifying a large and negative effect of exchange rate volatility on trade. And finally, firms are supposed to hedge against foreign exchange rate volatility by buying foreign exchange derivatives.

There is no consensus to date among economists on how exchange-rate volatility influences trade volume from either a theoretical or an empirical perspective. But most of these studies with mixed results have focused on developed countries while developing countries received little attention.

However, it appears that for developing countries exchange rate volatility is a concern. For instance, K. Doroodian (1999) found that exchange rate volatility has a negative and significant effect on trade flows in the case of India, South Korea and Malaysia. Another recent study shows that "… the rise in exchange rate volatility had adverse consequences on both exports and imports of Thailand with the Japanese market, and the imports of Thailand from the US during the period of two decades before the break of the 1997 East Asian financial crisis" (T. Rahmastsyah et al., 2002). However less conclusive evidence was found for Thailand's exports to the US market.

To alleviate these adverse consequences on trade, developing countries cannot rely on hedging instruments. These instruments are not available in the less developed countries, and when they are available, their use is limited because of the high-risk premium associated with them due to persistently high domestic interest rate and very thin markets. As a consequence, most developing countries are exposed to currency risk and forced to peg their currency to the US dollar, and, less frequently, to the euro.

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[19] "*Any* level of interest which is accepted with sufficient conviction as *likely* to be durable will be durable" (J.M. Keynes, 1936, chapter 15).

[20] The academic literature calls this impact the "pass-through" effect. Exchange rate "pass-through" denotes the impact of a change in the exchange rate between exporting and importing countries on local-currency prices of imports.

Does it mean that developed countries are immune to foreign exchange-rate volatility?

The answer is negative. Exchange rate fluctuations between the euro, the US dollar and the yen are not so negligible. In the US and the United Kingdom, exchange rate changes are not fully passed through to domestic goods prices and have little effect on the behavior of final purchasers.[21] But if the decrease of the US dollar raises the cost of an imported good, without the possibility of the importer to increase the price in the same proportion on the US market, its profit shrinks.[22] This profit risk can be hedged using appropriate financial instruments, but these hedging instruments provided by their sophisticated financial markets are not a panacea.

Let's hear what the professionals from the banking and corporate world have to say.

According to Merrill Lynch & Co Chief Economist, "the decline in the euro cut Standard & Poor's 500 companies' profit by at least 3% in the third quarter of 2000, which compares to a negligible impact of 0% to 1% a year over the previous two years".

The consequence is the following: "As the euro dropped in value, hedging programs grew increasingly expensive; heightened volatility sent the cost of options and forward contracts skyrocketing". Many firms decided to remain unhedged (S. Mc Murray, 2000).

Business Week (2000) draws the same picture. "Each quarter, US corporations must tally their foreign revenues and earnings and then translate them into dollars. So if a company earns 1 million euros, but the euro's value drops from $1 per euro to 90 cents, they would be worth only $900,000, not $1 million. An option to sell euros at $1 each would avert the loss. But hedging isn't cheap. According to Goldman, Sachs & Co., hedging $500 million worth of earnings cost about $26 million".

This may explain why few US firms are hedged and why they don't hedge 100%.

According to a recent survey (G. Bodnar, R. C. Marston, 1998), only 50% of US firms report using derivatives. The use of derivatives is

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[21] J.M. Campa and L. S. Goldberg (2002) show that the US has among the lowest pass-through rates in the OECD, at about 25% in the short run and 40% in the longer run. It means that a 1% dollar depreciation would translate in a 0.25% increase in import prices. But the average for the OECD countries is much higher, 60% over one quarter and about 75% over the long term. For Germany these figures are respectively 60% and 80%, and for Japan, 0.88% and 1.26%. What's more, countries with more nominal exchange rate volatility have higher pass-through rates.

[22] The responsiveness of profits to changes in exchange rates is called the "exposure" in the academic literature.

much higher among large firms (83%) than among small firms (12%). This shows that small and medium US firms cannot avoid the adverse effect of exchange rate volatility on their profit to the contrary of big and often multinational firms. These multinational firms have also the possibility to hedge by arranging anticipated currencies purchase or sell between their subsidiaries (the so called "natural hedging).

Among firms with significant foreign exchange exposure that regularly hedge, partial hedging is the normal practice. Less important exposures are hedged less than 25% and the three more important exposures are hedged less than 50%. Hedging instruments are often available only for short horizons. 82% of firms utilize foreign currency derivatives with an original maturity of 90 days or less.

Even mutual funds and other institutional investors, which manage a large proportion of U.S. foreign equity investments don't hedge a lot. Levich et al. (1999) surveyed 298 U.S. institutional investors and found that more than 20% were not even permitted to hold derivative contracts in their investment portfolio. A further 25% of institutional investors were formally unconstrained, but did not trade in derivatives. The remaining 55% hedged only a minor proportion of their foreign exchange exposure.

To summarize, exposure to foreign exchange risk is not negligible even for US firms and financial instruments are not a sufficient protection.

CTT is Good Policy and Good Politics

The CTT will be confronted by an immense opposition. It is smarter to fight battles we can surely win. Easily attainable reforms are preferable.[23]

Yes, the CTT will meet a formidable resistance organized by those who have much to lose. The opponents of the CTT are richer and more powerful. But isn't it true for the great majority of reforms we would like to be adopted? Do we always renounce for this reason? If we restrict our ambitions to what can be easily achieved, then the scope of our ambitions will narrow even more because our opponents are reducing every day what is politically reasonable to achieve in a neoliberal world.

For example, we can all agree that it would be a good complementary measure to increase the capital gain tax as proposed by

[23] See R. Dodd 2003, in this issue.

R. Dodd. But is it still reasonable after the tax cut program of the Bush administration?

Capital controls are needed when every other preventive measure has proven insufficient to stop the build up of a financial crisis and the associated capital flight. But again, can we seriously think that the opposition to capital controls will not be immense?

Even if no decisive progress has been made in favor of the CTT, some significant progress has been achieved. The French Parliament has passed a law in December 2001, in favor of the CTT. The law says that the CTT will be implemented as soon as the other EU countries will adopt it. The Belgium Parliament is on the verge to adopt a two-tier CTT, in the same conditions as France. The Italian Parliament will have to discuss a bill after ATTAC Italy gathered 30,000 citizens' signatures on a petition in favor of the CTT. In February 2003, the Indian Prime Minister, Atal Behari Vajpayee, called for a tax on international currency transactions to protect the world's developing economies**.** "I believe this (levy) is a reform whose time has come," he said on the eve of the 114-nation Non-Aligned Movement (NAM) summit in Malaysia. "It combines in one effective measure an instrument to protect weak economies from the volatility of capital, to enhance investor confidence through stability of capital markets and to generate valuable developmental resources". These are only first steps and we still have a long way to go. But it shows that there is political support for the CTT.

An international treaty should establish the CTT. The more global the better. But it does not mean that it should be global right from the start. A group of countries, probably located in the same continent, could take the initiative. It could be the EU because it has the same economic weight as the US and because around 50% of the foreign exchange markets are located there (UK and Switzerland included). Developing countries from Africa, Latin America (Brazil) and Asia could join in.

If the tax were imposed in only one part of the world, it would be an incentive to relocate trading into untaxed countries, in particular in off shore tax havens that serve as a conduit for terrorist financing. [24]

There is a solution to the problem of relocation and off shore tax havens.

[24] See R. Dodd 2003, in this issue.

First. If tax havens are so attractive, why is the vast majority of the financial system of the world still located in a few developed countries plus Singapore and Hong-Kong?

Because geography still matters. Financial centers are natural monopolies (e.g. London and the Greenwich meridian). And they need external economies: infrastructures, lawyers, traders, computer engineers, and even economists. All these well paid people need a nice place to live in and spend their money.[25] And, finally, because all major financial centers need to be in the proximity of political centers of power.

If it was only a matter of transaction costs, and of costs in general, why is London, one of the most expensive cities of the world, one of the major financial centers?

Second. Currencies can be transacted everywhere, even in offshore tax havens or untaxed countries in general. When a transaction in US dollars is settled, US dollars will be transferred from one bank established in the US to another bank established in the US even if the trade was negotiated in Singapore. If US banks go the Cayman Islands, the US dollar they transact will stay in the US. They won't be settled in the Cayman Island but in the US through the use of correspondent banks.[26] These correspondent banks will transfer the dollars in the US through CHIPS the most important private clearinghouse[27] in the US, and FEDWIRE, the official Real Gross Time Settlement System (RTGS),[28] which provides a totally secure environment for the transfer of huge amounts of cash.

According to an official report (C. Levin, 2001), the correspondent banks are the "vital blood" of offshore paradise. Banks in offshore paradise are empty shells. They don't have the necessary competencies and infrastructure. Without their linkage with their correspondent banks

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[25] The government of Singapore has recently announced that it would allow discotheques to stay open late at night in order to attract more foreign investments.

[26] Correspondent banking is "an arrangement under which one bank provides payment services and other services to another bank", usually across international boundaries. (ECB, bluebook, 2001).

[27] A clearinghouse is a "department of an exchange or a separate legal entity which provides a range of services related to the clearing and settlement of transactions and payments and to the management of risks associated with the resulting contract. In many cases, the clearing house acts as the central counterparty". (ECB Bluebook, June 2001).

[28] An approved Real-Time Gross Settlement System is a system in which processing and settlement with finality takes place continuously in real time across Central Bank accounts. It is called Fedwire in the US and Target in the EU.

in the US, in Europe, etc., they cannot get access to the vast legal financial systems of these countries.

More important, countries have the right to cut off the access to their national financial system. In the US, this regulation exists:

"To enforce these regulations, the Federal Reserve reserves the right to prohibit the use of the Federal Reserve payment services to support fund transfers that are used to settle, directly or indirectly, obligations on large-dollar multilateral netting systems that do not meet the Lamfalussy Minimum Standards…. No future or existing privately operated large-dollar multilateral netting system will be permitted to settle on the books of a Federal Reserve Bank unless its participants authorizes the system to provide position data to the Reserve Bank on order" (Federal Reserve, 1994).[29]

The UK has the same regulation. These threats were decisive for the adoption of the Basle Accord.

The Kerry Amendment to 1988 Anti-Drug abuse empowered the US government to cut foreigners off from the access to the US financial system, including its clearing system, if their government refused to reach specific anti-money laundering agreements with the US treasury. (Eric Heillener, 2000).

All these regulations could be used to enforce the CTT if it was part of the financial and banking rules and regulations.

It is exactly at the settlement point that the bulk of foreign exchange transactions will be taxed, when they are netted through CHIPS or when they enter the Real Gross Time Settlement System.

As for the possibility that clearinghouses could be relocated in tax havens, (see R. Dodd, 2003), it is simply unbelievable. Not only these clearinghouses need very huge investments in computer systems and telecommunication infrastructures, but, more important, they need the juridical security and the financial backing provided by the central banks of the country where they are located. An American bank will accept to transfer US $20 millions on the US territory because it knows that if necessary the FED will act as a lender of last resort. The Cayman Islands' central bank cannot be a credible lender of last resort for that matter.

Is it by accident that CLS,[30] the new international clearinghouse that settles the great majority of foreign exchange trade throughout the world is located in London and New York?

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[29] Quoted by R. Schmidt, 2001.

[30] CLS stands for Continuous Link Settlement. CLS was funded by 66 major international banks in 16 countries and seven central banks, including the Federal Reserve. Since September 2002, it provides for a simultaneous exchange of the

As for derivatives, those that are traded on a clearinghouse can be easily taxed. OTC derivatives products, which are not settled, will be taxed at the point of negotiation. The progress in straight-through-processing will make it easier. For those OTC that are processed manually, the master agreement leaves a trace that the fiscal authorities can check. Trading through telephone is also taped and therefore leaves a trace. This does not mean that fiscal authorities will check every transaction. Not only would it be unfeasible but also unnecessary. How many banks would risk their reputation and relationship with their government to avoid an ordinary small tax?

In summary, there are no major technical problems to collect the CTT and it is even easier for STETS because equities are traded on stocks exchanges and usually settled by the same firms that managed the transactions.

Conclusion

In this paper, we have tried to demonstrate that the CTT can be a useful instrument against speculation. It could also dampen capital flight and therefore contribute to the prevention of financial crisis together with more comprehensive capital controls measures. It could stimulate economic cooperation at the regional level and therefore be a major step toward a new "developmentalist financial architecture" (I. Grabel, 2003b). It could also be useful to developed countries like the US and the EU and finally, it could generate huge revenues for financing development, universal access to social services, and global public goods.

For these reasons, it is worth supporting the CTT and other global taxes.

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currencies in each foreign exchange contract to eliminate settlement risk. CLS Bank is based in New York. It is a special purpose bank supervised by the Federal Reserve.

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5

SECURITIES TRANSACTION TAXES AND FINANCIAL MARKETS

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This paper argues that that transaction taxes can have negative effects on price discovery, volatility, and market liquidity in securities markets. These effects can lead to a reduction in market efficiency and may contribute to increased asset price volatility.

Financial markets transform latent demands of investors into realized financial transactions. Securities transaction taxes (STTs) alter this transformation. Proponents of STTs argue that such taxes can reduce market volatility, help to prevent financial crises, and reduce excessive trading. Opponents believe that STTs are difficult to implement and enforce and that they can do great damage to financial markets.

This paper considers the impact of transaction taxes on financial markets in the context of four broad questions. How important is trading? What causes price volatility? How are prices formed? How valuable is the volume of transactions? These questions are at the core of the debate on the role of transaction taxes. Our arguments draw on

[1] We thank Stefan Ingves, Kristin Forbes, Patrick Honohan, Richard Lyons, and participants at the 2001 Australasian Finance and Banking conference, 2002 World Bank Workshop on the Taxation of Financial Intermediation, and the 2002 IMF Research Conference. The views expressed in the paper are our own and not necessarily the official position of the International Monetary Fund.

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research on market microstructure, asset pricing, rational expectations, and international finance.

Market microstructure studies suggest that trading is essential for price discovery--the process of finding market clearing prices. A large number of markets rely on dealers to provide price discovery as well as liquidity and price stabilization. Levying STTs on the dealers inhibits their ability to assist investors with the transformation of latent demands into realized transactions. The literature also finds that much of the volatility is caused by informed traders as their information is aggregated into transaction prices. Taxing financial transactions does not reduce the volatility due to "noise" trading. Rather, it introduces additional frictions in the price discovery process.

The literature on option pricing under transaction costs shows how frictions on the trading in one asset affects prices and volumes of that and other assets. Using a simple framework based on this literature, we demonstrate how volume can migrate to the assets that are not subject to the tax. We also argue that it is very difficult to design and implement a tax that does not favor one portfolio of assets over another portfolio with exactly the same payoff.

Recent studies on rational expectations question the traditional view that volume is just an outcome of the trading process and is not valuable per se. These studies find that volume can play an informational role. Consequently, if transaction taxes cause volume to migrate, then they can hamper the informational efficiency of markets.

International finance provides other interesting examples of volume fragmentation and market segmentation. Volume fragmentation can occur due to restrictions on trading of substitutable securities such as different classes of company shares. This leads to market segmentation and inefficient price discovery.

Literature on Securities Transaction Taxes

Opinion is divided on the merits of securities transaction taxes. Many proponents of STTs advance the following propositions:[2]

- the contribution of financial markets to economic welfare does not justify the resources they command. During a given time period, the resources that change hands in financial markets far exceed the value of the underlying or "real" transactions;

[2] See, for example, Tobin (1984), Summers and Summers (1989), Stiglitz (1989), and Eichengreen, Tobin, and Wyplosz (1995).

- many financial transactions are highly speculative in nature, and may contribute to financial or economic instability;
- market instability, including crashes, enriches insiders and speculators, while the costs are borne by the general public;
- financial market activity increases inequalities in the distribution of income and wealth;
- STTs can be an important and innovative source of revenue for the financing of development;

From this perspective, it is argued by some that governments ought to tax financial transactions in order to discourage destabilizing speculation that can threaten high employment and price stability, as well as to raise revenue. Higher rates – they argue - should be levied on short-term transactions, since these seem to benefit primarily market intermediaries and not "real" users. The massive volume of financial transactions in well-developed modern markets would – they reason – allow substantial revenue to be raised by imposing very low tax rates on a broad range of transactions. It is not surprising that a number of governments around the world have succumbed to this temptation, all the more so as such taxes are have a certain popular appeal.

Opponents of STTs have more faith in the ability of markets to allocate resources efficiently without direct intervention from public policy. However, the opponents also lack a convincing argument to justify the volume of resources flowing through financial markets. In addition, numerous documented anomalies, as well as a history of market crashes, do not lend themselves easily to the idea that financial markets are fully efficient. Neither does the fact that market participants devote considerable resources to analyzing previous transaction prices and volumes. Thus, instead of showing that the allocation of resources to the financial sector is justified on efficiency grounds, or that observed market volatility is optimal, the opponents of STTs have focused on practical shortcomings of the taxes themselves.[3]

There are two dimensions to the difficulties in implementing STTs. First, if an STT is applied in one financial market but not in others, the volume of transactions tends to migrate from the market that is taxed to markets that are not. Effective enforcement of STTs thus requires either a cross-market and perhaps even a global reach or measures to segregate markets. For example, tax authorities in one country may attempt to require payment of the tax on transactions made by their residents not only in financial markets within their own borders, but in

[3] See, for example, Campbell and Froot (1995).

other markets as well. Alternatively, they may impose controls on cross-border financial transactions, e.g., the Chilean tax on capital inflows.

Second, since the composition of the assets used in financial transactions matters less than the distribution of payoffs over time and in uncertain states of the world, the tax base must be defined as a function of the final payoff rather than the assets employed. A securities transaction tax would be considered neutral if it did not favor one portfolio of assets over another portfolio with exactly the same payoff. Since payoffs can be replicated by portfolios consisting of different types of assets, the imposition of an STT can create a greater distortion than it is trying to mitigate.[4] Instead of trading less because of the tax, investors may transact more in assets that are taxed at a lower rate or not taxed at all. As a result, real resources devoted to financial transactions may in fact increase rather than diminish following the imposition of an STT.

Given the lack of a consensus on the theory, there have been many attempts to resolve the debate empirically. However, empirical studies undertaken so far have not been able to decisively resolve the debate on the effects of transaction taxes on financial markets.[5]

Empirical research has encountered three major problems. First, the effects of taxes on prices and volume are hard to disentangle from other structural and policy changes taking place at the same time. Therefore, estimates based on the assumption that everything else in the economy is held constant are potentially biased.

Second, it is difficult to separate transaction volume into stable (or "fundamental") and destabilizing (or "noise") components. Thus, it is hard to say which part of the volume is more affected by the tax.

Third, it is hard to differentiate among multiple ways in which transaction taxes can affect asset prices. These ways include changes in expectations about the impact of the taxes, the cost of creating and trading in close substitutes not covered by the tax, and changes in market liquidity.

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[4] Honohan (2002) gives a comprehensive overview of the difficulties in designing an optimal tax system for the financial sector.

[5] A collective volume published by the Catalyst Institute in 1995 reviews most of the empirical research on financial transaction taxes. Empirical studies since 1995 have sought to address similar issues by using other datasets.

The Swedish Experience

In order to illustrate the subsequent arguments, we devote this section to a brief description of the Swedish experience with STTs. The Swedish experiment lasted for more than eight years. The first measure was announced in October 1983 and the last one was abolished in December 1991. The analysis in this section is based on the studies by Umlauf (1993) and Campbell and Froot (1995).

The initiative to impose financial transaction taxes came from the Swedish labor sector in 1983. The labor sector did not claim that trading in financial markets led to inefficient outcomes. Rather, according to Umlauf (1993), in the opinion of the labor sector, "the salaries earned by young finance professionals were unjustifiable ... in a society giving high priority to income equality," especially given the seemingly unproductive tasks that they performed. On this basis, the Swedish labor sector proposed to levy taxes directly on domestic brokerage service providers.

Despite the objections of the Swedish Finance Ministry and the business sector, popular support led to the adoption of taxes by Parliament. The taxes became effective on January 1, 1984. They were levied on domestic stock and derivative transactions. Purchases and sales of domestic equities were taxed at 0.5 percent each, resulting in a 1 percent tax per round-trip. Round-trip transactions in stock options were taxed at 2 percent. In addition, exercise of an option was treated as a transaction in the underlying stock and, thus, was subject to an additional 1 percent round-trip charge. The tax coverage and rates reflected a popular perception about the 'usefulness' of transactions in different financial instruments, with those involving equity options being the least 'useful.'

Continuing pressure from the labor sector compelled the Parliament to double the tax rates in July 1986 and broaden its coverage in, 1987. Furthermore, following large losses in interest futures and options (most notably by the City of Stockholm, which lost SEK 450 million), the tax was extended to transactions in fixed-income securities, including government debt and the corresponding derivatives in 1989.[6] The maximum tax rate for fixed-income instruments was set at 0.15 percent of the underlying notional or cash amount. In addition, the tax was designed to be "yield-neutral," with longer maturities instruments being taxed at progressively higher rates.

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[6] Officially, the extension of the tax to fixed-income instruments was supposed to achieve "neutrality" with the tax on equity transactions. See Campbell and Foot (1995).

The revenue performance of the tax was disappointing. According to the Finance Ministry of Sweden, the government collected SEK 820 million in 1984, SEK 1.17 billion in 1985, and SEK 2.63 billion in 1986. This accounted for 0.37, 0.45, and 0.96 percent of the total revenue for the corresponding years. After doubling the tax rates the government was able to collect SEK 3.74 billion in 1987 and SEK 4.01 billion in 1988. This accounted for 1.17 and 1.21 percent of the total revenue.[7] Thus, a 100 percent increase in the tax rate resulted in a 22 percent increase in revenue.

Widespread avoidance was one reason for the weak performance of the tax. Foreign investors avoided the tax by placing their orders with brokers in London or New York. Domestic investors avoided it by first establishing off-shore accounts (and paying the tax equal to three times the round-trip tax on equity for funds moved off-shore) and then using foreign brokers.

Broadening the tax to fixed-income instruments resulted in a sharp drop in trading volume in Swedish government bills and bonds and in fixed-income derivatives contracts. This significantly undermined the ability of the Bank of Sweden to conduct monetary policy, made government borrowing more expensive, and eroded both popular and political support for the tax. Taxes on fixed-income instruments were abolished in April 1990. Taxes on other instruments were cut in half in January 1991 and abolished altogether in December 1991.

Following the abolition of the tax, some trading volume came back to Sweden. According to Campbell and Froot (1995), 41 percent of the trades in Ericsson took place in Stockholm in 1992. Overall, the proportion of the trading volume in Sweden increased for almost all equities in 1992. That year, 56 percent of all trading volume in Swedish equities took place in Stockholm.

The Swedish experience highlights the following points. First, investors avoid the tax by finding or creating close substitutes. Since the brokerage business is very competitive, finding a close substitute for brokerage services off-shore was not very costly. However, the markets do not necessarily move off-shore, if close substitutes are available domestically. For example, trading in bonds did not move off-shore, but shifted to debentures, forward contracts, and swaps. Second, markets suffer greatly following the imposition of the tax. Even very low tax rates on fixed-income instruments led to an 85 percent decline in volume in the first week after the tax was imposed compared to its

[7] By contrast, tobacco taxes accounted for 1.26 and 1.37 percent of the total revenue collected in 1987 and 1998 respectively.

pre-tax average. The fixed-income options market virtually disappeared. Third, after the removal of the tax, the trading volume gradually comes back across all previously taxed assets.

How Important Is Trading?

The Swedish labor sector believed that trading in financial markets is an essentially unproductive task. Just how important is trading? The answer to this question depends on how the trading is conducted. In Sweden, investors had to carry out financial transactions mostly through dealers.

However, trading does not have to be conducted exclusively through dealers. It can be done through other mechanisms. For example, in continuous electronic auctions, buyers and sellers trade directly with each other, bypassing the dealers. Why didn't such an auction develop in Sweden? In fact, under the law, transactions executed without dealers were exempt from taxes.

According to the market microstructure literature, under some circumstances, dealers offer services that cannot be provided by other types of market designs at lower cost. It is especially true for infrequently-traded assets such as most of the Swedish stocks. Perhaps for that reason the order flow migrated not to another trading design, but to dealers in London and New York.

Dealers provide several important services. They provide liquidity and assume substantial risks by contributing their own capital. Accordingly, they demand adequate compensation for the provision of liquidity and the capital that they put at risk. The dealer's compensation is higher for illiquid assets.

In addition, dealers who act as market makers in particular securities must furnish competitive bid and offer quotations on demand and be ready, willing, and able to effect transactions in reasonable quantities at the quoted prices. In other words, a buyer does not have to wait or look for a seller, but can simply buy from a dealer who sells from his inventory. According to Pagano and Roell (1990), "this implies that, in contrast with what happens on auction markets, traders are insured against execution risk, i.e., the risk of finding few or no counterparties to trade." The dealer's compensation is higher for assets with a higher execution risk.

This highlights another important function that dealers play, namely, the provision of price stability. According to Madhavan (2000), "the presence of market makers who can carry inventories imparts stability to price movements through their actions relative to an

automated system that simply clears the market at each auction without accumulating inventory."

The provision of liquidity, price discovery, and price stabilization requires inventory management. Inventory management is achieved through the buying and selling of securities. Hasbrouck and Sofianos (1993) examine a set of quote, trade, and inventory data for market makers (specialists) on the New York Stock Exchange. According to their data, the market maker's activity (both purchases and sales) averages to about 26 percent of the total transaction flow (also both purchases and sales). For the most frequently traded stocks, this number is 20 percent, while for the least frequently traded stocks, it rises to 38 percent.[8] Thus, dealers become much more important as liquidity providers in less frequently traded stocks. Hansch, Naik, and Viswanathan (1998) show that the average size of an interdealer trade on the London Stock Exchange is much larger than the average size of a trade with the general public. They also show that inventory levels at which dealers trade among themselves is about twice as large as those at which they trade with the general public. They find that 38 percent of the variation in interdealer trading is explained by variation in inventory levels. They conclude that "interdealer trading is an important mechanism for managing inventory risks in dealership markets."

Thus, trading is important. It helps manage risks. Dealers demand compensation for the services that they provide and the risks that they take. If trading becomes costly as a result of transaction taxes, dealers cannot manage their risks effectively. Accordingly, they become less willing to put their own capital at risk in order to provide liquidity. Investors cannot carry out their desired trades, their latent demands are not fully satisfied, and resources are not allocated to their best uses.

What Causes Volatility?

In the previous section we argue that trading is important. But can it also be the cause of volatility?

French and Roll (1986) conduct an empirical study of the variability of stock returns over trading and non-trading periods. Using data for all stocks listed on the NYSE and AMEX for the period 1963 to 1982, they find that on an hourly basis, the variance of stock returns

[8] The statistics are calculated by taking the participation rates reported in the paper as a fraction of 50 percent, the rate which implies that the market maker is a counterparty to all trades.

is between 13 and 100 times larger when markets are open for trading than the variance when the markets are closed, depending on the definition of non-trading period.

They also find that the process of trading accounts for at most 12 percent of the daily return variance. The rest of the variance is attributable to the arrival of public and private information during trading hours. While they cannot directly decompose the effects of public and private information on volatility, they conduct a test which suggests that most of the variability in stock returns can be attributed to the arrival of private information during trading hours.

Later studies relied on much more refined transaction-level data to further decompose transaction price volatility. Madhavan, Richardson, and Roomans (1997) develop a stylized, reduced-form model of price volatility and use transaction-level, intraday data on 274 NYSE - listed stocks during 1990 to estimate it.

They argue that price volatility can be explained by the variability of four components: public information, private information, transaction costs, and other market frictions (price discreteness). They estimate that the impact of public information accounts for 46 percent of volatility in the beginning of the trading day and 35 percent at the end. The impact of private information (including the interaction between cost and private information effects) drops from 31 percent in the morning to 26 percent at the closing of trading. Variability in transaction costs increases from 22 percent at the opening to 35 percent at the end of the trading day. Finally, price discreteness accounts for the remaining 1 to 4 percent at the beginning and the end of the trading day, respectively.

Transaction costs in the Madhavan, Richardson, and Roomans (1997) model capture dealers costs for supplying liquidity on demand. They include compensation for inventory costs, putting their capital at risk, and other transaction costs. The model implies that other things being equal, higher transaction costs increase volatility. If transaction costs also include transaction taxes, then introduction of STTs can result in higher rather than lower volatility of transaction prices.

How Are Prices Formed?

In perfect, frictionless markets, asset prices immediately reflect all available information. As the new information arrives, investors rebalance their portfolios of assets. The rebalancing results in an updated set of prices. In the absence of transaction costs, the rebalancing can be done continuously and price discrepancies are

eliminated instantaneously. However, in real markets, agents face transaction costs. The presence of even very small transaction costs makes continuous rebalancing infinitely expensive. Therefore, valuable information can be held back from being incorporated into prices. As a result, prices can deviate from their full information values.

The dissatisfaction with the assumption of continuous portfolio rebalancing was the starting argument for the literature on the replication of assets under transaction costs. The literature recognizes that continuous rebalancing is not feasible and formulates discrete rebalancing under transaction costs.

In this section we study the impact of STTs on portfolio rebalancing and price formation. Consider a simple two-period example (following Hull, 1985). There are three assets in the market: a risk-free bond yielding 12 per cent per annum, a non-dividend paying stock, and a call option on the stock. The starting price of each share of stock is equal to $20. After a year, we assume that the stock price will either have increased to $22 or fallen to $18, with equal probability. The strike price of the option at the end of the year is taken to be $21.

Simple option pricing theory can be employed to compute in what proportions a call option and a risk-free bond must be held in order to be equivalent to 100 shares of stock. Under the assumptions given, this portfolio requires exactly 400 options (worth $0.63 each) and $1,747 of the bond.

But a one per cent transaction tax on buying or selling the stock greatly lowers the value of the option, as a tax of $0.22 will have to be incurred twice if the option is exercised and the stock then sold. Working through the arithmetic reveals that the option is only worth $0.39 and that now 694 options must be bought (along with $1,728 worth of bonds) to match 100 shares.

If the transactions tax is also levied on option transactions, or on bonds, there is a further change in the required number of options in the portfolio to replicate the shares, but in these cases the changes are very small. Thus extending the transactions tax to all three assets certainly does not restore neutrality.

Note that even in this simple example, it is quite difficult to design and even more difficult to implement a tax that does not favor one portfolio of assets over another portfolio with exactly the same payoff (e.g. a stock versus a bond and a call option). A uniform transaction tax is not payoff-neutral. For a tax to be payoff-neutral, the tax rates must be such that a change in the value of a replicating portfolio is exactly equal to the change in the price of the underlying asset. In other words, the tax rates must depend on the "delta" of the replicating portfolio.

Since in practice, "delta" changes as more information is revealed about the (unknown) underlying stochastic process, a payoff-neutral tax would have to be frequently adjusted. This would make it very difficult to implement.

How Valuable Is the Volume of Transactions?

According to the example presented in the previous section, demand for assets changes following the introduction of a transaction tax on a stock. The demand for derivatives goes up and the demand for both stocks and bonds decreases. Changes in demand translate into changes in the volume of realized transactions. Was anything lost as a result of this change in volume? Does it matter if transaction volume migrates to other instruments, markets, or countries? It does not, if the volume is not valuable. But how valuable is the volume of realized transactions?

According to standard rational expectations models with supply uncertainty, trading orders have both informational (or "signal") and "noise" components. Without the noise, aggregate supply uncertainty is resolved, arid prices adjust to their full information level. Otherwise, the informational component is aggregated into prices and the "noise" is left in volume. Consequently, volume is just an outcome of the trading process. It does not have any information about the fundamentals or the trading process and, therefore, lacks value.

According to this view, the migration of volume to other instruments, markets, or countries does not result in any loss of value or efficiency. It just means a reallocation of supply uncertainty. In other words, if transaction volume moves from Stockholm to London, investors in Stockholm become exposed to less uncertainty associated with "noise" trading and investors in London to more of it. Thus, if following the imposition of a transaction tax, volume migrates away from the taxed asset, the policy makers should perhaps just change their revenue projections and not worry about any fundamental market effects.

The long-held view that volume is not valuable per se has recently come under scrutiny. Blume, Easley, and O'Hara (1994) investigate the informational role of volume. In their model, the source of "noise" is not supply uncertainty, but the precision of private information about the signal. Prices aggregate information about the average level of private information. Trading volume contains information about the precision of individual private signals. Thus, volume does not just contain "noise," but has a non-trivial informational role to play. Price-

volume sequences are more informative than prices alone. This role becomes especially important for infrequently traded stocks which often do not get much analyst coverage.

This new view represents a fundamentally different perspective on the role of volume. It can be summarized as saying that "volume matters". The migration of volume results in lower informational efficiency of instruments and markets from which it migrated. If transaction taxes cause the volume to migrate, then they do affect the ability of markets to aggregate information and prevent a more efficient allocation of resources.

Evidence From International Finance

The international finance literature provides examples of market segmentation and execution costs in different markets. Domowitz, Glen, and Madhavan (2000) use a comprehensive database of execution costs (including transaction taxes) for 42 countries from September 1996 to December 1998. They use panel data techniques to study the interaction between cost, liquidity, and volatility across countries and through time.

They find that except for North America, explicit equity trading costs such as brokerage commissions, taxes, and fees account for about two-thirds of total execution costs. In the US average explicit one-way trading costs are the smallest for the countries in their study, accounting for 8.3 basis points or a fraction of 2.2 percent of mean return (374 basis points) for the period 1990-98. In other words, a complete rebalancing of the portfolio once a year results in an average explicit cost of 2.2 percent of its annual mean return. The largest explicit cost of 106 basis points is in Ireland, which has a stamp duty of 1 percent. In Ireland, the explicit costs of turning over a portfolio of equities just once a year accounts for a full 25 percent of the annual mean return.

They also find that over time, with the exception of transition economies, costs have generally declined, and that higher trading costs are positively related to increased volatility and lower volume.

Summary and Conclusions

This paper examines finance research relevant to assessing the impact of securities transaction taxes on financial markets. This research includes work on market microstructure, asset pricing, rational expectations, and international finance. We conclude that in most circumstances, transaction taxes can have negative effects on price

discovery, volatility, and liquidity and lead to a reduction in market efficiency.

The arguments made in this paper may be summarized as follows. First, in dealership markets, trading facilitates the provision of liquidity, price discovery, and price stabilization. Trading also helps to manage risks. If investors cannot carry out their desired trades, their latent demands are not fully satisfied and resources are not allocated to their best use.

Second, price volatility can be explained by the variability of four components: public information, private information, transaction costs, and other market frictions. Other things being equal, higher transaction costs increase volatility. Consequently, the introduction of STTs can increase the volatility of transaction prices.

Third, a simple theoretical framework based on the literature on option pricing with transaction costs shows that following the introduction of a transaction tax, the demand for derivatives can increase substantially. Moreover, it is difficult to design and implement a tax that does not favor one portfolio of assets over another portfolio with exactly the same payoff.

Fourth, if transaction volume has an informational content, then a migration of volume would result in lower informational efficiency of instruments and markets from which it migrated. If transaction taxes are the cause of volume migration, then they can inhibit the informational efficiency of markets.

Finally, the international finance evidence on market segmentation and execution costs in different markets suggests that except for North America, explicit equity trading costs such as brokerage commissions, taxes, and fees account for about two-thirds of total execution costs. The conclusion was that higher trading costs, some of which are due to STTs, are positively related to increased volatility and lower volume.

Transaction taxes can thus have a substantial effect on the transformation of investor demands into transactions. STTs can obstruct price discovery and price stabilization, increase volatility, reduce market liquidity, and inhibit the informational efficiency of financial markets.

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6

CURRENCY TRANSACTIONS TAXES: A BRIEF ASSESSMENT OF OPPORTUNITIES AND LIMITATIONS

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Recently there has been a surge of interest in the use of transactions taxes to stabilize financial markets and to reduce the potential for financial crisis by curbing speculation, asset price misalignment and financial volatility.[2]

Keynes made the case for a securities transactions tax (STT) in 1936. A number of heterodox economists have renewed the case for STTs (e.g., Pollin *et al*., 2001; Crotty and Epstein, 1996; Spahn, 1995).[3] Tobin's (1974, 1978) well-known extension of the STT to foreign exchange markets has received a great deal of support of late (e.g., Arestis and Sawyer, 1999; Felix, 1999; Haq *et al*., 1996; Wade, 1998). The currency transaction tax (CTT)--or the Tobin tax as it is more commonly known--is a modest *ad valorem* tax on all spot transactions in foreign exchange. Tobin (1996) amended his original proposal to encompass forward and swap transactions as well. Empirical studies of CTTs estimate that the ideal tax rate would be quite low, ranging from .1% to .25% (Felix and Sau, 1996).

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[1] I thank Randall Dodd and the participants at the January 2003 New Rules conference for their helpful comments on this policy memo. I also thank Peter Zawadzki for excellent research assistance.

[2] Dodd (2002), Hinman (2002) and Palley (2001) provide useful reviews and analyses of the central issues.

[3] See Grabel (2003c) for a discussion of the macroeconomic benefits and forecasts of the revenue potential for STTs in developing countries.

Among transaction tax proposals, none has received as much attention as proposals for CTTs. Indeed, at the May 2002 conference of the coalition "New Rules for Global Finance," the CTT was a topic of intense debate in the group's discussions of alternatives to neoliberal financial models. The most recent New Rules conference was organized in response to calls by participants at the May 2002 event for further discussion of recent research, political support and activism with regard to CTTs around the world. The breadth and international character of participants and speakers at the January 2003 event demonstrates the salience of CTTs to various constituents.

In this brief policy memo, I review the possible achievements and limitations of CTTs. I conclude by arguing that CTTs can be a component of what I term a "developmentalist financial architecture." This term refers to a financial system that promotes equitable, stable and sustainable economic development.[4] However, I conclude that CTTs *alone* are an inadequate means to address many of the most pressing financial and investment concerns in developing countries.

Opportunities Presented by CTTs

CTTs have the potential to raise revenue

The potential of CTTs to raise revenue must not be overlooked. Given the likely incidence of CTTs, they are progressive taxes. The progressive incidence of CTTs renders them a desirable form of taxation.[5] Researchers have recently developed forecasts that reveal the potential of CTTs to raise significant revenues. For example, Nissanke (2003) finds that a global CTT has the potential to raise between 16 and 35 billion US dollars in one year (using currency market data for 2001).

Many advocates of CTTs suggest that the tax revenues can be used for socially-desirable purposes, such as those that promote economic development and/or provide needed finance to the United Nations or global environmental projects. This is clearly a desirable aspect of CTTs. For instance, Kaul and Langmore (1996) suggest that CTT proceeds could be collected by a centralized authority charged with extending concessionary development loans.

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[4] Grabel (2002, 2003b) discusses the concept of a developmentalist financial architecture.

[5] Baker (2001) discusses this issue at some length. See also Palley (1999) for other public finance arguments in support of the Tobin tax.

CTTs can promote modest reductions in some short-term trading and attendant currency and financial volatility[6]

CTTs could reasonably be expected to reduce some "day trading" in currency markets. This is because the annualized cost of even a very small tax may be prohibitive in the case of habitually active traders, especially during tranquil times when expected returns on these trades are modest. In this case, CTTs could reduce some of the volatility introduced by short-term currency trading (and resultant distortions in currency prices) to the extent that churning by some investors is discouraged.

There are two compatible means for enhancing the ability of a CTT to reduce currency market volatility. Joint implementation of a CTT and a STT would enhance their potential to reduce currency (and other types of financial) market volatility. A STT can reinforce the stabilizing effect of a CTT by increasing the cost of investor flight, as Crotty and Epstein (1996) have observed. Investor flight might be discouraged by this conjoint taxation.

A variable STT-CTT would further enhance the potential of these measures to reduce currency (and other types of financial) market volatility. Spahn (1995, 1996) is the best-known proponent of a two-tiered transactions tax on currency trading. In Spahn's formulation, low transactions taxes would be maintained during tranquil (or "normal") times. But a higher transaction tax would be activated whenever levels of market activity accelerated dramatically. With knowledge of this variable tax structure, investors might be less likely ex-ante to engage in activities that aggravate various types of financial risks (such as currency risk or investor flight risk). In any case, the activation of a prohibitively high transaction tax (as a speed bump) might discourage some investors from liquidating their portfolios.

Limitations of CTTs

CTTs will not significantly influence the composition of investment or prevent financial crises

As argued above, a CTT (even in conjunction with a STT) would at best modestly reduce some currency and financial market volatility. But CTTs are not a sufficient tool for preventing financial crises of the sort that have become all too common in developing countries. CTTs

[6] This section and the discussion that follows draw on Grabel (2003a).

are not an effective means for reducing the financial fragility and the potential for financial instability that stems from widespread participation in speculative activities and the currency and/or repayment risks inherent in risky financing strategies (such as those that involve locational or maturity mismatch). This is the case for two reasons.

First, CTTs are not designed to dampen speculation in all of the sectors of the economy that are prone to bubbles. For example, speculation in real estate and construction contributed significantly to the creation of a fragile financial environment in the East Asian countries that were party to the 1997-8 financial crisis. Second, even in those sectors that do fall under the authority of CTTs (and even STTs), the presence of a tax is unlikely to reduce speculation dramatically (Akyuz and Cornford, 1995 p. 188).[7] This is because the ideal tax rate is rather low relative to the expected profits associated with speculation. Hence, a low CTT (or even a low STT) would not be sufficient to undermine the attractiveness of activities and financing strategies that aggravate fragile financial environments, particularly in the context of rising expectations during an economic boom.

For the reasons advanced above, CTTs (and STTs) are also not the best means for curbing the financing and investment strategies that render developing countries vulnerable to large-scale investor flight and/or sudden, large currency appreciations or depreciations. The presence of a relatively small tax on currency (or securities) sales would be unlikely to discourage investor exit if investors have reason to fear massive capital losses due to declining securities prices and/or a significant currency depreciation (Crotty and Epstein, 1996; Dodd, 2002, 2003; Palley, 2001:74). Thus, CTTs (or STTs) would neither prevent those activities that create currency and investor flight risk, nor would they prevent the kind of herding behavior that exacerbates these risks in the context of investor flight. Moreover, CTTs cannot reduce the risk of contagion from financial crises that originate elsewhere.

In sum, traditional CTTs (and STTs) would not have prevented the build-up of risks that culminated in the East Asian crisis of 1997-98.[8] CTTs would also not have prevented the implosion of the Argentinean economy in 2002 or the spillover effects of this crisis on Uruguay and Paraguay. It is important to note, however, that a dual or a variable STT-CTT has a greater potential to reduce financial volatility and mitigate the severity of financial crisis than does a traditional CTT.

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[7] But see Felix (1999, p. 10) for an alternative view.

[8] This contrasts with Wade who writes that the tax "might have slowed the build up to the crisis" (1998, p. 1545).

CTTs will not enhance macroeconomic policy autonomy or reduce the power of the financial community vis-à-vis policymakers in the developing world

Policymakers in developing countries face constraints on policy autonomy for several reasons. First, they often find themselves compelled to implement contractionary macroeconomic policy because it is seen as necessary to attract and retain the international private capital flows on which they depend. In practice, this policy bias has proven highly detrimental to economic growth and living standards. In addition, a contractionary policy bias privileges the economic interests of the financial community over other groups within society (such as the poor).

Second, during crises the pressure to implement contractionary macroeconomic policies is especially severe. In this context, contractionary policy is often seen as necessary to rescue a collapsing currency and slow the pace of investor flight. Third, following a crisis, an especially contractionary policy regime may be deemed necessary in order to induce private investors to return to the country.[9] Fourth, assistance from the IMF following financial crises often comes at the price of having critical domestic economic policy decisions vetted by the institution. This shift in power to the IMF is highly problematic insofar as the institution has a highly undemocratic governance structure and is dominated by the USA.

CTTs do not offset any of these constraints on policy autonomy.[10] This limitation stems from the inability of CTTs alone to protect developing countries from large-scale investor flight and/or financial crises.

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[9] However, evidence from the Asian crisis countries shows that this strategy does not work.

[10] James Tobin (1974, 1978) discusses the issue of policy autonomy in some depth, though not specifically in the developing country context. On this matter, Tobin argued that a CTT could restore "some fraction of short-run [policy] autonomy." However, he went on to explain that "it will not, should not, permit governments to make domestic policies without reference to external consequences" (Tobin, 1978:158). I thank Randall Dodd for discussion of this issue. By contrast, financial reforms that are more far-reaching in scope (such as capital controls) stand to play a significant role in enhancing policy autonomy in developing countries.

Concluding Thoughts

Proponents of a developmentalist financial architecture have reason to offer support to CTTs because of their potential to raise revenue and to inaugurate modest reductions in currency market volatility. However, advocates of CTTs also have reason to recognize its important limitations, and to press for more fundamental reforms of the global financial architecture. Indeed, many supporters of CTTs envision the tax as a complement to programs of far-reaching progressive financial reform (e.g., Jetin 2002). In this regard, it is critical to promote measures that enhance the right of developing countries to impose capital controls, and to support policies that encourage the provision of stable sources of long-term finance to developing countries and those that facilitate a reduction in the burdens of external debt (for examples of such policies, see Chang and Grabel, forthcoming 2004:chs.7-11; Grabel 2003a).

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7

TOBIN TAXES: ARE THEY ENFORCEABLE?

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The debate over the enforceability of Tobin taxes can be boiled down into two simple propositions.

1. If a Tobin tax is implemented by a government that is not committed to enforcing it, then it will not be enforceable.
2. If a Tobin tax is implemented by a government that is committed to enforcing it, then it will prove enforceable.

The proof of the latter proposition lies in the profitability of Microsoft and other software companies, as well as companies in the entertainment industry. These companies rely on copyright protection for the bulk of their profits. The problems of copyright enforcement are similar in nature, but vastly more difficult, to the problems associated with enforcing Tobin taxes. The fact that governments have been sufficiently successful in enforcing copyrights to allow copyright holders to earn tens of billions in profits annually proves that the problems of enforcing a Tobin tax can be overcome by a government that is politically committed to its enforcement.

Tobin Taxes at the Point of Settlement of Currency Trades

Before directly addressing the general issue of enforcement, this paper will address the more narrow proposition that a Tobin tax

imposed at the point of the settlement of currency transactions will be sufficient to accomplish the goals of a Tobin tax in raising revenue and discouraging currency speculation as argued by Schmidt (2001) and Spahn (2001). The basic argument in favor of this position is that nearly all currency trades are now settled through a single international system, the Continuous Linked Settlement Bank. There would be enormous risks to any trader who attempted to carry through transactions outside of this system, since it would require making a series of ad hoc arrangements for each transaction. The risk associated with the failure of these ad hoc arrangements (e.g. a counter-party does not carry through with a commitment) would almost certainly outweigh the costs of complying with a Tobin tax at the levels usually proposed (0.01 percent to 0.25 percent).

While this argument is almost certainly correct in reference to the spot transactions that are used to carry through international trade and investment, where the parties to the transaction actually do need to gain possession of a different currency, the situation is quite different in reference to transactions carried through for the purpose of speculation. In these situations, the parties have no interest whatsoever in actually gaining possession of the currency on which they are speculating, they simply need an instrument which will allow them to place a bet on the movement of the currency. For these transactions, which are the ones usually seen as the primary target of a Tobin tax, a tax imposed only at the point of settlement in the currency market is likely to have little consequence. Rather, the tax will simply push speculation from the spot currency market into the markets for currency futures, options, and other derivative instruments.

This point can be easily seen by examining the changes in the transactions costs in the spot market and the derivative market that would result from the imposition of a tax that only applied to actual trades in currency. The costs of transactions in the spot market and the derivatives market can be written as follows:

1. $TC_s = TC_{sd} + TT$
2. $TC_d = TC_{dd} + p(s)^* (TC_s)$

where TC_s are the total transactions costs associated with a trade in the spot market, TC_{sd} are the direct costs associated with carrying through a transaction in the spot market (e.g. brokerage fees and/or the spread between buying and selling prices), TT is the rate of the Tobin tax (which could be zero), TC_d is the total transaction cost associated with trading a currency derivative, TC_{dd} are the direct transactions cost associated with a trade in a currency derivative, and p(s) is the

probability that a trade in a currency derivative, such as a future or option, will lead to a trade in the spot market.

Equation 1 is stating that the cost of a trade in the spot currency market is equal to the direct costs of carrying through such a trade, plus the Tobin tax, if there is one. Equation 2 is simply stating that the transactions cost associated with trading a derivative instrument is equal to the transactions costs directly associated with the purchase and/or sale of this instrument, plus the transactions cost of the implied spot transaction, multiplied by the probability that the spot transaction will actually take place. In other words, the transactions cost of a future contract for 1 million euros is equal to the transactions cost associated with purchasing the future, plus the transactions cost associated with actually purchasing 1 million euros, multiplied by the probability that the future contract will lead to the purchase of 1million euros.

From these simple equations, it is easy to see that the main effect of a Tobin tax imposed only on the settlement of currency trades will be to push speculation from the spot market into derivative markets. At present, traders often speculate in these derivative markets instead of, or in addition to, speculating in the spot market. The decision to speculate in one market rather than the other will depend on a number of factors, including the relative transactions cost of speculating in the various markets. If the transactions costs in one market increase relative to transactions costs in other markets, then speculators will opt to trade in the markets where there has been a relatively smaller increase in the transactions costs.

Equations 1 and 2 show that a Tobin tax will lead to a much larger proportionate increase in the cost of speculating in the spot market than in derivative markets. The increase in the transactions costs in the spot market will be equal to the size of the Tobin tax (assuming that the Tobin tax is presently set at zero). Expressed as a percentage of current transactions costs, this increase would be equal to TT/ TC_{sd}.

However, the imposition of the Tobin tax has no direct impact on the transactions cost of buying a derivative instrument, such as a currency future or an option on a currency. The Tobin tax will increase the transactions costs of these derivative instruments through increasing the cost of any trades in the spot market that eventually take place as a result of the purchase of the derivative. In this case the increase in the transactions cost of purchasing a derivate would be equal to p(s)*TT. In percentage terms, the increase in the transactions costs associated with purchasing a derivative instrument would be $[P(s)*TT]/ [p(s)* TC_{sd} + TC_{dd}]$. As long as the direct transactions cost of buying a derivative instrument are not zero, a Tobin tax will result in a larger percentage

increase in the cost of carrying through transactions in the spot market than in derivative markets. The differential impact of a Tobin tax will be larger, as the probability that a derivative transactions will result in a spot transaction decreases. For example, if the probability that a derivative transaction will result in a spot transaction falls to 5 percent, or even 1 percent, which is certainly plausible, then the impact of a Tobin tax on transactions costs in derivative markets will be quite small.

In short, the main impact of a Tobin tax imposed only at the point of settlement, from the standpoint of currency speculators, is to drastically increase the transactions costs of trading in the spot market relative to the derivative market. While there will still be some increase in the transactions cost of trading in derivative markets, this increase will be a fraction, and possibly a very small fraction, of the increase in the cost of trades in the spot market. Since much speculation already occurs in the derivative markets, the primary effect of a Tobin tax imposed only at the point of settlement of currency trades, will be to shift trading to derivative instruments that are not directly subject to the tax.

Since the impact of the tax on transactions costs in derivative markets will be much smaller than the impact in the spot market, the disincentive to speculate from the tax will be proportionately smaller. For example, if the probability that a derivative transaction will result in a spot trade is 5 percent, then a Tobin tax of 0.1 percent, would have the same impact on the derivative market as a tax of 0.005 percent directly imposed on the implicit currency trades in these markets. As a result, Tobin taxes imposed exclusively at the point of the settlement of currency trades, which are set at a level that will not seriously disrupt international trade and investment, will probably not have much effect on currency speculation in derivative markets.

The Link Between Spot and Derivative Markets

It is important to recognize that any market (spot or derivative) can come to be the primary locus for currency trading, and the prices set in this market will quickly be passed through to other markets. The logic of this point is fairly straightforward. The price in the market that is the primary locus of trading is providing information about the price at which traders are willing to exchange currency. This information should quickly affect the prices at which currencies are traded in other markets.

In the case where most currency speculation has been driven into one or more derivative markets as a result of a Tobin tax imposed at the point of settlement of currency trades, currency prices will be determined in the derivative market(s) in which most trades are occurring. This point can be seen by imagining an analogous situation – suppose that all the central banks in the world agreed on a set of currency prices and there was no doubt in financial markets about their commitments to these prices. Under such circumstances, there seems little doubt that the price of currencies in financial markets would conform to the levels set by the central banks.

Similarly, the price of currencies set in derivative markets would drive the prices set in spot markets, if the bulk of trading were taking place in derivative markets. The outcomes in the derivative markets would be treated as reflecting the views of traders in control of massive sums of money. Knowledgeable traders in the spot market would follow the derivative markets. They would quickly arbitrage away any differences that might exist between the prices being set in the spot market and the derivative market, in the same way that they would arbitrage any differences in the price set in any specific market and the currency prices being set by central banks. In this scenario, the spot market would become largely irrelevant for determining currency prices, with the action being shifted to one or more derivative markets.

A Comprehensive Currency Transactions Tax

While the settlement system may provide a convenient point at which to tax trades in the spot market, if the point of a Tobin tax is to discourage speculation, or at least to tax it, then the tax will have to be applied to trades in derivative instruments as well. It is worth noting that taxes on derivative instruments are already common. For example, the United States already imposes a small tax on trades in both futures and options, which is used to finance the supervisory boards that oversee trading in these instruments. Many other nations also impose taxes on trading in various types of financial derivatives.

Opponents of Tobin taxes have raised two types of objections to the possibility of a broader tax that would include the taxation of derivatives. First, there have been questions raised about the ability of a national government, or set of governments, to impose a tax that could apply to trades in countries that are not parties to a tax treaty. Second, there have been questions raised about the technical feasibility of a tax applied not only to currency trades, but to all possible derivatives as well. These issues will be addressed in turn below.

The first question, the ability of the major economic blocs (the United States and the European Union) to enforce a treaty outside its borders, does not really deserve to be taken seriously by anyone who pays attention to international debates. The major economic blocs have not let the niceties of international law ever interfere with anything that was deemed fundamental to their interest. For example, as President Bush stated so eloquently, if the United Nations will not support his decision to attack Iraq, then it is "irrelevant." This assertion prompted little outrage from other nations – in fact many nations seemed to find it a compelling argument for supporting the U.S. position at the United Nations.

It is certainly possible that existing treating prevent the United States or the European Union from imposing a currency tax on trades that place in Liechtenstein, the Cayman Islands, or other tax havens. Determining the implications of existing treaties for this issue can be a valuable employment program for lawyers, bureaucrats, and academics, but it is not a topic that needs to be taken seriously by people interested in the feasibility of a Tobin tax. Liechtenstein, the Cayman Islands and the world's other tax havens will not prevent the United States and/or the European Union from implementing a tax policy that they are committed to, regardless of what current treaties say, any more than these tiny nations could prevent an invasion of Iraq. If current treaties can be read to prevent the imposition of such taxes, then these nations will be forced to accept new wording, or the treaties will be ignored. It is disingenuous to paint a world where major powers are prevented from pursuing tax and financial policies by tiny island nations. This is simply an excuse for inaction by those opposed to Tobin taxes.

As far as the more serious point about the technical obstacles to a comprehensive tax, this has already been answered. Microsoft earns billions of dollars of profits every year from people paying royalties to use its software. Other software companies also get billions of dollars from royalties, as do the large entertainment companies. These flows of income depend entirely on the enforcement of copyrights.

Copyrights can be thought of as a tax which is privately collected. In contrast to the Tobin tax, which is typically proposed as being just 0.1 percent of the price of the underlying transaction, the copyright tax is the full cost of the transaction. Software, recorded music and videos, and other digital material, could be instantly transferred at zero cost over the Internet, in the absence of copyright protection. In other words, copyrights can be viewed as a tax that is 1000 times the size of the Tobin tax. Economists recognize that the incentive to evade a tax is proportionate to the size of the tax, so the incentive to evade copyrights

is vastly greater than the incentive to evade a Tobin tax, yet copyrights are largely enforced.

There is a second reason why copyrights should be far more difficult to enforce than a Tobin tax. The proponents of a Tobin tax are primarily concerned about taxing large-scale currency speculation that would involve transactions of tens, or hundreds, of millions of dollars. No one is terribly concerned about the possibility that a tourist or small business owner may find a way to change a few thousand dollars without paying the tax. However, this is precisely the concern facing holders of copyrights. They are concerned that millions, or tens of millions, of individuals may copy and transfer copyrighted material without paying royalty fees. It is of course far easier to monitor a small number of large transactions than a very large number of small transactions.

The fact that the software and entertainment industry have thus far managed to limit the extent to which such unauthorized copying interferes with their profitability, should give great hope to proponents of the Tobin taxes. Given the much greater difficulty in enforcing copyrights than a Tobin tax, and the far greater incentive to evade copyrights than a Tobin tax, there can be little doubt about the feasibility of a Tobin tax as long as the software and entertainment industry can sustain themselves through the copyright system.

In order to enforce copyrights, governments have sent police agents into offices and dorm rooms; they have outlawed new technologies, and even arrested academics for presenting lectures.[1] Given the smaller stakes involved, it is unlikely that such intrusive measures would be needed to enforce a Tobin tax. However, the measures taken to enforce copyrights show the sort of steps that governments can take to enforce measures on behalf of powerful political interests. If governments are unwilling to take comparable measures to enforce a Tobin tax, it is due to political factors, not any technical problems inherent to the tax.

The Enforcement of a Tobin tax

Economists usually assume that economic agents will evade any payment where evasion is an option. This applies to both Tobin taxes and copyrights. Apparently, most businesses and individuals view the risks and costs of non-compliance with copyright laws to be sufficiently high that they still opt to pay licensing and royalty fees. It

[1] A Russian software engineer was recently arrested at a conference in the United States after presenting a lecture on a software program that makes it possible to break digital locks on electronic books.

will be important to ensure that the costs of evading a Tobin tax are viewed in a similar manner. A simple mechanism that is likely to ensure this outcome is to give ordinary workers a stake in the enforcement of these taxes.

For example, if a worker who reports his or her employer for violating the tax laws could receive 20 percent of any tax and fines that were subsequently collected, they would have a very powerful incentive to assist in the enforcement of a Tobin tax. In the case of a major trader, who may owe $10 million or more in Tobin taxes after a period of time, this system of rewards could mean a pay off in the millions of dollars for clerical workers who generally earn $20,000 to $40,000 a year. Under such circumstances, it is implausible that these workers, who actually carry through the trades, would not find the promise of such rewards sufficient incentive to report tax evasion by their employers. Given this structure of incentives, it is likely that most traders would gladly comply with a Tobin tax, rather than face the prospect of large fines and incarceration that would result from evasion.

Of course, this outline simply shows how it is technically possible to enforce a Tobin tax. It is entirely possible that the political power of the financial industry is so great, that no serious enforcement mechanism of this sort could ever be put in place, even if a Tobin tax were enacted in Europe or the United States. This is a position that deserves to be taken seriously, especially in light of the rash of corporate accountings scandals that have come to light recently in the United States. But, this is an argument about the corruption of government, not the feasibility of a Tobin tax. It may well be the case that our democracies are too corrupt to allow a tax that would be so detrimental to powerful financial interests. If this is the case, then it is the responsibility of economists to make this fact as clear as possible, not to provide cover under the claim that a Tobin tax is technically impossible.

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8

OVERCOMING THE TOBIN TAX'S IMPLEMENTATION PROBLEMS: TAX CROSS-BORDER CAPITAL FLOWS, NOT CURRENCY EXCHANGES

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I am neither an advocate nor a detractor of the Tobin tax (TT) by virtue of my professional affiliation or adherence to some economic dogma. As an economist, I look upon the TT simply as a specific tax measure proposed to achieve a particular economic objective, no more and no less. As such, its merits and limitations must be assessed, in my view, on the basis of the usual economic criteria we use to assess the soundness of any other economic policy measure, namely:

- Is the stated objective an appropriate or desirable one?
- Is the proposed measure the best one among available alternatives, on balance, to achieve the stated objective, in terms of its economic consequences; and practical feasibility.

The task that has been assigned to me at this conference is to discuss the implementation aspects of the TT. I will do that. Indeed, the basic attractiveness of my proposed cross-border capital tax (CBCT) that I am going to describe shortly lies, I believe, precisely in its ability to overcome the implementation problems commonly associated with the TT.

But the CBCT actually has more going for it than just its implementation advantages. To see why, I must first briefly review the

[1] These remarks represent my personal views and do not necessarily reflect those of the IMF or IMF policies.

other aspects of the TT, i.e., its objective, economic consequences, and practical feasibility.

Objective of the TT

It is useful to recall that the original objective of the TT, as proposed by Tobin (1978),[2] is to *reduce the excessive movements of short-term cross-border private capital flows*, without unduly damaging capital flows with a longer-term horizon. In Tobin's own words: "…the essential problem….is the excessive international—or better, intercurrency—mobility of *private financial capital*" (p. 153; italics added). He went on to state that his proposed tax "…would particularly deter short-term financial round-trip excursions into another currency,… [its] impact would be less for permanent currency shifts, or for longer maturities" (p. 155).

Objectives have, however, proliferated in recent discussions of the TT, ranging anywhere from anti-globalization to revenue generation (for financing global public goods, for example). These may or may not be legitimate or desirable objectives, depending on one's perspective, but they are NOT the objectives of the TT for which it was originally proposed.

Too often, the TT has been supported or denounced on account of these sundry objectives, which can, at a minimum, raise a number of complex issues in their own right. But in my view they are irrelevant when it comes to judging the merits and limitations of the TT. I have definite views on these other objectives, but to discuss them would go beyond the scope of my presentation today.

In the light of recent experiences, I doubt any serious economist would regard the original objective of the TT, as stated by Tobin, as inappropriate or undesirable.

Economic Consequences of the TT

A common criticism leveled by many economists against the TT is that it creates a distortion (relative to a situation without the TT).[3] Stated in general terms, this is true, but utterly beside the point, since all taxes are distortive in one way or another. The crucial question is whether the TT creates a distortion that goes beyond what is necessary

[2] Tobin actually first proposed the TT much earlier (in 1972). Nevertheless, the cited reference is the commonly acknowledged source of the idea whenever the TT is discussed today.

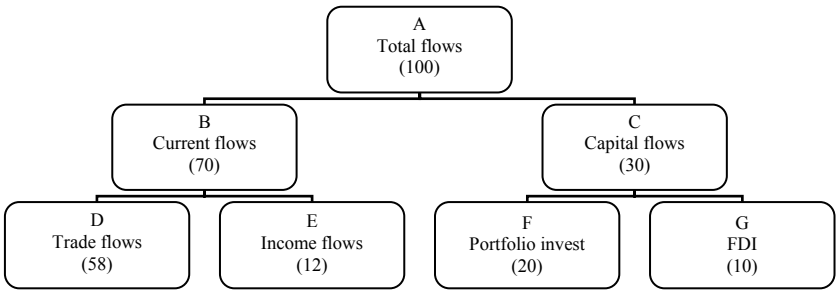
[3] The standard distortion argument is summarized in Shome and Stotsky (1996).

to rectify the targeted problem (i.e., excessive movements of short-term cross-border private capital flows).

Tobin and his collaborators[4] clearly saw the problem as stemming from a deficiency (excessively low transaction costs of capital movements) in the market mechanism to price capital flows correctly—a position that seems no longer much in dispute today. In other words, there is a market failure, and the TT is specifically designed as a tax to rectify that failure by raising such transaction costs (i.e., to throw sand in the wheel). As such, the underlying conceptual premise of the TT is completely analogous to that of the Pigouvian tax—a well-established policy instrument in economics—to correct for externalities, such as a pollution tax.

But the TT is supposed to be imposed on *all* currency exchanges. How did it happen that Tobin and others would go from the concern about capital movements to a tax on currency exchanges? Currency exchanges and capital movements are certainly not the same thing—the former being far more encompassing in coverage than the latter.

It would be useful, at this point, to set out the different types of cross-border (private) financial flows schematically—even if in a highly simplified and stylized manner—and pinpoint the type(s) that is(are) the intended target of the TT, versus the type(s) that is(are) actually affected by it as proposed:[5]



From the above discussion, it should be clear that the intended target of the TT are type *C* flows (and especially type *F* flows within them). However, as proposed, the TT would be imposed on type *A*

[4] Tobin (1978) and Eichengreen, Tobin, and Wyplosz (1995).

[5] For simplicity, the schematic presentation below deviates slightly from the standard balance-of-payments classification. The figure in parentheses under each type of financial flows represents the proportion (in percent) of that type in total flows globally in 2000. Calculations are based on financial *in*flow statistics as reported by IMF (2001).

flows, i.e., on current (type *B*) flows as well that have nothing to do with capital movements.[6]

Why, then, is there a discrepancy between the TT's intended target and its actual target? The answer is that Tobin could not think of a way to separate the different types of financial flows in the real world. As he put it: "[The tax] would have to apply, I think, to all payments in one currency for goods, services, and real assets sold by a resident of any currency area. I don't intend to add even a small barrier to trade. But I see offhand no other way to prevent financial transactions disguised as trade" (Tobin, 1978, p. 159).

Viewed in the above context, the TT is decidedly a second-best instrument, being prevented, as it does, from reaching its intended target on account of practical difficulties. Hence, critics of the TT, who base their criticism not on the argument that the TT would generate a general tax-induced distortion, but rather on its adverse impact on financial flows that are unrelated to the problem at hand, do have a legitimate point.

I know of no reliable quantitative estimate of the potential distortive impact of the TT on current and other flows unrelated to capital movements. Surely it would depend on the rate of the tax. However, even if the rate is kept low (most discussions on the TT would put the rate not much above 1 percent—usually much lower), the welfare cost may not be negligible because of its large base.[7]

Supporters of the TT often dismiss the significance of its impact on noncapital financial flows on grounds that such flows amount to only a small proportion of the volume of currency exchanges. This is technically true but utterly misleading. While trade and income flows may only be a small fraction of currency exchanges, it does not follow that they are quantitatively insignificant relative to the size of the economy of any country.

Furthermore, a TT of, say, just 1 percent would in fact represent a non-trivial increase in the tax burden on imports and exports, as existing trade taxes have already declined to very moderate levels in most developing countries (and the decline will continue). Likewise, in

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[6] In reality, the base of the TT is orders of magnitude larger than type *A* flows that are recorded in a country's payments accounts, since a large proportion of currency exchanges would not give rise to the actual flow of funds across borders. The latest available statistics on the volume of foreign exchange turnover, as reported by BIS (2002), show that it amounted to about US$1,200 billion *per day* (as of April 2001), or US$300,000 billion annually (assuming there are 250 trading days a year)—about 25 times the annual total type *A in*flows to all countries combined.

[7] Dornbusch (1997) thought that the welfare cost would be low if the rate of tax is kept low, but he neglected the base considerations.

an environment of rapidly declining capital income taxation, the impact of the TT on cross-border flows of capital income cannot be discounted so lightly.

As it turns out, there is, I believe, a simple and cost-effective way to refocus the TT on its intended target, and consequently remove what I would regard as the one real economic defect in its design: its unintended impact on noncapital financial transactions. This is where my CBCT comes in. But before I proceed to describe it, let me briefly touch upon issues related to the TT's practical feasibility.

Practical Feasibility of the TT

There are two dimensions to the TT's practical feasibility: political and administrative. Because the TT is focused on currency exchanges, its proponents have rightly argued that, to prevent leakage, "…[it] would have to be universal and uniform: it would have to apply to all jurisdictions, and the rate would have to be equalized across markets. Were it imposed unilaterally by one country, that country's forex market would simply move offshore" (Eichengreen, Tobin, and Wyplosz, 1995, p. 165).

It is precisely the above universality requirement that has bedeviled the TT ever since its inception, because it raises a whole host of complex political and administrative issues, the chief among them:

- formulating an international arrangement to introduce the TT in a globally- coordinated manner (e.g., is there a need to create a new international organization to collect and administer the tax?);
- standardizing collection procedures and facilities of tax administrations across countries, if the TT is to be collected by individual countries;
- stipulating measures (penalties and enforcement powers) to address consequences resulting from nonparticipating countries; and
- determining and agreeing on an equitable way to spend or allocate the possibly large revenue so raised.

These are formidable issues indeed, but they all arise because of the universality requirement which, in turn, stems from the TT's focus on currency exchanges. As I already have argued earlier, however, such transactions are not the intended target of the TT. In contrast, the CBCT is designed to refocus one's attention on capital flows—the source of the problem at hand. Under it, the above issues would simply become irrelevant.

The CBCT

The idea behind the CBCT is extraordinarily simple. The details of its design have been laid out in Zee (2000). Here, I summarize its main features:

- For reasons that will become clear shortly, the CBCT is a tax to be imposed on the total private financial (type *A*) *in*flows into a country, leaving the *out*flows untaxed.
- The tax point would be when funds are transmitted into the country and received by a financial institution from a source abroad. The account of the recipient would be credited in the amount of $f \cdot (1 - t)$, where f is the funds received and t is the rate of the CBCT. The tax ($f \cdot t$) so collected would be deposited immediately into the account of the tax authorities.
- The CBCT paid on export receipts (type *D* inflows) would be refunded based on the same procedures and information requirements for claiming value-added tax (VAT) refunds by exporters.
- The CBCT paid on receipts of income (type *E* inflows)—the bulk of which would comprise interest, dividends, royalties, and repatriated profits—would be creditable against the income tax liability of the recipient based on the same procedures and information requirements for claiming income tax credits by the taxpayer. Excess credits are refundable.
- The CBCT paid on proceeds from the sales of (real or financial) assets is creditable/refundable under the income tax based on proper documentary evidence of such sales.

The CBCT is, in essence, a withholding tax on all private financial (type *A*) inflows, with the tax refunded (or creditable against the income tax) on all current (type *B*) inflows. The burden of the tax falls, therefore, on capital (type *C*) inflows—the TT's intended target. In this way, the CBCT is able to avoid the economic defect of the TT, but retains the latter's crucial property that the tax burden on capital varies *inversely* with the time horizon of the investment.[8]

[8] As pointed out by Spahn (2002), the well-known measure of non-remunerated reserves used by Chile some years ago to discourage capital inflows does not have this desirable property. For a review of Chile's experience, see Laurens and Cardoso (1998).

The CBCT is also able to overcome the various practical feasibility problems of the TT discussed earlier in a cost-effective way because: (1) no new administrative machinery needs to be set up to administer the tax, since financial institutions would serve as withholding agents—a task for which they are well suited—and the credit/refund mechanism relies on the existing administrative infrastructure of a country's tax system; and (2) political issues about the global implementation of the TT and the consequent revenue sharing would not even come up, since the CBCT is first and foremost a *national* tax—it is entirely up to an individual country to decide whether imposing such a tax would best serve its national interest.

By now it should be clear why the CBCT is imposed on financial inflows but not on outflows: the credit/refund mechanism would not work on the latter. However, quite aside from this reason, the economic case for taxing outflows is much weaker than taxing inflows because, as argued by Eichengreen (1999), the former merely treats the symptom rather than the cause of the problem. In any case, the rate of the CBCT can always be adjusted to achieve the burden of a round-trip tax (such as the TT).

No taxes are perfect or airtight against loopholes, and the CBCT is no exception in this regard. However, compared to other means of alleviating the harmful effects of excessive capital movements, such as the TT, Chile's non-remunerated reserves, or outright capital controls, the problematic aspects of the CBCT seem relatively modest indeed. Nonetheless, they deserve to be mentioned.

First, the CBCT gives rise to possible administrative complications for: (1) countries without a VAT but at the same time are vulnerable to the sudden reversals of capital inflows; and (2) recipients of funds from foreign sources who are not VAT payers or income taxpayers. In either case, there would be some increase in the administrative burden on national tax authorities and compliance burden on CBCT payers if the CBCT is implemented. Fortunately, neither case seems prevalent in practice.

Second, the CBCT cannot capture financial inflows that do not go through the formal financial system. In most countries, such inflows are unlikely to be quantitatively significant, and in any case would not be of the type (e.g., direct bilateral trade credits) targeted by the CBCT in the first place. Likewise, direct borrowings abroad by a domestic firm to finance investments abroad *only* (i.e., no funds are transmitted back home) would also be able to escape the tax, but, again, the quantitative significance of such borrowings is probably relatively small.

Concluding Remarks

It is now a generally-held view that there is a market failure—at least to some degree—in the pricing of cross-border capital movements, and the idea that a price-based measure of some sort (as opposed to quantitative controls) could be used to address it has found wide acceptance among economists and policy makers alike.[9]

Both the TT and the CBCT are price-based measures. However, as I have argued here today, the CBCT retains the merits of the TT but rectifies its shortcomings on both economic and practical grounds. Furthermore, since the CBCT is national rather than global in scope, its objective is far more modest—and achievable—than that commonly pronounced by the supporters of the TT.

The CBCT has no ambition to dampen the volatility of global capital movements (which does not look like to be an attainable goal in any case); it is merely designed to lengthen the time horizons of investors as a way to alleviate the problems brought on by excess capital movements in countries that are vulnerable to such movements.

I should perhaps conclude by emphasizing that neither the CBCT nor the TT (nor, for that matter, any other similar measure) is likely to be effective in shielding a country over time from the global market forces engendered by its pursuit of unsustainable policies. *The CBCT is a measure intended to correct a market failure, not to propagate policy failures.*

[9] See Council on Foreign Relations (1999), Fischer (1998), and Williamson (2000).

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9

APPLYING A SECURITIES TRANSACTIONS TAX TO THE US: DESIGN ISSUES, MARKET IMPACT, REVENUE ESTIMATES[1]

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What are the most effective means of regulating volatile financial markets? Such a question may have appeared quaintly old-fashioned after the repeal in 1999 of the Glass-Steagall regulatory system in the United States and the corresponding dismantling of financial market regulations throughout the world. But, like a hardy perennial, the question has quickly returned, as one consequence of the collapse of the U.S. stock market and ensuing recession. Similar questions were also posed in the aftermath of the 1998 Asian financial crisis, which prompted widespread discussions on the need for a "new financial architecture." Many proposals were made after the Asian crisis. But they varied widely as to what form this new structure should take. Meanwhile, as this debate proceeded, the process of deregulation continued to advance.

This discussion paper summarizes the main points in a longer paper (Pollin, Baker and Schaberg 2002) which attempts to examine with some specificity the viability of security transaction excise taxes (STETs) as one significant component of a new financial architecture. The focus of the paper is on designing a STET as it would apply to the contemporary U.S. financial markets. But we also examine principles

[1] Discussion paper based on Robert Pollin, Dean Baker and Marc Schaberg, "Securities Transaction Taxes for U.S. Financial Markets", *Eastern Economic Journal*, Fall 2003, pp. 527-58.

for designing a STET that will have general applications beyond any specific country setting.

STETs have been utilized extensively throughout the world both as a means of discouraging short-term speculative trading on financial markets and as a significant source of government revenue. Such a tax was proposed for the United States by then House of Representatives speaker Jim Wright after the 1987 stock market crash, and variations on this idea have been introduced fairly regularly in Congress in subsequent years, without ever having been passed into law.

The basic idea of a STET is simple. Imposing a small tax on a security transaction--for example a 0.5 percent tax on equity trades--would create a negligible burden on asset owners who intend to hold their asset for the long-term. However, if asset owners purchase equity with the intention of selling it at a profit in the short-term, the 0.5 percent tax would be imposed on each trade, and would thus constitute a significant burden. As James Tobin has put it, a STET "would automatically penalize short-horizon round trips, while negligibly affecting the incentives for … longer-term capital investments," (1996, p. xi).

The so-called Tobin tax--a STET that applies to foreign currency markets only--has received increasing attention in recent years (e.g. ul Haq, Kaul, and Grunberg 1996), as the details on the design of that idea have developed beyond Prof. Tobin's initial fundamental contribution (1978). Beyond these discussions, however, little mention was made of STETs generally in the wake of the multiple crises of 1998, perhaps in part because over the previous decade most governments that had such taxes in place have either repealed them or sharply limited their scope. Japan, for example, has completely abolished its STETs as of April 1999. As recently as 1989, the STET generated more than four percent of the country's total government revenue (Japanese Securities Research 1992, p. 244), but the government has been reducing the tax in stages through the 1990s amid the country's long-term financial crisis.

But the case against STETs has not only been made in the political arena. In academic research as well, multiple arguments have been raised against STETs over the past decade: they are difficult to design in ways that avoid severe distortions; they damage the competitive position of domestic financial markets in countries that have STETs relative to countries that do not; they raise the cost of capital and thereby discourage investment; and, finally, they are unlikely to either significantly dampen market volatility or raise significant tax revenue.

General arguments in behalf of STETs have been made before, initially by Keynes (1936) in the General Theory, and recently by, among others, Summers and Summers (1989) and Stiglitz (1989). The aim of this paper is not primarily to restate or amplify these general positions. It is rather to explicitly address the critiques of STETs that have emerged in recent years. In particular, for the U.S. financial market, we show how to design a STET in ways that avoid the distortions noted by critics with respect to various STETs around the world. Once design problems are solved, we are then able to show that, for the U.S. case, the revenue potential of a STET is formidable--on the order of $70 - 100 billion a year, or about five percent of total federal government outlays--even if one allows for declines in trading volume up to an implausible 50 percent of existing levels. Of course, assuming the STET is designed well, such substantial increases in government revenue will be accompanied by a decline in short-term speculative trading, and thus an increase in the government's ability to handle macroeconomic problems resulting from unstable financial markets.

The full paper first presents some basic arguments as to why financial markets will operate with greater stability when STETs are part of the policy mix contributing to financial stabilization.

Next, we look at the general level of STETs, as they have been applied throughout the world. We also present evidence on the extent to which STETs are being reduced or repealed in most places in the world. We summarize the evidence on this in Table 1.

Getting to the heart of things, we then consider the major arguments against the STET: that STETs are ineffective at reducing volatility; that they will raise the cost of capital and thereby discourage private fixed investment; and that they will create serious distortions between taxed and untaxed market segments. We do not regard the first two arguments as persuasive. In terms of distortions, which we consider the most serious problem, we then show how the STET can be designed to minimize distortions. Three main principles are elucidated: that coverage of the tax be as broad as possible, spanning all domestic market segments and foreign as well as domestic traders; that the tax rate be equivalent, based on the market value of assets being traded; and that the tax should also reflect existing differences in transaction costs in various markets. Based on this design framework, we then finally come up with our revenue estimates.

In this relatively brief summary document, I want to focus on a few of the most important issues in our full paper. The first is the relationship between transaction costs and volatility.

COUNTRY	STOCKS	CORP BONDS	GOVT BONDS	FUTURES	DETAIL
Argentina	0.60%	0.60%	0.60%	0.60%	tax of 0.6% on all financial transactions approved by legislature March 2000
Australia	0.30%	0.15%	--	--	Reduced twice in 1990s; currently 0.15 each on buyer and seller
Austria	0.15%	0.15%	--		Present
Belgium	0.17%	0.07%	0.07%		Present
Brazil	0.3% [0.38%]	0.3% [0.38%]	0.3% [0.38%]	--	Tax on foreign-exchange transactions reduced from 2% to 0.5% 1999. Tax on stocks increased and on bonds reduced June 1999
Chile	18% VAT on trade costs	18% VAT on trade costs	--	--	Present
China	0.5% or 0.8%	[0.1%]	0	--	Tax on bonds eliminated 2001, Higher rate on stock transactions applies to Shanghai exchange
Colombia	1.50%	1.5%	1.50%	-	Introduced June 2000
Denmark	[0.5%]	[0.5%]	--	--	Reduced in 1995, 1998, Abolished effective Oct. 1999
Ecuador	[0.1%]	1.0%	--	--	Tax on stocks introduced 1999, abolished 2001. tax on bonds introduced 1999
Finland	1.60%	--	--		Introduced January 1997; applies only to trades off HEX (main electronic exchange)
France	0.15%	See note		--	Present
Germany	[0.5%]	0.4%	0.2%	--	Removed 1991
Greece	0.60%	0.60%	--	--	Imposed 1998; doubled in 1999
Guatemala	3.00%	3.00%	See note	--	Present
Hong Kong	.3% + $5 stamp fee	[0.1%]	[0.1%]	--	tax on stock transactions reduced from 0.6% 1993; tax on bonds eliminated Feb. 1999
India	0.50%	0.5%	--	--	Present
Indonesia	0.14% + 10% VAT on commissions	0.03%	0.03%	--	Introduced 1995
Ireland	1.00%	--	--	--	Present
Italy	[1.12%]	--	--	--	Stamp duties eliminated 1998
Japan	[.1%], [0.3%]	[0.08%], [0.16%]	--	--	Removed April 1999
Malaysia	0.50%	0.5%	.015% [.03%]	0.0005%	Present
Morocco	0.14% + 7% VAT on trade costs	7% VAT on trade costs	7% VAT on trade costs		Present
Netherlands	[0.12%]	[0.12%]	0	--	1970-1990
Pakistan	0.15%	0.15%	--	--	Present
Panama	--	--	--	--	stamp duties eliminated Jan. 2000
Peru	18% VAT on trade costs	18% VAT on trade costs	--	--	Present

COUNTRY	STOCKS	CORP BONDS	GOVT BONDS	FUTURES	DETAIL
Philippines	[0.5%] + 10% VAT on trade costs	--	--	--	VAT present
Portugal	[0.08%]	[0.04%]	[0.008%]		Removed 1996
Russia	0.8% on secondary offerings + 20% VAT on trade costs				Present
Singapore	0.05% + 3% VAT on trade costs	--	--	--	Reduced 1994, eliminated 1998; VAT present
South Korea	.3% [.45%]	.3% [.45%]	--	--	Reduced 1996
Sweden	[1%]	--	--	--	Removed 1991
Switzerland	0.15%	0.15%	0.15%	--	Present; 0.3% on foreign securities, 1% on new issues
Taiwan	.3% [.6%]	0.1%	--	0.05%	Reduced 1993
United Kingdom	0.5%	--	--	--	Present
Venezuela	0.5% [1%]	-	-	-	Reduced May 2000
Zimbabwe	0.45% VAT on trade costs	-	-	-	Present

Notes: […] indicates former tax rate. Sources ambiguous as to whether tax applies to bonds in France and government bonds in Guatemala. Austria, Belgium, Finland, Germany, Italy, Japan, Mexico, Portugal and Spain also impose VAT-type taxes on commodity futures trades.

Sources: *The LGT Guide to World Equity Markets* (London: Euromoney Publications, 1997); *1994 Handbook of World Stock and Commodity Exchanges* (London: Blackwell Finance, 1994); *Oppenheim Securities Markets Around the World* (New York: John Wiley & Sons, 1988); *OECD Financial Market Trends* (Paris: OECD, 1993); *Trends* (Security Industry Association, August 18, 1994); *Taxation of Stock Transfers in Various Foreign Countries* (Washington: Law Library of Congress, 1989); *Tax Notes International and World Tax Daily* (www.taxbase.org); IBFD, International Bureau of Fiscal Documentation (www.ibfd.nl). *The Salmon Smith Barney Guide to World Equity Markets; Dow Jones Interactive; PriceWaterhouseCoopers Guides to Doing Business*

Transaction Costs and Volatility

The STET aims to reduce volatility by increasing the costs of short-term speculative trading. However, some critics argue that discouraging traders from the market will not actually reduce volatility but may rather worsen it, by reducing the number of market participants and thereby reducing market liquidity.

Among others, Jones and Seguin (1997) conducted an empirical study whose results supported this conclusion. Jones and Seguin create an "event study" from the May 1, 1975 policy change on Wall Street, whereby fixed commissions on the New York Stock Exchange and American Stock Exchange were abandoned in favor of negotiated commissions. In practice, this policy change led to a lowering of commissions on both exchanges. They concluded that the fall in

transaction costs on the exchanges did not raise volatility, suggesting that a transaction tax which raises overall transaction costs will not reduce volatility.

In an earlier study, Roll (1989) performed a more direct test of the impact of transaction taxes--as well as price limits and official margin requirements--on market volatility. He examined the financial market behavior of 23 countries around the time of the 1987 Wall Street crash, comparing the experiences of the United States and three other countries that had no transaction tax with those in 19 countries that did have some tax. Roll found that the transaction taxes did dampen volatility, though probably to an insignificant extent.

Overall, we have no clear-cut result in considering the findings of Jones/Seguin, on the one had, and Roll and others cited in the paper. In our view, such ambiguity is consistent with the an important analytic point, which is that three separate factors influence volatility--the underlying performance of the nonfinancial economy; the possibilities for herd behavior to become dominant on financial markets; and the prospects for quelling a herd that has already begun. A STET, or more generally, any change in transaction costs, will have the most influence on the second factor, and, taken by itself, may have little influence on the other two. Working from such an analytic framework, it is not difficult to imagine how the empirical results on volatility would be ambiguous.

Davidson (1998) has developed one interpretation of the Jones/Seguin clear-cut result that changes in transaction taxes will do nothing to inhibit volatility, though Davidson does not consider at all the more ambiguous findings of Roll or others. Davidson believes that STET proponents conflate a decline in volume with a decline in volatility. A STET will no doubt reduce trading volume. But such a volume decline, in Davidson's view, may well *increase* volatility. This is because, if we recognize, along with Keynes, that financial markets are fundamentally uncertain, then thicker markets will be more stable, provided that market participants hold a diversity of views on market conditions. When traders hold a diversity of views in thick markets, pessimists and optimists will counterbalance each other. In reducing the size of such a market, the likelihood increases that pessimists and optimists will not balance out.

But Davidson's discussion makes clear that a diversity of views is a *necessary* condition for increasing market size to reduce volatility. However, the basic idea in both Keynes and Minsky about the nature of unstable financial markets is that, far from encouraging a diversity of views, they rather encourage herd behavior, what Davidson terms a

"bandwagon consensus." When markets are afflicted with a bandwagon consensus, Davidson says the appropriate policy intervention is to have a "market maker with sufficient financial resources to assure market price stability," (p. 11).

Davidson never explains why we should assume market participants are likely to hold a diversity of views rather than, as Keynes and Minsky would have it, a broad uniformity of perspective which at times will engender herd behavior. If our concern is with inhibiting the harmful effects of herd behavior and speculative excess, it follows from Davidson's own statement that the needed policy instrument is a market-maker, such as a central bank. But how does one know when the market-maker has sufficient resources? Clearly, we can measure the sufficiency of resources only *relative* to the size of the market they are seeking to influence. An effective STET is a crucial policy instrument in such a situation. First, it increases the costs of engaging speculative behavior. But in doing so, it also reduces the size of the herd--thereby increasing the possibilities for effective market-maker counter-measures.

Distortionary Effects of STET

Probably the most common critique of a STET is that it creates distortions between market segments, inviting migration and other tax-avoidance strategies. One widely-cited example of such effects was the STET imposed in Sweden in 1984, that was subsequently lifted in 1990. This Swedish tax was narrowly targeted, applying only to trades executed through Swedish brokerage firms. It did not apply to foreign trades of domestic taxpayers, even if they were of Swedish financial instruments. It also did not apply domestic trades conducted through foreign brokerage firms. It was initially limited to equity and equity-derivative trades, and only later was it extended to bond markets and bond derivatives.

In contrast to the Swedish tax is the UK "stamp tax", which, as its name suggests, is a tax on the registration of ownership of a financial asset. As such, the UK tax does not discriminate among market-makers. But the UK tax was not uniform across all financial markets. It did not apply to futures markets, and applied to options only when those options were exercised. This created incentives for investors to migrate from the spot to the derivative markets.

Even if the tax were applied across markets, another consideration is establishing an appropriate *tax rate*. Hubbard (1993, 1997), for example, has argued that if a uniform rate, such as 0.5 percent, were

applied across markets, it would have widely varying impacts, given differences in existing transaction costs in different markets. In particular, Hubbard says that a tax at this level would be devastating for derivative markets, in which existing transaction taxes are far below those for equity markets.

Reflecting on this literature is how we came up with the three principles around which we have designed our proposed STET:

1. That coverage of the tax be as broad as possible, spanning all domestic market segments and foreign as well as domestic traders:,
2. That, to the extent possible, all securities should be taxed at equal rates relative to the value of the asset being traded; and
3. That taxes be imposed equally relative to total existing transaction costs.

Design of Tax

We propose that the U.S. STET be applied following the British model, as a "stamp duty"--i.e. as a tax on the transfer of a financial instrument from one owner to another. Asset transfers would not be legally effective until they had been officially stamped. Assuming market participants place a high value on establishing legal status for their asset acquisitions and sales, a strong disincentive is in place against efforts to circumvent the STET.

To maintain the principle of broadest possible applicability, we propose that the U.S. STET apply to all traders in U.S. financial markets of both domestic and foreign residents. The tax would apply equally to foreign transactions of U.S. nationals and corporations, as was the case with Denmark's STET (Shin 1989). Finally, the U.S. STET would apply to trades of U.S. securities by foreigners in non U.S. markets.

Tax Rates

We begin with a benchmark that the two-sided tax rate on trading equities will be 0.5 percent, so that each party to the trade pays 0.25 percent. This is the amount proposed by former House Speaker Jim Wright in his 1987 proposal. This was also the level proposed by Summers and Summers (1989) and Stiglitz (1989), and has been the benchmark figure for other studies as well (e.g. Hakkio 1994). It is also

in line with rates on equities that have been applied elsewhere in the world.

Working from this benchmark, we would then scale the two-sided tax rate on other financial instruments as follows:

Bonds--0.01 percent per each year until bond's maturity
Futures--0.02 percent of the notional value of underlying asset
Options--0.5 percent of the premium paid for the option
Interest Rate Swaps--0.02 percent per each year until maturity of swap agreement.

Table 2
Representative Estimates of Equity Market Transaction Costs

A) Average One-Sided Costs in US Markets
(Stoll 1993; percentage of trade value)

Exchanges		*OTC*	
1980	1990	1980	1990
0.689	0.285	1.528	0.761

B) One-Sided Costs on Buyer-Initiated Institutional Trades in US Markets
(Keim and Madhavan 1998; percentage of trade value)

	Exchanges	*NASDAQ*
Range from smallest to largest market caps	1.78 - 0.31	2.85 - 0.24
Range from smallest to largest trade size	0.31 - 0.90	0.76 - 1.80

C) Median One-Sided "Adjusted Apparent Spread" in UK SEAQ Market
(Reiss and Werner 1996; percentage of trade value)

FTSE-100 Size Class	*Medium-Size Class*	*Smaller-Size Class*
0.71	1.31	2.28

Equity Markets

Table 2 presents evidence on transaction costs in equity markets institutional trades. Taking these all into account, one can conclude that the 0.5 percent two-sided tax is not outside the range of what the equity markets can absorb, after of course recognizing that the STET is in fact intended to reduce speculative short-term trading to some significant degree.

Bonds

We have proposed a two-sided tax rate of 0.01 percent per each year to maturity for debt issues, to maintain the neutrality of the STET's impact between stock and bond markets. With this rate on bonds, the trading of a 50-year bond would incur the same tax liability as an equity trade. Under such a formula, the STET should not create significant incentives for traders to favor either equity or debt instruments. In addition, maintaining a sliding rate of 0.01 percent per years until maturity would avoid discontinuities in the tax burden among bonds of differing maturities.

Our proposed STET would tax all government debt--federal, state, municipal and other--at a rate identical to that of private debt. This is a departure from the practice in many countries, which have explicitly exempted the transfer of government debt from taxation. It would also be a departure from the current preferential tax treatment for municipal bonds and the debt of various other state and local public agencies in the United States. The main argument in behalf of extending the tax to the government bond market, at all its levels, is straightforward--it is needed to minimize any distortionary effects of the tax across markets.

From the recent research on transaction costs in bond markets (especially Hong and Warga 1998 and Driessen, Mehenberg, and Nijman 1999), it appears that the sliding scale rates that we propose are in line with existing transaction costs. In particular, Driessen et. al show that transaction costs in bond markets do operate with a sliding scale roughly equivalent to that which we propose.

Futures Markets

The taxing of futures contracts poses difficulties. There is no price of a futures contract comparable to the premium on an options contract, which we consider below. Both the initial and subsequent margin deposits that traders make with brokers are the only exchanges that take

place at the initial closing of a contract and until the underlying asset is transferred. One might therefore argue that taxing the margin deposits on future contracts is the most appropriate approach to a STET on futures contracts. There is, however, a significant problem with this logic: in taxing margins, we would be creating an incentive to minimize margins, which itself could contribute to market instability.

Among other countries which have imposed STETs, the Japanese approach seems most appropriate to us. Their tax was on the notional value of the underlying asset, so that the size of the tax burden varies in proportion to the size of the transaction. However, relative to the tax on the margin deposit, it is less clear what the appropriate tax rate would be on the notional value of futures assets, while maintaining neutrality across markets. Before being lifted in April 1999, the tax in Japan had ranged between 0.002 and 0.005 percent of notional value. Working from this Japanese model, we propose to operate from an initial rate of 0.002 percent of notional value. To determine the appropriateness of this rate, we can then invoke our second standard of tax neutrality, i.e. establishing tax rates relative to existing transaction costs.

Futures Market Transaction Costs

The main finding is that our proposed two-way tax rate of 0.02 percent of notional value is well inside the existing transaction cost structure of the futures market. Our proposed tax rate would amount to roughly 5 percent of the mean one-way low estimate for these 11 markets, and 1.5 percent of the mean one-way high estimate. If anything, the tax on futures might need to be somewhat higher to retain equivalence with equity markets relative to each market's private transaction cost.

Options

We propose instead that the options market STET be based on the premium paid for the option, i.e. the price paid for acquiring the option. By taxing the premium, we are targeting the tax on the asset actually being traded with an options contract, which is the right to acquire another asset. Moreover, unlike the strike price, the premium incorporates the market's evaluation of the option itself, including the time limits for exercising the option and the difference between the strike price, the market price of the underlying asset at the time of purchase, and the price history of the underlying asset. Thus, to

maintain equivalence with the stock and bond markets, we propose that options be taxed at 0.5 percent of their premium.

Interest Rate Swaps

Swap markets are far less standardized than options or futures markets, as there is no clear market measure of the value of the swap transaction itself comparable to the premium on an option. On the other hand, a swap transaction is, over the period specified for the exchange, equivalent to the transfer of ownership of an asset. The primary difference is that instead of exchanging money now for the claim on the income from an asset, the counterparties exchange each other's income claims on two separate assets.

As such, the principle to follow for a STET on swaps would be the same as that for stocks and bonds. That is, the appropriate tax rate should be 0.01 percent of the value of the underlying assets per each year until the asset's maturity. In this case though, the duration of the swap agreement would be the measure of the years until maturity. Thus, if counterparties agreed on a "plain vanilla" swap over five years of a fixed and floating rate government bond, the tax would be 0.05 percent, regardless of the maturities of the two underlying bonds themselves.

Table 3
Revenue Estimates For U.S. Stet
(Estimates based on 1997 data except as noted)

		Revenue Estimates		
	Tax Rate	With no volume or price reduction (billions $)	25 percent volume reduction (billions $)	50 percent volume reduction (billions $)
Equities	0.5 percent of asset value	54.9	41.2	27.5
Government Bonds	0.01 percent of asset value, per number of years to maturity	41.6	31.2	20.8
Corporate Bonds		22.1	16.6	11.1
Futures (based on data from Wall Street Journal, 3/17/99)	0.002 percent of notional value of underlying asset	2.6	2.0	1.3
Options (based on data from Wall Street Journal, 3/17/99)	0.5 percent of option premium	6.5	4.9	3.3
Swaps	0.02 percent of asset value, per number of years to maturity	4.4	3.3	2.2
TOTALS		132.1	99.2	66.1

Sources: Securities Industry Association Factbook 1998; Securities Industry Association Investor Activity Report 1993; Federal Reserve Bulletin, Table 1.42; Futures and Options Factbook 1999; Wall Street Journal, 3/17/99; International Swap Dealers Association Market Survey 1997 Market Activities Data.

Revenue Estimates From U.S. STET

Table 3 presents revenue estimates for the STET we have developed, based on levels of market activity for the full year 1997 for stock, bond and swap markets, and 3/99 data for futures and options markets.

We provide three rough tax revenue estimates. Our first set of figures is based on the assumption that market values of securities and trading volume remain unchanged from the 1997 levels after the imposition of the STET. Under this circumstance, the STET generates $132.1 billion.

But of course, in addition to raising revenue, the purpose of the STET is to discourage speculative market trading, so that it is unrealistic to assume that trading volume and prices will remain constant after the STET is implemented. The next column of figures assumes that trading volume falls by 25 percent after the STET is implemented. This 25 percent figure for trading volume decline seems implausibly high, given the evidence we have on the magnitude of the tax we propose relative to actual transaction costs over the recent past. Nevertheless, allowing for such a large decline in trading provides an informative benchmark. Based on this assumption, we see that our tax revenue estimate is still $99.2 billion. Now mainly to provide an outside estimate, in the rightward column of Table 3, we show revenue figures assuming trading volume falls by 50 percent after implementation of a STET. Even under this circumstance, we see that the U.S. STET generates $66.1 billion.

Of course, these revenue estimates would have been higher during 2000, when the stock market peaked. We can obtain a sense of the revenue potential with the 2000 market through the actual revenue figures generated by the existing SEC tax of 0.0033 percent on stock transactions. This tax alone—as distinct from the 0.034 percent stock registration fee—generated $1.1 billion in 2000. As a hypothetical exercise, if we raise the stock transaction tax rate to 0.5 percent and assume no decline in trading volume, the 2000 revenue generated by the tax would be $184 billion, i.e. more than three times the $54.9 billion for revenue in equity trades we have estimated, based on 1997 stock market activity. As such, even allowing for the nearly 40 percent drop in the market in the two full years since the August 2000 peak (according to the S&P 500 index), and assuming the revenues from the SEC STET fell by an equivalent 40 percent, that would still mean that the STET from stock trades alone would generate $110 billion. In other words, this rough exercise suggests that our revenue estimates based on

the 1997 market would offer a broadly accurate order of magnitude estimate for the revenue potential of a STET designed along the lines we propose.

Conclusion

The U.S. Congress has regularly considered proposals for a U.S. STET since 1987, when a bill was introduced by then House Speaker Jim Wright. Perhaps the steady stream of academic literature opposed to a STET has been a factor in preventing the measure from moving in Congress beyond the level of initial discussions. We respond to the academic critics, and show that a STET can be designed in such a way that it is both desirable and workable in the U.S. context.

A STET is desirable along different dimensions. First, it is a measure that can contribute toward mitigating the "predominance of speculation over enterprise," as Keynes put it. Of course, critics are correct in arguing that, by itself, a STET will not be capable of preventing excessive financial trading, unless the tax is set at a level that would likely also inhibit "enterprise-driven," as well as "speculation-driven," forms of trading. But a STET can make a significant contribution toward dampening excessively speculative financial markets. It can do so first, in precisely the manner described by Tobin, by penalizing short-horizon round trips and thereby reducing the level of such short-term trading; while negligibly affecting those involved in long-term investment activity. But in addition, as speculative trading declines due to the STET, the capacity of policymakers to intervene as market makers increases, since the market they will be trying to influence will be smaller. This will also increase the effectiveness of monetary and fiscal policy interventions, since such interventions could be conducted with less concern about how speculative markets might respond.

As we have shown, the revenue potential of a STET is formidable. A STET in the U.S. that raises $100 billion per year—which at the 2002 level of financial market trading, even after the stock market collapse, would occur at lower tax rates than those we have proposed—would be sufficient to increase, for example, all federal spending on education, training, employment and social services by 154 percent over its 2001 level. This again highlights the "win-win" feature of a STET: if it fails to dampen speculation, it will nevertheless be generating an even larger amount of revenue, taxing unproductive market trading on a highly progressive basis. As policymakers gain experience in administering the STET, they could then also adjust the

tax rates periodically, depending on whether their primary aim at a given time was to discourage speculative trading or raise revenue.

Finally, we have shown that a STET can be implemented in a way that will avoid serious distortions across financial market segments, and thereby the flourishing of tax sheltering strategies, as occurred with the narrowly targeted Swedish STET. We have designed a STET that is consistent across markets by following two simple principles: first that securities be taxed at equivalent rates relative to the value of assets being traded; and second, that taxes be assessed equivalently relative to existing transaction costs in the various market segments. Incentives for tax avoidance will be weakened further through following the British Stamp Tax example—that is, granting legal status to ownership transfers only after the STET has been paid.

Given the fact that the U.S. government does at present impose a small STET to finance SEC operations—and raises over $1 billion/year in revenue through this tax—the overall evidence is strong that instituting a larger and broader STET would be a workable as well as desirable policy measure.

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10

UNDERSTANDING THE SILENCE AMID TURMOIL: THE TOBIN TAX AND EAST ASIA

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East Asian countries were hit hardest by the financial crisis in 1997. However, the discussion on what caused the crisis is not yet settled, consistently bringing about heated controversies. Notwithstanding, hardly anyone can dispute the fact that the vulnerable flows of short term speculative money triggered the crisis and aggravated the living conditions of people who lived in the region.

The Asian financial crisis revived the interest in the Tobin tax. The belief is that the crisis was either triggered or exacerbated by financial speculation, and that measures to reduce speculation, such as the Tobin tax, would have helped avoid the crisis or reduced the extent of resulting damage. Considering the fact that people in East Asian countries were the victims of the financial crisis, it is very surprising to find that the general attitude toward the Tobin tax, whether on the part of governments or the public, is so lukewarm in the region. Hearty cheers for adoption of the Tobin tax were expected, but the reality has been deep silence.

To understand this strange situation, it is necessary to know how desperately East Asian countries have sought foreign money to achieve high economic growth. Even though they experienced such a fatal shock during the financial crisis, foreign money is not what they can dispense with, but what they should still welcome to guarantee higher economic performance. In a sense, East Asian countries are afraid of

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adopting the Tobin tax as it may cause them to be deprived of inflows of foreign capital indispensable for sustaining their economies. Meanwhile, they are also constantly worrying over the possibility of the same kind of financial crisis recurring in the future. Thus, the silence among East Asian countries on the issue of the Tobin tax could be due to shortage of choice, but not to lack of courage or ignorance.

Politics of Recovery from the Crisis in East Asia

Various attempts have been made to explain the causes of the sudden collapse of East Asian countries. Some analysts have blamed domestic policies, while others have questioned the role of global finance. The U.S. and some of its G7 counterparts argued that the lack of transparency and unsound financial and macro-economic management in crisis countries were at the heart of the crisis. The opposite argument is that volatility and instability of international capital movements led to the financial turmoil. However, the fact is that the crisis was the product of a combination of external and domestic factors, which globalization failed to integrate.[2]

Depending on which factor was dealt more seriously, measures to cope with the crisis have differed very much by country. Korea and Malaysia, both of which were heavily dependent on foreign money for their economic development, have followed totally opposite directions in terms of capital control. China and Japan, two pivotal and rival countries in the region, have taken different positions as to how the region could regain its economic dynamics after the crisis. In this sense, political motivations should be understood to have some insights why these countries have shown passive response to the idea of the Tobin tax.

Politics behind Recovering Processes between Korea and Malaysia

Korea, one of the miracle stories of rapid industrialization, was the second Asian entrant after Japan in the OECD. However, the crisis hit the country hard as to make the fall in the won so dramatic that it depreciated over 50 percent between July 1997 and January 1998. Even after a $57 billion bailout program was announced by the IMF and

[2] For detailed discussions of the East Asian financial crisis including Korea, see Young-Chul Kim, "Building a New International Financial Order after the East Asian Financial Crisis," *Kyungyoungkyungjae*, 2000, and "Debt Workouts After the IMF Crisis in Korea," presented at the International Workshop on Arresting Capital Flow Speculation and Volatility at Hong Kong, 2001.

political support to it was assured by the newly elected president in December 1997, the decline in won and stock prices continued for several months.

The real problem confronting Korea was not the unproductive investments in real estate and other speculative businesses, but the heavy short-term borrowings by the private sector financial institutions from foreign commercial banks.[3] Thus the problem got further deepened with the fall in its currency and stock prices. Korea had relied heavily on the borrowings from foreign banks to supplement its domestic savings to meet its financing requirements. Faced with a situation of liquidity crunch and default, the then Korean president, Kim Young Sam, sacked his Finance Minister and replaced him with a former IMF official, Lim Chang-Yuel, on November 19, 1997.

Mr. Lim announced liberal policy measures to further open financial markets and remove restrictions on portfolio investments which were introduced in the early 1990s in the wake of a surge in such flows. After announcing the removal of capital controls, the Korean authorities had extensive discussions with IMF officials to work out a mutually acceptable bailout program. The IMF insisted that all shaky financial institutions should be shut down as a precondition to the bailout and the government should slash public spending and reduce its economic growth target from 6 percent to 3 percent in 1998.

The Korean case is not of the kind the IMF usually deals with. For instance, when a country is faced with a major budget deficit, huge current account deficit and high inflation, the standard IMF conditionalities of reducing government spending, raising taxes and real interest rates may work. However, this was not the case with Korea which had been running a budget surplus, and had a high growth rate with low inflation. The stiff conditionalities of the IMF program led to more bankruptcies and threw millions of people out of work. With the Korean domestic industry in deep trouble after the stock market crash coupled with high interest rates and deflationary pressures,[4] many companies have very little option but to sell their stakes to foreign investors at throwaway prices and at very favorable exchange rates.

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[3] After the mid-1990s, there has been a significant increase in short-term foreign borrowings by the Korean banks and financial institutions. Within a short period of two and half years, the borrowings by Korea nearly doubled, from $56 billion in December 1994 to $103 billion in June 1997. European banks were the most aggressive lenders to Korea, with their share of lending rising from 30.5 percent in mid-1996 to 35.1 percent in 1997. During the same period, the Japanese banks cut their exposure from 24.3 percent to 22.9 percent.

[4] The IMF insistence to increase the interest rates led to a rise in interest rates at the end of 1997, nearly 15 percent above the inflation rate.

In short, all the charges for causing the crisis in Korea were forwarded to domestic factors. Accordingly recovering measures focused on reforming the domestic economic structure. Being bailed out by the IMF, the Korean government was forced to follow the IMF directions. Restructuring programs were applied to the corporate, financial, public and labor sectors, with emphases on strengthening market discipline in economic and business sectors. In the process, the Korean government never raised any question about the malfunctioning of global finance and its negative consequences experienced during the crisis.

Domestic politics took a part of the story to explain why the Korean government acted so passively on the issue. There was a presidential election at the end of 1997 when Korea turned to the IMF to beg for bailout money. The president-elect, Daejung Kim, who was basically reformist-minded, decided to take advantage of the crisis to push forward his reforming policies, i.e., restructuring the outdated Korean economic structure. He utilized the authority of the IMF to avoid internal resistance from the conservative political and economic groups against his reforming policies. As a way of implementing reforming measures in the domestic economic area, the Korean government paid full commitment to the legitimacy of the IMF. The Korean government followed the prescriptions directed by the IMF, leaving the devastating role of short-term capital during the crisis unanswered.

Malaysia took an opposite direction in its recovering process from the crisis. Instead of approaching the IMF to help it out, the Malaysian government adopted exchange and capital controls, blaming global finance as a primary cause of the crisis. Minister Mahathir Mohammad justified the government's decision by making a severe attack on speculators, saying "there are a lot of things we can now do because we don't have to face actions of speculators to stop us. The free market has failed and failed disastrously because of abuses, not because the system is bad."[5]

Before the Asian crisis, however, Malaysia had traditionally been one of the most open economies. In 1968, long before it was fashionable, the government implemented a wide-ranging liberalization program to free capital movements, including liberalization of the

[5] Mahathir Mohammad, "Globalization: What it means to small nations," www.twnside.org.sg/south/twn/title, 1996.

regulations on foreign exchange transactions.[6] Liberalization became an important element in policy reforms initiated in mid-1980s. For example, the government promoted the Kuala Lumpur Stock Exchange by increasing foreign shareholdings of local brokerage firms from 30 percent to 49 percent. In fact, by the mid-1990s, Malaysia was home to one of the world's most highly capitalized stock and open financial markets.

Malaysia's initial response to the crisis, although not in the context of an IMF-supported program, did not differ greatly from that of Korea. In fact, Malaysia mimicked the IMF prescription of tight fiscal and monetary policies, referred to as a case of virtual IMF policy.[7] By the end of 1997, however, it was clear that these measures had failed to produce the expected results. Instead, the contraction measures transformed the financial crisis into a nationwide crisis. However, the so-called "virtual IMF policies" cannot be held solely responsible. Prime Minister Mahathir's diatribes against international hedge managers, in particular, financier George Soros, made the situation worse.[8] In fact, each time Mahathir publicly blamed foreign currency traders, the *ringgit* depreciated further. On September 1, 1998, fourteen months after the outbreak of the crisis, and after substantial capital outflows had already taken place, the Malaysian government imposed controls on capital outflows and restrictions on exchange rate transactions in an effort to stop "rogue foreign speculators" from trying to destroy the Malaysian economy in Mahathir's words.

The controls required repatriation by October 1 of all *ringgit* held abroad, an end to all offshore trading in *ringgit* and domestic credit facilities for overseas banks and stockbrokers, retention of the proceeds of the sale of Malaysian securities in the country for a year, payment in foreign currency for imports and exports, and central bank approval for the convention of *ringgit* into foreign currency. The Malaysian authorities also imposed tight limits on transfers of capital abroad by residents. Malaysian citizens were prohibited from taking as little as RM 1000(about $250) out of the country, while foreigners were not allowed to bring or take out more than 10,000 *ringgit,* although they

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[6] Malaysia achieved Article VIII status for current account convertibility under the IMF Articles of Agreement on September 11, 1968, becoming only the fourth Asian country to do so after Hong Kong, Japan and Singapore.

[7] Shalendra D. Sharma, "The Malaysian Capital Control Regime of 1998: Implementation, Effectiveness, and Lessons," *Asian Perspective*, Vol. 27, 2003, pp. 77-108.

[8] Mahathir not only called foreign currency traders and speculators "immoral" and "criminal," he even suggested that there was a Jewish conspiracy to financially cripple his predominantly Muslim country.

could bring in any amount of foreign currency. On February 15, 1999, the one-year waiting period on portfolio capital outflows was replaced with a set of graduated exit taxes.

Some observers, however, believe that Mahathir's criticism against speculators was politically motivated. He intended to avert people's attention toward the external enemy to escape domestic political plight. The 'breathing space' provided by attacking the outside enemy was used by Mahathir to strengthen his political foothold in domestic politics. One example was the arrest of Anwar Ibrahim, former Deputy Prime Minister in 1998. Anwar Ibrahim, once known as a proponent for liberalization of the Malaysian market to foreigners, was jailed on sex charges, but the case is believed as an attempt to stave off a possible leadership challenge.[9] The Malaysian government provided bailouts of enterprises such as Sime Bank, Renong and Konsortium Perkapalan Berhad, but they are said to be owned and controlled by people close to Mahathir's family and political party. In the case of Malaysia, the political motivation could be said to cause severe damages to the very purpose behind the logical justification of capital controls for arresting short-term speculative flows of global money.

Struggle for a Hegemonic Role between China and Japan

Some have argued that the Asian financial crisis originated, in part from China's 1994 currency devaluation.[10] China, according to these analysts, was the first domino to fall in Asia. The devaluation supposedly gave China a competitive advantage relative to other Asian economies, leading to the surge in Chinese exports in 1994 and thereafter. Other Asian countries kept their exchange rates pegged to

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[9] Mahathir claimed that Anwar was ousted because he was the key obstacle to the adoption of capital controls. Although his neoliberal economic leanings would have been inconsistent with his accepting capital controls, there is no clear evidence that he opposed such measures or would have actively opposed them had he stayed in government. In fact, it was the central bank governor, Ahmad Don, who was most opposed to the imposition of capital controls, and he resigned earlier as a result, citing differences over policy with the government. However, Anwar himself as finance minister announced economic policy changing from the austerity measures he had earlier introduced to the more expansionary measures in parliament in July 1998. By this time, having realized he had miscalculated in challenging Mahathir, Anwar appeared to be fighting for his political survival. It seems reasonable to argue that Anwar's removal was more the result of his political challenge to Mahathir rather than his economic policy that included opposition to capital control. Shalendra D. Sharma, "The Malaysian Capital Control Regime of 1998: Implementation, Effectiveness, and Lessons," *Asian Perspective*, Vol. 27, 2003, pp. 77-108.

[10] Fred Bergsten, "The Asian Monetary Crisis: Proposed Remedies," mimeo, 1997.

the U.S. dollar, and hence did not react immediately to China's competitive devaluation. However, over time the effects of the loss in competitiveness accumulated, contributing to growing current account balances and eventually a currency crisis.

However, the reality is that China has been successful in taking advantage of the Asian crisis to assure its neighboring countries that China has been a real assistant rather than harmful obstacle to get over the crisis. At the height of the 1997 financial crisis, China suffered from relative appreciation of its currency because of the large devaluation of other Asian currencies, with its exports hurt both by an increase in its exporting price and by a decrease in income of Asian countries that used to buy its commodities. In this situation many Asian countries worried over the prospect of depreciation of Chinese currency to boost its exports, which would become another severe blow to their staggering economies. But China kept the worth of its currency steady, providing neighboring countries with a measure of stability, but at the expense of its external competitiveness. This stance was very much hailed by Asian countries, and China took this chance to confirm its increased economic power to neighboring countries.

Meanwhile, China managed to protect its economy from the contagion effects of the East Asian financial crisis thanks to capital control. It still provides the country with policy instruments to deal with capital flows and its impact on the domestic economy. With the help of a fixed exchange rate and an independent monetary policy, the Chinese authorities have maintained financial stability. Although the Chinese government accepted the obligations of the IMF's Article VIII in December 1996 and thereby made the Yuan convertible on the current account, it has adopted a very cautious approach towards liberalization of capital account transactions. With emphasis on attracting long-term investment flows, China has taken special measures to restrict and curb portfolio investment and other short-term speculative inflows.

China has been able to keep off short-term capital inflows as 80 percent of its external debt is long term and 90 percent of investments are in the form of FDI. At present, China is the biggest placement of foreign capital in the world, successfully complementing short domestic savings by and large. At present, East Asian countries would like to see China exporting capital to them after sucking up massive amounts of FDI. With Japanese economy still gloomy, China is becoming an economic power in East Asia.

While Asian countries are talking about 'China threat', meaning that China is emerging as a hegemonic country by influencing East Asian

countries the way the US did in the past, Japan has feared a loss of influence in the region. East Asian countries benefited from the rise of the Yen against the dollar following the Plaza Accord of 1985 as their currencies were generally pegged against the dollar. The euphoria created by the global investment community in the 1990s was so high that countries previously known as developing countries earned the epithet of emerging markets. However, 'the Reverse Plaza Accord' which allowed devaluing the Yen in 1995 poured cold water upon the optimistic expectation for East Asian economies.[11]

The weak Yen deprived East Asian countries of the competitiveness of their exporting commodities, foreboding the economic crisis in a couple of years. The reverse Plaza Accord played a key role in undermining the competitiveness of the Northeast Asian and Southeast Asian economies whose currencies were tied to the rising dollar. By 1997, the yen had fallen to about 120 to the dollar. And by then, export volumes of Indonesia, Singapore, South Korea, and Thailand had gone into a free fall. That slammed these economies, which were already beset by high dollar-denominated short-term foreign debt, real estate bubbles, and fragile banking sectors.

In September 1997, the Japanese government unilaterally proposed the establishment of an Asian Monetary Fund (AMF). The purpose of the AMF was to provide liquidity to forestall speculative attacks on the region's currencies.[12] However, the Japanese proposal for AMF was turned down at the behest of the US and the European nations primarily because it challenged the monopoly of the IMF and the US role in the region. They objected on the grounds that AMF would increase moral hazard problems and encourage double standard (IMF vs. AMF). Japan gave up on the proposal in November 1997.

In October 1998, instead, Japan proposed a variety of financial schemes under the framework of "A New Initiative to Overcome the Asian Currency Crisis" (New Miyazawa Initiative). The initiative intended to provide a package of support measures totaling $30 billion. The United States and the IMF supported this initiative mainly because of its bilateral nature in contrast to the AMF proposal, which had attempted to achieve cooperation on a multilateral basis. Another

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[11] Walden Bello says that just as the Plaza Accord had essentially been a rescue operation of US industry by Japan and Germany, so was the reversal of the rising dollar a US-engineered bailout of Japan's crisis-bound manufacturing sector. Walden Bello 'Boom and the Bubble' Captures Dynamics of Global Economic Crisis," *Nation*, 2002.

[12] AMF was originally proposed to consist of a fund of about $100 billion, with Japan contributing about half of this, and the rest coming from the remaining member countries. The possible membership was the (then) six ASEAN countries, plus China, Japan, Korea, Hong Kong, and Taiwan.

reason why this initiative garnered support was because its mandate stressed the assistance of crisis-affected Asian countries to overcome their economic difficulties, thus contributing to the stability of international financial markets. Notwithstanding several positive elements, one cannot overlook the fact that the Japanese proposals were to serve its interests in the region, just as the US used the IMF to extend the interests of its corporations and financial institutions. This was why China was not thrilled with the AMF and Miyazawa Initiative, which inevitably assumed Japan's leadership role.

However, China and Japan showed very similar position toward the Tobin tax: no special interest, but with opposite reasons. China is a most active receiver of foreign capital. However, its government has a firm grip on the short-term financial movement and no need to consider adoption of the Tobin tax to protect itself from the attack of the volatile movement of international fund. Meanwhile, Japan is an active investor of its surplus capital around the world. The regulation of capital movement is not what it desires and, quite naturally, it has no special concern on the campaign of the Tobin tax.

New Regional Mechanisms Sought for Economic Cooperation after the Crisis

New Movements to Find Asian Identity

Although the major players in East Asia are badly split over what must be done, one of the mantras after the onset of the East Asian economic crisis is the need to cooperate towards a regional solution to the crisis. It is true that when the financial crisis hit the East Asia in 1997, the region's economic institutions failed to deal with the crisis. Moreover, there was no effective cooperation program among East Asian countries in the financial sector. When the hedge fund attacked East Asian countries, they had to fight it alone. In the face of increasing instability of global financial markets, the need for regional institutions to dampen financial contagion is being increasingly acknowledged.

In the wake of the Asian economic crisis Asian countries realized that the collective identity of the Asia-Pacific, symbolized by APEC (Asia-Pacific Economic Cooperation) is fictitious.[13] The most critical

[13] In its 9th meeting in 1997, APEC members discussed a regional financial cooperation scheme but made little progress toward creating it. Instead, the APEC meeting only revealed that there were conflicting interests between the United States and Asian countries and that APEC was not effective in handling the economic problems of the region.

factor behind the difficulties of APEC is the lack of a shared perception of common interests among member economies. Put simply, many Asian members have not been persuaded by the idea that U.S.-pushed trade and investment liberalization is beneficial to all. The Asian economic crisis provided an opportunity for countries in Asia to redefine their interest regarding regional cooperation and develop an 'Asian Identity,' which will be a crucial element in the East Asian regionalism.[14]

The crisis brought about the urgent need for the creation of a regional mechanism to deal with economic problems in the region. As individual countries lack resources and capacity to face severe financial crises, regional mechanisms can be useful in complementing national mechanisms. The Asian economic crisis showed that the contagion effects were substantially regional and regional response could be more appropriate, efficient and quick in controlling the contagion effect of the crisis. Second, the crisis revealed dissatisfaction among Asian countries with the idea of strengthening cooperation within the existing regional framework. They found that there was a serious conflict of interests between themselves and the United States and other western countries, which kept stressing the central role of the IMF in handling the crisis and used the crisis as an opportunity to push financial liberalization further.

The Asian economic crisis in some sense was an opportunity for Asian countries to redefine their interest regarding regional economic cooperation. It provides momentum for Asian countries to acquire collective identity. Based on this idea and perception regarding a regional cooperation scheme, Asian countries began to search for alternatives that would truly represent their own interests.

Financial and Trade Arrangements

In 1977, the ASEAN central banks reached an agreement on the establishment of ASEAN swap arrangements. The arrangement aims to provide immediate short-term swap facilities for dollars against the domestic currency of a requesting member country experiencing temporary international liquidity problems. The swap transaction is for a period of one, two, or three months and is renewable once for a maximum of another three months. Each member country contributed $20 million with a total of $100 million and a requesting country is

[14] Hyun-Seok Yu, "Explaining the Emergence of New East Asian Regionalism: Beyond Power and Interest Based Approaches," *Asian Perspective*, Vol. 27, 2003, pp. 261-288.

able to borrow up to $40 million. In 1978, the total financial resources were doubled from $100 million to $200 million and each member country agreed to contribute $40 million.

Since its inception, the ASEAN swap arrangement has been rarely used because of the availability of only a limited amount of dollars. However, its importance was recognized after the Asian crisis erupted in 1997. Reflecting strong support among policymakers, the Finance Ministers of ASEAN+3 countries, whose total foreign reserves amount to about $800 billion, agreed in May 2000 in Chiang Mai, Thailand, to establish a regional financial agreement to supplement existing international facilities in Asia. This agreement, known as the 'Chiang Mai Initiative' involved an expanded ASEAN swap arrangement that includes all 10 ASEAN countries and a network of bilateral swap and repurchase (REPO) agreement facilities among ASEAN+3. In November 2000, ASEAN-10 signed a new ASEAN swap arrangement, which would increase the total financial support from $200 million to $1 billion, with $900 million from ASEAN-5 and Brunei, $60 million from Vietnam, $20 million from Myanmar, $15 million from Cambodia, and $5 million from Lao PDR. A requesting country is able to borrow dollar, yen, and euro against its local currency at a gearing ratio of 1:2.

The Chiang Mai Initiative has met with a favorable reception from various quarters, including the IMF, for several reasons. First, the Initiative stressed the strengthening of the existing agreement at the center of ASEAN and its supplementary nature to IMF facilities.[15] Second, presumably large-scale financial support from the +3 countries to ASEAN-10 is based on a bilateral agreement, compared with the multilateral arrangement sought by the AMF. Third, the severity of the Asian crisis increased awareness among international financial organizations on the need for additional financial support at a regional level.

An important movement in the financial sector was the Chiang Mai Initiative, which in 2000 proposed an expansion of existing ASEAN swap arrangements, as well as the establishment of bilateral/unilateral swap arrangements among the ten ASEAN countries with China, Japan and Korea (ASEAN+3). Considering that a previous Japanese initiative

[15] However, there was intense opposition concerning the IMF's role, especially by Malaysia. In consequence, it has been agreed that member countries will be able to withdraw funds through this arrangement without any linkages to IMF programs, provided that the amount borrowed is within 10 percent of the maximum amount determined.

of AMF floundered in the face of strong opposition from the IMF and the US, this movement is remarkable.

There has been another significant trend toward building a new regional mechanism for economic cooperation since the late 90s, that is, FTA. The interest in FTA was driven by ASEAN, which decided in the early 90s to set up an ASEAN Free Trade Area (AFTA) and to reduce their tariffs. Furthermore, China and ASEAN have agreed to set up a China-AFTA within the next ten years and have conducted negotiations since the end of 2001. In an agreement between two of the more developed countries in Asia, the Japan-Singapore Economic Partnership Agreement (JSEPA) was made in January 2002. In addition Japan is currently conducting a FTA negotiation with ASEAN. Korea is just joining the discussion of FTA in the region and a Korea-Japan FTA would be a first step to be followed. A driving force behind these movements is the increase in intra-regional trade. Since the mid-1980s, firms from Japan, Asian NICs such as Korea, Taiwan and Hong Kong, and currently China have actively engaged in FDI in other Asian countries. As a result, intra-firm trade increased rapidly between parent company and subsidiaries and intra-region trade increased as well. However, the financial crisis proved the simple expansion of regional trade is not sufficient, as an unexpected shock in one country has a negative impact on the other countries through a sudden decrease in trade and FDI.

A natural logical step is to build a new organization to deal with this issue in East Asia, and FTA negotiations are one way to pursue this goal. In the past, the main purpose of a FTA was to imply increase trade volume among its member countries with tariff reduction. However, FTAs discussed in East Asia tend to focus on aspects beyond trade such as member countries' attraction of foreign investment, economic reforms and industrial cooperation. Up to now Asian countries' first priority is export-oriented industrialization. As a result, their industrial structures are becoming similar to one another, leading to cutthroat competition in the world market. In this regard, particularly, industrial cooperation among three Northeast Asian countries, namely Korea, China, and Japan is crucial. Japan has high technology and capital, China has a big market and abundant resources including low-cost labor and Korea has experience in economic development in a short span of time.

Even with some animosity inherited from the past and ongoing rivalry consciousness, their cooperation is getting more crucial. They begin to share some fear that "the East Asian financial crisis provided Washington to launch an economic resubordination of the region via

IMF programs promoting structural reform along free-market, Anglo-Saxon lines" as Walden Bello describes.[16] The East Asian financial crisis gave an important momentum for them to think of the necessity to build regional mechanism for economic cooperation to remain an 'economic engine' in the future.

The Tobin Tax in the Context of East Asia

Lack of Consensus for the Tobin Tax

Considering the fact that the Tobin tax became a global issue after the East Asian financial crisis, East Asian countries should have hailed the Tobin tax most. However, the reality is that Westerners take the leadership of promoting the Tobin tax while East Asian countries, the victims of the crisis, are split on the issue and falter in making their united voice heard. There are some explanations for this, including the following: First, East Asian countries are only interested in preventing the crisis from recurring in the future, but not in capital control itself which might cost more to induce capital inflows in their territories. Their national agenda of East Asian countries is to continue economic growth, which will inevitably lead to the attraction of foreign money. They don't want risk of slower economic growth by imposing the Tobin tax. This can be read at the scheme of the Chiang Mai Initiative which is aimed to cope with the contingent financial crisis in the future, but not to tackle the ultimate problems involved in the international monetary system as sought by the Tobin tax.

Second, people in East Asian countries simply understand the Tobin tax as being levied on the very wealthiest countries and distributed among poor countries. In short, the Tobin tax is viewed as the game between North and South, with some advocates simply motivated by ethical and humanitarian claims.[17] But, speculative money gave people in East Asian countries 'real' shocks and the impact of the Tobin tax would be much more pronounced to 'emerging' markets than any other countries. They find themselves distanced by the way Westerners deal with the issue of the Tobin tax. As a result, rather than participating in the discussion of the Tobin tax which seems to ignore the intrinsic dilemma faced by the East Asian economies, they

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[16] Walden Bello, "What is the IMF's Agenda for Asia," mimeo, 1999.

[17] The Tobin Tax is often called the Robin Hood tax. For details, see Steve Tibbett and Andrew Simms, "The Robin Hood Tax: Concrete Proposals for fighting global poverty and promoting sustainable development by harnessing the proceeds from a currency transactions tax," *asian exchange*, Vol. 17, No. 1, pp.115-143.

cooperate with each other to find a new road to obtain the Asian identity to solve their problems on the regional basis, exemplified in the movements of FTA negotiations and regional financial agreements.

Third, the Tobin tax needs capital liberalization as a condition to apply it. The Tax is meaningful only when capital moves freely across national borders. As mentioned before, China and Malaysia employ domestic measure of capital control, successful in arresting speculation and volatility of capital flows through domestic policy tools and, consequently, are in no need of the global scale scheme of the Tobin tax. UNCTAD's chief economist Yilmaz Akyuz says "Malaysia's capital controls are now widely accepted as a success" and make it possible to have a fundamental reorientation of an economy toward a more self-reliant pattern of growth.[18] China has also been strongly opposed to efforts of western countries and international bodies to speed up financial liberalization of developing countries, arguing that it is necessary to strictly separate trade and investment liberalization from financial liberalization. These countries do not find any motivation to join the global design to control the free movements of capital.

Fourth, Korea, Indonesia and Thailand, faithful pupils of IMF, have promoted structural reform along free-market, Anglo-Saxon lines. They have liberalized capital and exchange markets according to the IMF direction. Since the IMF has been advocating capital account convertibility as a key financial policy and has been against the adoption of capital controls, they are unwilling to apply such measures for fear of undermining market confidence and reducing their access to international finance.[19] As a result, they are left with very few domestic policy tools, if any, to protect domestic markets from a speculative attack or external shock. These countries are actually in a dire need of the global mechanism to control speculation. The problem remains that the adoption of the Tobin tax is a breach of faith to IMF and its ideology of Neoliberalism which these countries have been striving to materialize.

Fifth, the term 'global civil society' has been used relatively recently to describe the activity of non-state actors operating across inter-state borders. The increase in this type of activity has led to debate over the significance of civil society and to a realization that the state's claim to be the sole legitimate representative of the public interest is

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[18] Yilmaz Akyuz, "The Debate on the International Financial Architecture: Reforming the Reformers," Discussion Paper No. 148, UN Conference on Trade and Development, April 2000, p.15.

[19] Jacques-Chai Chomthongdi, "Institutional Reforms and Governance of Capital Controls," *asian exchange*, Vol. 17, No. 1, pp.79-87.

under question. This would clearly be the case in relation to the Tobin tax. However, civil society is not well developed in East Asia. Moreover, the weakly empowered civil groups concentrated most of their energy on domestic problems, such as improving civil rights and enhancing democracy in a national level. They tend to think that with poor human power and resources in civil groups, a priority should be given to solve domestic problems rather than to devote to the global issue such as the Tobin tax. In this regard, maturity of civil society in East Asia is a prerequisite condition to push ahead the idea of the Tobin tax.

Campaigning for the Tobin Tax in East Asia

Even after the financial crisis in 1997, East Asian economies continue to be the biggest demand for the global money for development. The challenge is whether they can take advantage of the liberalization process, which to a large extent is being pushed on them externally, while at the same time avoiding the devastating consequences as experienced in 1997. This dilemma constitutes the heart of the question faced by East Asian countries regarding the Tobin tax. The campaign for the Tobin tax in East Asia could not be successfully promoted without tackling directly the contradicting reality.

For this, a special mechanism could be invented in the framework of the Tobin tax to encourage FDIs, by providing high incentives for long-term investments. The revenue collected by levying a tax on the short-term financial transactions could be utilized for this purpose. There comes a big trend to find ways of promoting regional economic cooperation among East Asian countries as shown in active discussion of FTA agreements among themselves. To take advantage of the trend of regional cooperation, while inducing East Asian countries to actively join the discussion of the Tobin tax, it would be possible to build a regional-level governance body to rule the Tobin tax. The body should be given a certain degree of autonomy beyond national states and global institutions such as the IMF and the World Bank.

Global civil citizenship has been a main driving force to promote the campaign of the Tobin tax. In this regard, for campaigning the Tobin tax in East Asia successfully, consolidation of citizens in East Asian countries, or 'Civil Asia' should be built first. Most powerful NGOs were formerly responsible only to their member states, although a broad spectrum of issues have been brought across inter-state borders. For this, global civil organizations and networks should pay attention to

empowering civil power in East Asia and helping them find a common ground to act together. That is important not simply to get passive supporters for the Tobin tax from the region, but to let them become self-promoted proponents for it.

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11

WHERE DO WE GO FROM HERE?

Jo Marie Griesgraber
Chair, New Rules for Global Finance
Oxfam America

New Rules for Global Finance sponsored this conference to see if the NGO's concerned with global finance could come to a consensus on the desirability and feasibility of the Tobin tax.

Types of Issues

My task is to synthesize the many excellent papers and rich discussion of the conference and to see where we go from here. As I listened to the papers, I heard 1) speakers using different types of languages; 2) points of consensus among all parties; 3) points of ongoing disagreement; and 4) issues that, at least to me were "muddled" or lacked clarity and where additional research is needed. Both political and economic issues were to be found within the areas of agreement, disagreement or in need of further discussion.

First of all the presenters employed two types of language. The language of the activists and campaigners was quite different from the technical language of the economists.

Language of Campaigners/Activists and Political Issues

The various languages used in the conference were designed to reach a variety of audiences. The first language which I will emphasize here is that of activists and campaigners working to build a popular

movement in support of the Tobin tax. The economists' or technical language will figure larger in the discussion of consensus, dissensus and lack of clarity.

I first propagated the gospel of the Tobin tax in 1994 because the arguments seemed simple and self-evident. After today it is clear that simplicity is not necessarily a hallmark of the deeper debate around a currency transaction or Tobin tax, nor about its implementation and utility in terms of generating finances, distributing finances, or serving to slow down the pace of global speculation.

The simple message of the Tobin tax proponents—to tax speculators in order to provide funds for the poor while simultaneously reducing global financial instability—is excellent for the campaigners speaking to the general public. Most people in a general audience would not be expected to understand the financial arguments, although very many would certainly respond to the obvious social justice principles under-girding such proposals. Staying within this campaign construct, the Tobin tax has wide appeal because both the problem and the solution are easy to grasp, and the usual audience will rarely ever have to pay that tax. This campaign-ability of the Tobin tax issue is responsible in part for the political momentum the issue currently enjoys in several countries. The campaigners' audiences are the committed and the principled general public.

Other audiences are not satisfied with the simple campaign presentation of problem and solution. These audiences include governments and civil society in some developing countries, financial markets, international financial institutions, and most developed country governments and parliaments. One need also distinguish between financiers, central bankers, traders, Finance Ministers, and Treasurers, since they bring different perspectives to a currency transaction tax debate. All of these audiences share the demand for a more analytical and empirically validated presentation, and with that comes greater complexity. The presenters at this conference have been campaigners, "technicians," and sometimes both, using a mixture of languages and approaches. One expects speakers to adapt their message to the audience, and our speakers are from mixed backgrounds and the audience here is likewise mixed. In reading or listening to the papers and presentations, it is helpful to discern which language is spoken as well as the presenter's purpose.

One campaigner said we have deliberate ambiguity that may be useful, especially in the political context. For example in the Third World debt campaign, we just said cancel the debt. If the discussion got technical, we could talk about the London Club, Paris Club, Highly

Indebted Poor Country Initiative (HIPC), Debt Sustainability Analysis (DSA), Poverty Reduction Strategy Paper (PRSP) and any alphabet you wanted. But most campaigners told general audiences to just "cancel the debt". Independent of the experts' analysis and opinions, the campaigners carried a powerful social justice argument that was compelling.

Regardless of the language spoken or the intended audience, during this conference all agreed that if we want to do it—whether to cancel the debt or to initiate a Tobin tax--we will do it. If we develop the political will it will happen.

Points of Consensus

Greater differentiation among the conference presenters and participants became apparent as the discussion became more technical, regarding the extension, implementation, and utility of various versions of the Tobin tax.

All present agreed on the need to expand regulation of over the-counter-derivatives markets in particular and financial markets in general if there is to be a stable, well functioning market. This need underscored the importance of building up government capacity. As Kirilenko pointed out, many policy makers do not understand the language we use in identifying the problems associated with financial instability or the solutions we propose. That is a serious weakness. In the US this weakness is particularly apparent among Members of Congress. Financial market regulation is not a political campaign issue in the United States.

Points of Dissent

I will merely identify points of "dissensus"—that is, lack of consensus—without seeking to resolve the differences. A first area of difference related to the implementation of any Tobin tax. Some maintained that this clearly should be a global tax requiring a global mechanism for implementation as well as for dispersing any funds collected. Others argued that it should be a national tax, nationally collected, but allocated to global goals by a new global institution.

A fundamental difference was on the merits or demerits of decreasing the size of the financial market and the relationship between market size and market stability. By implication, there could not be agreement on whether or not a mechanism—in this case the Tobin tax--to shrink the size of the (highly liquid or speculative) financial market

was a "good" or "bad" thing. A similar debate where there was no consensus centered on whether liquidity increased volatility or volatility increased liquidity.

A significant difference emerged between participants from developing or emerging market countries and those from developed countries. In terms of developing countries, Dr. Kim's paper is very revealing. His first concern was on the need to promote greater capacity among the staff in developing country governments. He also underscored the basic need to collect taxes domestically. In many countries, it is the culture not to pay taxes, and even some of the best NGO activists are proud they don't pay taxes. It is a truism that governments require money to function; to increase government capacity will require more money. In many emerging market countries such as Korea, governments are desperate for any money from any source. The governments are not fussy about whether the funds come from the IMF or the private sector, whether it is liquid or illiquid, or short-term or long-term.[1]

Another difference in perspective from across the developed-developing country divide is about reducing the importance of IMF funds in the hope of reducing its leverage. Many developing countries would oppose this reduction simply because it would close off another source of needed outside funding.

Unclear

In any debate the contestants can agree or disagree, and then there is a third category where the meanings of words and goals are simply unclear. First of all, the campaigners need to help us get more clarity on the goals of the Tobin tax. Is it to enhance the stability of the world's financial market or to generate revenue? Can it be both?

There were several issues that came up in the conversations here that for the uninitiated bordered on confusion. For example, under the heading of stability or market regulation multiple goals were expressed, which may or may not be consistent:

- Are we dealing with all tools of financial transactions or just the foreign exchange portion?
- Are we talking about just currency transactions?

[1] The capacity of governments and revenue strength are linked, and this link extends to the need to expand domestic demand-led growth, the subject of Tom Palley's presentation at the Alternatives to Neoliberalism conference.

- Are we talking about protecting the role of central banks?
- Are we supporting reducing the size of the financial market?
- What happens if we reduce volatility? Or control short-term speculation?
- Are we talking about changing the debt maturity structure?

Again, the participants agreed on the need to regulate financial markets. This is a goal that can generate some political momentum. However, as soon as particular taxes were proposed, which Pollin & Baker wrestled with, technical questions emerge. The participants were not in agreement regarding the appropriate role and authority for central banks.

Before concluding I would like to make two observations of my own. Representing my own views, I found the discussion about how to divide the revenue premature. We still lack the political will to agree to the Tobin tax in principle, much less the technical mechanisms to implement it. Once established, creativity will blossom in terms of tax avoidance. If the political will is there, they won't get away with it. Only then will there be funds to disperse, and once those funds are in place the serious political fight will begin, and the contest will be between what is politically best and what is morally best. There are different options for what to do with the revenue. For example, the best, from a moral perspective, would be to give it to the poorest people on the globe for the essential common good of eradicating poverty. But, this may be the hardest to sell politically. The American people may be willing to tax the greedy villains of Wall Street who took their pensions, but would these same Americans then turn around and give the money to Africa? In today's political climate, this is a low probability.

My second observation, based on the discussions during this conference, is that the trends toward regional economic cooperation could go in two directions. They could be really constructive, as indicated by Dr. Kim with regard to trends in Asia, or highly problematic as evidenced by the expansion of the North America Free Trade Agreement (NAFTA) model to the Free Trade Area of the Americas (FTAA) and the Central America Free Trade Agreement (CAFTA). Trade and finance are becoming more intertwined through the regular inclusion of GATS language on trade in services, especially financial services.

Conclusion

In conclusion, as the Chair of the New Rules for Global Finance Coalition, I would like to thank all who prepared the conference, those who presented papers, and those who were active audience members. I appreciate the technical brainpower, the campaign energy and drive brought to the issue. Our efforts to deepen our understanding of the Tobin tax laid bare a common sense foundation: financial markets must be regulated because unregulated markets harm people and the environment and are ultimately inefficient. The Tobin tax is one tool of market regulation. It may be a very effective tool to launch the policy discussion about the overall problem of financial market regulation. We have seen that the Tobin tax is campaignable. It is an area where we at New Rules have consensus, in addition to the consensus we achieved in the 2002 conference on Alternatives to Neoliberalism. We have a consensus on a set of policies that help the poor. We have a consensus that we need some form of capital controls. And, we have consensus that we need to put to rest the Neoliberal model.

Appendix A.

PRIMER ON TOBIN TAXES

Maureen Hinman
University of Denver

In 1972 Yale University Professor and Nobel laureate James Tobin made his original proposal for an internationally uniform ad valorem tax on spot currency transactions at his Janeway Lectures at Princeton (Tobin, 1996). The foreign exchange transaction tax which Tobin proposed[1] (commonly bearing his name as the "Tobin tax") had two fundamental goals as conceived, first, decrease volatile exchange rates by curbing speculative short-term capital flows in the foreign exchange market and by doing so, increase national macroeconomic and monetary policy autonomy which had become constrained in the international environment of floating exchange rates and free capital mobility. Nonetheless, Tobin's proposal lay dormant for a number of years until it saw resurgence in the 1990s.

In response to repeated financial crises[2] and in the context of exchange rate volatility common to a system of floating rates there emerged a growing literature[3] in support of Professor Tobin's 1972 proposal, as a means of taming what some saw as excessively volatile foreign exchange markets. The debate has evolved to encompass four

[1] Tobin's idea evolved from Sir John Maynard Keynes original proposition for a Securities Transaction Tax (STT) in order to tame volatility in securities markets. Keynes's arguments for a STT are found in his 1936 piece *The General Theory of Employment, Interest, and Money*.

[2] 1994 Peso Crisis in Mexico, 1997-98 Asian Financial Crisis, 1998 Russian Ruble Crisis, 1998 Hedge Fund LTCM, 1998 Brazil, Turkey 2001, and Argentina 2002.

[3] See Halifax Initiative (1996), Harribey (2001), Haq, Kaul and Grunberg (1996), Palley (1999, 2000), Paul and Wahlberg (2002), Symons (1999),Wahl and Waldow (2001).

predominant points of contest briefly stated: economic desirability, technical practicability, revenue outcomes and purposes, and political feasibility. It is the intention of this paper to delineate the key economic, technical, and political arguments and issues, which surround the current debate regarding the feasibility of a Tobin style currency transaction tax. Section two will outline the essential plan for a Tobin tax, section three will elucidate the theoretical framework in favor of a Tobin tax, section four will describe arguments against the economic desirability of the Tobin tax, section five will discuss technical feasibility and outline some recent proposals for implementation, section six will discuss debated possible outcomes of tax revenues and the purposes for which revenue should be destined, section seven will present arguments of the political feasibility of a Tobin tax and section eight will conclude.

The Mechanics of a Tobin Tax

In order to limit the scope of speculation Tobin proposed the imposition of an international ad valorem tax on all spot currency transactions[4]. The tax in theory would curb short term speculative trading, especially speculative round-tripping by essentially raising the transaction costs of foreign currency exchange to a point where they would eclipse profitability from small exchange rate fluctuations, but not hinder transactions executed for the "real" economy such as trade and foreign direct investment. The logic is that by levying a modest tax on each foreign exchange transaction (most suggestions are less than .5%) it could deter short term investors who wish to capitalize on small movements in exchange rates since the cost of their speculative "round-trip" will be greater that the expected rate of return on small price movements in international currency markets. For instance, a Tobin tax of .25% would imply that a twice-daily round-trip would carry an annualized effective rate of 365%, while a round-trip of twice a year would only carry and annualized rate of 1% (Bird and Rajan, 1999). As investment horizons increase say for trade or foreign direct investment ventures the effective rate of the tax decreases and becomes absorbed in to other transactions costs associated with long-term investment and trade.

[4] Tobin later expanded the scope of the tax to cover forward transactions as well; see Tobin (1996).

Theoretical Framework for an International Currency Transaction Tax

Tobin proposed the imposition of an international tax on foreign exchange transactions to achieve two fundamental objectives. First, to reduce short-term speculative currency flows by making short-term trades more costly. This subsequently, is supposed to tame exchange rate volatility; inducing exchange rates to reflect, to a greater degree long-run fundamentals as opposed to short-term expectations. The second goal is to allow for greater macro-economic and monetary policy autonomy, by reducing pressures to maintain counter-intuitive policies for the purpose of outward appearances.

Within the neoclassical model a correctly functioning market's current and future prices of foreign exchange are determined by investment decisions based on fully informed analyses of present and expected future economic fundamentals. In this view, exchange rates reflect the fundamentals of a given economy. In the absence of full information however, markets movements are based upon guesses and assumptions of traders or as Tobin put it, "In the absence of any consensus on fundamentals, the markets are dominated-like those for gold, rare paintings, and- yes, often equities- by traders in the game of guessing what other traders are going to think." (Tobin, 1978) Speculators, in contrast to theory, act upon imperfect information driven by the absence of good estimates of projected equilibrium rates.

When speculators act in concert based on their collective guesses of how everyone else in the market will be reacting to new information they have the collective power to shift prices. Short-term speculators profit by making speculative guesses against very small shifts in foreign exchange rates and then converting back to the original currency once the change has occurred. This 'round-tripping' generally takes place over a short period of time like the span of a day, week, or month. It is estimated that more than 40% of all currency transactions involve round-trips of fewer than three days (Kasa, 1999) while 80% involve round-trips of less than a week (Tobin, 1996). Another form of short-term speculative behavior is known as "noise trading" where speculators execute trades based on price dynamics rather than underlying fundamentals. Noise trading is usually associated with institutional investors such as portfolio managers, private pension funds, insurance companies, mutual funds, hedge funds, and corporate treasurers whose predominant interest is to keep the value of their portfolio high relative to others in the short run. To the extent that speculative short-termism creates a self-fulfilling dynamic in the pricing

mechanism, it is believed to be the culprit of day-to-day volatility in currency markets. The build up of short-term expectations through speculative behavior can come to feed long-term beliefs and daily speculation can thus cause the build up of a speculative bubble, which will eventually bust and may precipitate a currency crisis. Currency crises have proven to be especially costly to developing countries, whose markets lack the depth to withstand and rebound from mass investor exit.

Volatility and misalignment of exchange rates in relation to the fundamentals becomes problematic for governments and central banks attempting to pursue independent fiscal and monetary policy in an international and open economy. Macroeconomic policy makers, under the impetus to encourage investment maintain policies of fiscal austerity, and monetary tightening. These policies intend to keep currencies from depreciating and interest rates attractive to investors, and can have negative effects on the domestic real economy. Fiscal tightening can be at the expense of social endeavors and an appreciated exchange rate lowers trade performance since domestic goods become more expensive on world markets.

Economic Desirability of the Tobin Tax

There are four general points that are regularly debated as to the economic desirability of a Tobin tax. The first concerns the very nature of speculation and the degree to which, it creates price distortion and volatility. The second concerns the ability of the Tobin tax to deter drastic volatility and/or currency crises. The third point relates to possible benefits or costs a Tobin tax might have for the real economy. The fourth point concerns whether a decrease in the volume of short-term transactions will create a corresponding decrease in price volatility.

Speculation: Efficiency Increasing or Decreasing?

Under the neoclassic orthodoxy a speculator's function is to assist the market pricing mechanism by driving prices towards fundamental equilibrium. In this respect speculators can be seen as informed investors working on perfect information of the underlying fundamentals of the economy. Speculators, knowledgeable of what future equilibrium should be, drive prices toward that point. This is to say, they buy high and sell low. Their reactions then are based on the acquisition of new information, which helps keep prices in line with the

fundamentals. For instance, if a speculator knows a currency to be over valued, she will expect that in the future its value will decline. By selling this currency she knows to be overvalued, she contributes to its depreciation and thus it's return to equilibrium. In this respect speculators can be seen as efficiency enhancing.

While it is conceded that speculators have a tendency to overreact based on new information and force prices beyond equilibrium, this price overshooting[5] is expected to be corrected in the long-term as more market information is revealed. In this view a Tobin tax would harm market efficiency by deterring the vehicle, which drives prices to the equilibrium point. Furthermore, since there is no way of distinguishing speculative trades from other short-term trades such as hedging[6], there is a limited ability to prove that short-term speculation is the cause of price volatility.

An Ineffective Deterrent

Many have called the Tobin tax an ineffective deterrent since the tax would have to be quite large in order to deter large-scale speculation against major shifts in exchange rates. For example, a devaluation/depreciation of 10% on a given day would translate into an annualized return of over 300% (Kasa, 1999) for those betting against that particular currency, a profit that would swamp a small Tobin tax. The Mexican Peso fell by approximately 60% in the winter of 1994-95; a Tobin tax exceeding 23% would have been necessary to deter the run (Davidson, 1997). There is also little support for the tax's deterrent quality if there is fear that overall macro-economic fragility has made financial crisis imminent resulting in mass currency flight. Furthermore, while the economic orthodoxy opposes the view that speculation in and of itself threatens the stability of markets, it does not deny the odious nature of large-scale speculators who bet against currencies in order to profit from their collapse. Perpetrators of this type of activity generally have more to gain from a crash than to lose from a relatively insignificant Tobin tax.

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[5] Overshooting occurs when investors over-react to new information revealing changes in the fundamentals. This overreaction drives prices beyond the change warranted by the change in the economic fundamentals.

[6] Hedging is the act of covering the risk of holding an asset whose value may decline over time.

Volume and Volatility

There also exists debate as to the correlation of trade volume and price volatility. The Tobin tax aims to reduce short-term foreign currency flows (irrespective of the type of flow speculative or otherwise) and in this reduce the overall volume of trades (effectively removing excess liquidity from the market) in the belief that a reduction in volume will remove the speculative element and create a corresponding reduction in price volatility. The linkage between volume of currency trading and currency volatility is contested.

Opponents[7] of the tax assert that there is a linkage between trade volume and volatility although the line of causation is reversed. That is to say that price volatility creates trading volume as traders react to new information and changes in prices. Speculators are seen as enhancing the market by providing short-term liquidity essential to efficient markets, therefore decreasing volatility. A decrease in trade volume is effectively a decrease in liquidity, which may contribute to greater volatility. This is because thin markets[8] have been associated with large price volatility (Palley, 2000). The logic being that in thin markets the direction of opinion only moves in one way and diversity of opinion is needed in order to supply the market with both buyers and sellers. The thinning of the market through a Tobin tax would mean that each trade executed has a larger impact on price, per haps increasing volatility.

Some indirect evidence using securities transaction taxes as a proxy is present in the literature. In these instances there is a limited or negligible effect of uncertain direction on volume reduction and price volatility. The UK stamp duty has shown that it tended to lower the price of securities but had no effect on volatility, while a cross-country study found no significant influences of securities transaction taxes on stock market volatility (OECD, 2002; Oxfam Great Britain, 1999). These findings lead some to believe that the causes of market volatility cannot be explained by short-term speculative activity alone. Alternatively, supporters of the tax find a link between low transaction costs, increased volumes of trade, and increased market volatility, as suggested by evidence using NYSE and NASDAQ stock market data as a proxy (Palley, 1999).

Effects on the Real Economy

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[7] See Davidson, Dodd, FBE, ICC

[8] Thin markets are those characterized by low transaction volumes.

A Tobin tax penalizes all high frequency trading without discriminating between speculative trades and those that help to anchor markets by providing risk coverage to rational, risk adverse investors. Some short-term transactions are closely interlinked with the real economy like hedging trade and investment against exchange rate risk (Wahl and Waldow, 2001). The tax could be more burdensome on hedgers than speculators since single hedging operations designed for arms length trade can demand four or more currency transactions, each that would be taxed (Bird and Rajan, 1999). Speculative round-trips on the other hand only demand two transactions, one to leave and one to return to a currency. Tobin tax interference of hedging functions for trade could mean that .5% Tobin tax would be the effective imposition of a 2% universal tariff on all goods and services trade in the global economy (Davidson, 1997).

Additionally, long-term market liquidity could be compromised, since dealers (those responsible for providing the market with liquidity also know as market makers) process large orders by finding other dealers or brokers to take their positions. Market makers "make" the market by posting daily bid or ask prices[9] at which, other dealers can trade throughout the day. This adds to market liquidity and price stability since parties seeking to buy or sell currency have a guaranteed counter-part and price to handle the opposite end of the transaction. Dealers can be described as risk averse and therefore do not hold foreign currency positions, but commonly seek out positions upon client demand. Intermediate trading in order to execute an individual foreign currency order can exceed the size of the original order. If each of these intermediary transactions is taxed (as they would be under a Tobin tax plan) then the tax is effective in reducing the amount of liquidity demanded by the market (OECD 2002).

Proponents of the tax argue that since the tax would decrease volatility and result in more stable exchange rates there would be no need for investors to hedge against their foreign denominated positions. This would lower the cost of foreign currency denominated investments reducing the risk coverage costs associated with international trade and foreign direct investment. In this view, it is the speculators who present a negative externality to fundamentals investors by creating an environment of currency instability, which must be hedged against.

[9] A bid price is the quoted price at which the dealer will buy a particular currency regardless of amount, an ask price is the quoted price at which the dealer will sell a particular currency.

Spahn's Two-Tier Tobin Tax

Bernard Spahn (1996, 2002) suggested a two-tier tax as an alternative to simple Tobin tax. The second tier would provide flexibility to raise the effective tax rate during times of high currency volatility, by administering a surcharge when rates move beyond pre-calculated Upper and lower limits. While the first tier, comprised of the traditional Tobin tax would act as the administrator and monitor for application of the surcharge.

The proposed benefit of this system is that it would succeed where the Tobin tax is said to fail, in so far that a simple Tobin tax may not be a sufficient deterrent in time of high volatility when arbitrage gains from speculation are great. This mechanism could be an effective circuit breaker when currency risk is high and a crisis is imminent. By temporarily cooling hot money flows, it could provide policy makers with a window of time to readjust their macroeconomic policy or to finance a bailout.

Technical Feasibility

Opponents to the Tobin tax on technical grounds cite that the tax would be difficult to implement globally and hard to enforce. A common argument is that in order for the tax to be feasible it would necessitate the creation of entirely new economic infrastructure for collection, monitoring, and redistribution, which would be both difficult and costly. Others believe that the tax, if instituted, would be easy to evade unless enforced globally. Evasion would manifest itself through two means, either, through offshore trading centers where the tax is not executed or through substitution of assets such as Treasury Bills or derivatives. How, where, and who would collect the tax in an effective manner is a fundamental question. Two proposals have been put forth to in this respect.

Schmidt Plan for Collection

Schmidt (1999, 2000) has outlined a plan for Tobin tax collection, which would exploit existing financial infrastructure designed for payment settlement on the inter-bank level. This is in contrast to other proposals, which have suggested that the tax be collected at the trade site in order to halt evasion by using off shore methods (the logic is that

payments repatriating from offshore locations would pay a penalty tax as a disincentive to trading offshore).

The existing infrastructure for payments settlement is increasingly formal, centralized and regulated. There are a number of ways this infrastructure can be exploited to levy a Tobin tax. Settlement functions were established by central banks to prevent settlement risk, which occurs when one party in a transaction fails to pay their portion of the deal before it is settled. This risk is eliminated when two payments are matched, traced to the original trade (regardless of geographic location) and made simultaneously (known as Payment vs. Payment settlement or PVP). Real Time Gross Settlement (RTGS) systems process gross payments and support PVP settlement for domestic transactions and may be a means to levy a Tobin tax on the national level. Domestic payments are matched and traced to the original trade and then processed simultaneously. If a payment fails to be matched to another domestic payment it is likely to be a foreign exchange payment and therefore can be taxed.

Additionally, an international structure, the Continuous Linked Settlement (CLS) Bank, is being developed to process settle a number of currencies through a single system. Its operations are twenty-four hours a day and are linked to domestic payment systems to support PVP settlement for foreign exchange transactions. The CLS Bank's settlement operations would be a logical point to levy a global Tobin tax.

Settlement site taxation could also avoid the threat of offshore tax evasion since offshore banks also protect themselves against settlement risk. Offshore banks host netting systems which are used total or "net" transactions and to support PVP settlement. Payments for these transactions are still made through the domestic payments system of the relevant currency. Since netting systems need the cooperation of Central Banks in order to operate they are subject to Central Bank regulation. Central Banks therefore could require the imposition of a Tobin tax in off shore netting systems.

By exploiting these institutions and charging Central Banks with tax collection and monitoring responsibilities a Tobin tax could be technically feasible. The benefits of this system would be universal coverage regardless of where a foreign exchange trade is executed geographically and in spite of the financial instrument used (since the payment portion would be taxed.) It would also be inexpensive to implement in so far that it would exploit existing financial infrastructure.

UN-Based Implementation

Round (2001) suggested that implementation and administration be the responsibility of the United Nations. This proposal is based on the institutional efficiency of other UN projects, which have created financial mechanisms to collect, allocate and distribute resources, namely, the Global Environmental Facility and the Multilateral Fund for the Montreal Protocol.

Under this model a democratic and representative body defines the legal and administrative framework in addition to articulating policy priorities through the treaty mechanism. The convention would negotiate among signatories the tax rate; the percentage allocated per country, general formulae, guidelines, or priorities for revenue disbursement. This model has the benefit of one-country-one vote equality, but the draw back of being subject to national ratification.

A second smaller body is charged with the running of day-to-day operations and is accountable to the guidelines predetermined by the former. This financial mechanism should set the terms of revenue reallocation based on incoming receipts and ongoing negotiations between participating governments. Each country would be responsible for establishing a national system of collection to be funneled to the UN sanctioned fund management system. Round (2001) states that collection on the national level should not be difficult to institute since most Central Banks and domestic payments systems already track foreign exchange transactions. The mechanism would serve as the financial gatekeeper, channeling and overseeing revenue disbursement to agencies predetermined by the treaty mechanism.

Revenue

An issue often discussed, and for some, the prime focus of the Tobin tax is the revenue it would generate. Debate is centered on how much revenue can be expected from a global Tobin tax, and towards what purposes the tax might go.

The amounts that might be generated are often contested. In 2001 a survey of market activity conducted by the Bank for International Settlements estimated daily trading volume at approximately 1.25 trillion dollars (OECD 2002). Upper end estimates suggest figures in the billions annually (but accurate approximation is difficult to determine) based on the massive amount of trade volumes in foreign exchange that if instituted would become the tax base. The trade off is that if the tax is effective in its economic goal of reducing trade volume,

the tax base will be significantly diminished along with revenue potential. However, Palley (2000) points out that if the impact is small and the demand for currency transactions unchanged the tax is still justifiable through theory of optimum public finance, which says that governments should tax social ills (in so far as speculative trading creates a negative externality for fundamentals based investors.) From this perspective the tax is justifiable whether it succeeds in its economic goals or not.

There is also a great debate as to how revenues should be used. It is generally debated whether revenues should be used for national expenditures, international expenditures or a combination of the two. Tobin (1996) himself thought the tax revenue should benefit under-funded international organizations such as the IMF or the United Nations. It was his original suggestion that the revenues be used to assist the IMF as international liquidity provider and lender of last resort. Civil society argues that revenues should provide funding for global goods. The popular suggestions to that effect are funding for global environmental projects or for development assistance to poor countries. Others suggest that the revenue would be most productive if it were used to fund the Bretton Woods Institutions and the United Nations in order to remove the de facto veto power, which wealthy countries have within such institutions, thereby making them more democratic.

Political Feasibility

Political obstacles could be the most formidable barriers to the implementation of a Tobin tax. The common demand that it be universal necessitates adoption of the policy on a global level, which is currently an unprecedented phenomenon. Others feel that the tax will still be effective if major financial centers chose to adopt it. There is also discussion that if the United States adopted the policy unilaterally it would have the coercive powers to draw the rest of the world in as well.

It is often mentioned that a viable alternative to a global Tobin tax is to get the top financial trading centers to adopt it since the majority of international currency trading takes place among them[10]. For example, the U.S. the EC and Japan account for 90% of all currency transactions (Wahl and Waldow, 2001). Using this logic, the imposition of the tax

[10] Global Share of Transactions 2001: UK 32%, USA 16%, Japan 9%, Singapore 6%, Germany 5%, Switzerland 4%, Hong Kong 4%, Australia 3%, France 3%, All Others 18% (Spahn, 2002).

on a regional level, through the dominant trading areas, would be a sufficient way to gain tax coverage on the majority of transactions taking place globally without the strain of attempting to garner universal support. In the event that a tax is adopted within particular regions, these areas could also administer penalty taxes on those outside the Tobin tax area. However, even getting an agreement through the G7 would be a great achievement, since there is little political will in the wealthiest of countries to limit the scope of business and financial sectors.

Another idea put forward (Baker, 2000) is that the United States could unilaterally impose a Tobin tax, and subsequently coerce other major markets to comply. The logic behind this proposition is that the U.S.A. often acts unilaterally on international issues and in doing so forces others to follow (such as the refusal to move forward with the Kyoto Accords in 1997.) A unilateral adoption of a Tobin tax by the United States would not be effective in reducing global trade volumes, but would be seen as a stepping-stone to building a global agreement.

Nonetheless, the U.S. could be a substantial obstacle to any sort of Tobin tax. The business and financial sector would vehemently oppose any type of legislation, which would restrict future profits, and one must weigh the power that these sectors have to influence policy in the United States (as in all developed countries.) Decreased bank profits would also mean decreased interest rates on savings that could make such a policy unpopular in general (Symons, 1999). Furthermore, if the tax were a U.N. administered project it might be prohibited by U.S. tax law which states that all U.S. contributions to the United Nations are conditional in that "the UN is not engaged in any effort to implement or impose any taxation on United States persons in order to raise revenue for the United Nations or any of its specialized agencies" (Public Law 106-113).

The revenue, which a Tobin tax could generate, will complicate any discussion of political feasibility. It is unlikely that wealthy countries, which would generate the vast majority of revenues, will be inclined to dedicate those earnings to international purposes. If the revenue is not oriented towards global goods, the tax is likely to lose the support of civil society. Additionally small economies might want to avoid a Tobin tax in order to profit from becoming a tax haven.

Some suggest that the revenue be divided in order to mediate between interests. Kaul and Langmore (1996) suggested that low, middle, and high-income countries retain 100%, 90%, and 80% of taxes collected respectively in order to deter low-income states from becoming tax havens and persuade high-income countries to come on board. Others

(Oxfam Great Britain, 1999) have suggested that half of revenues should be for domestic use and the other half for international purposes in order to simplify the process. Either way, it would be difficult to persuade developed governments whose financial centers generate the bulk of the revenue, to commit any portion of a domestically collected tax for international purposes.

Conclusion

The preceding has been a brief perusal of the impetus for and logic behind the institution of international currency transaction taxes as well as a discussion of the predominant points of contest regarding the universal adoption of such a tax. The purpose of this paper has been to delineate the basic premises for which individuals either support or oppose the imposition of a Tobin tax in hope that those who have prior-to been unfamiliar with this debate may also contribute to future discussions regarding the viability of a Tobin tax. This piece is by no means exhaustive, but is intended to encourage continued research and dialog as the debate behind the Tobin tax ripens.

Useful Websites for Research on the Tobin Tax Debate and International Financial Markets

The Bank of International Settlements	www.bis.org
Financial Policy Forum	www.financialpolicy.org
War on Want	www.waronwant.org
Halifax Initiative	www.halifaxinitiative.org
New Economics Foundation	www.neweconomics.org
New Rules for Global Finance Coalition	www.new-rules.org
ATTAC	www.france.attac.org
Tobin Tax Initiative	www.ceedweb.org

Glossary

Derivatives: A type of financial instrument whose value is 'derived' from the price of some underlying asset (e.g. an interest level or stock market index). They are designed to help investors hedge (protect themselves against the risk of price changes) or as speculative investments from which great profits can be made.

Exchange rates: The price of one country's currency relative to another.

Forward Transactions: The promise to buy or sell currency at a specified price on a specified date.

Fundamental Trading: Buying and selling of financial assets based on the underlying determinants of the value of the asset. Opposite of 'noise' trading.

Hedging: Covering the risk of holding an asset whose value may change over time

International Financial Architecture: The policies, programs and institutions required to manage global of finance.

Lender of last resort: An institution, usually a central bank, that can step in and lend funds to a bank facing a panic (sudden withdrawal of funds by depositors) or when no other institutions will lend to an institution considered high-risk or near collapse.

Liquidity: The availability of sufficient resources to meet payments and obligations needs.

Noise Trading: Buying and selling of financial assets based on price dynamics, using technical analysis or private information.

Settlement Risk: The risk to one party that the other party will not pay their portion of a trade.

Speculation: Unhedged foreign currency liabilities.

Spot Transactions: A currency trade made at the current quoted exchange rate and settled within forty-eight hours thereafter.

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Appendix B.

PRIMER: TRANSACTIONS TAXES, OR THE TOBIN TAX

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Transactions taxes, briefly stated, are small tax rates applied to transactions in foreign currency and possibly also to transactions in securities, derivatives and other financial instruments.[1]

The argument in support of the transactions tax proposal is as follows. One premise is that a large number of transactions, especially in foreign currency markets, are conducted by a "speculator" and the consequence of their activity is to generate greater volatility in exchange rates. Alternatively, foreign exchange markets are used by speculators as a necessary step in their cross-border speculation in developing countries – leading to what is called "hot money" – and this causes greater volatility in developing financial markets.[2]

Based on this premise, the imposition of a transactions tax will raise the cost of speculation and in turn lower the volume of transactions.[3] In turn, this reduced trading volume will reduce the volatility in prices of the instrument or instruments being traded. Internationally it will reduce the volume and volatility of capital flows – especially those to developing countries – that begin with or otherwise require transactions in foreign currency. Furthermore, the reduced volume of transactions

[1] A few good summaries of the proposal include: Tobin (1978), Palley (1999), and Pollin, et al (2001).
[2] The premise has been criticized on a theoretical level by Randall Dodd (2002), Paul Davidson (1997, 1998), and on an empirical level by Habermeier and Kirilenko (2001) amongst others.
[3] There might need to be some experimentation with the tax rate in order to get the desired effect.

will discourage speculative attacks on fixed exchange rate regimes and enhance the ability of central banks to maintain or defend regimes.

In addition to the reduction in price and flow volatility, another important benefit of the transaction tax would be to raise substantial amounts of revenue that could potentially be directed towards financing additional foreign aid or investment in developing countries. Even with the imposition of a small tax rate and a substantial reduction in trading volume, the remaining volume would potentially raise a large amount of revenue that is estimated in the hundreds of billions of U.S. dollars.

The idea is most closely associated with the late Nobel laureate for economics, James Tobin, and is often referred to as a Tobin Tax.[4] As he described it in Tobin (1978), "my proposal is to throw some sand in the wheels of our excessively efficient international money markets." His primary motivation for the policy, however, was not to reduce volatility or finance development, but rather to enhance the effectiveness of monetary and fiscal policy. The "efficiency" of capital mobility was otherwise diminishing the effectiveness of those policies, especially monetary policy whose impact occurred largely through its effect on exchange rates and their impact on the trade balance.

However the idea can be traced back to at least 1936 when Keynes wrote in *The General Theory* about his opposition to the distortions of speculators in financial markets.

> *"The introduction of a substantial Government transfer tax on all transactions might prove the most serviceable reform available, with a view to mitigating the dominance of speculation over enterprise in the United States."*[5]

Keynes' views towards speculation were most likely formed prior to the passage of Securities Act of 1933 and the Securities Exchange Act 1934. That legislation introduced reporting requirements to financial markets in the U.S., which changed market fundamentals by providing for greater market transparency and thereby the basis for informed investing instead of that based on rumor and hearsay. Even though Keynes visited New York City in the summer of 1934, it is most likely that the effect of this new legislation did not attract his attention,

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[4] The original paper was his 1972 lecture that was published as Tobin (1974), but a more readily available explanation can be found in Tobin's Presidential Address to the Eastern Economics Association and published as Tobin (1978).

[5] Keynes (1936, p. 160)

and neither the legislation nor its consequences were mentioned in the *General Theory*, the first draft of which was completed in late 1934.[6]

The idea was more recently picked up and pursued by such notable economists as Larry Summers, who was later to become U.S. Treasury Secretary, and Joseph Stiglitz who was to become Chair of the Council of Economics Advisors and Nobel Laureate.[7] Summers has since changed his view. Whereas Keynes had based his argument on a "behavioralist" approach to financial markets, Summers and others based theirs on a "noise trader" model of financial markets.

The transactions tax rates most usually proposed as remedies to volatile international financial transactions range between 0.05% and 0.25% of principal. Although the rate is small, it would amount to a very large proportional increase in current transactions costs because the bid/ask spreads in the interdealer market are between one and four ten-thousands of principal (0.01%-0.04% or 1-to-4 pips).

Transactions taxes already exist to a small and limited extent in the U.S. They are technically treated as "fees" and are applied to transactions in publicly traded securities and exchange traded futures and options. The long standing transactions fee for securities[8] of 1/300 of 1% – 0.0033% – raised $1,090 million in FY2000. On January 16, 2002, President Bush signed into law H.R.1088 that lowered securities transaction fees to 1/883 of 1% – 0.0012% or $12 per $1,000,000 – of the value of the transaction in securities. The fee is collected by the Self-Regulatory Organizations – namely the New York Stock Exchange and National Association of Securities Dealers – and goes to cover the cost of the Securities and Exchange Commission.[9]

A somewhat similar fee is charged on the public trading of futures and options on behalf of customers (non-exchange members). Such public trading amounts to 23% of the total trading volume on U.S. futures exchanges.[10] The fee is charged by the National Futures Association in order to cover is operating costs. The fee was recently lowered on April 1, 2002 to $0.10 on round-trip trades in futures and $0.05 in options (those fees are scheduled to be reduced to $0.08 and $0.04, respectively). It is not a tax or a fee required by federal statute,

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[6] Sir Roy Harrod (1951) states that "By the end of 1934 the first draft of the *The General Theory of Employment, Interest and Money* was complete."
[7] See Summers (1990) and Stiglitz (1989).
[8] The fee was introduced in Section 31 of the 1934 Securities Exchange Act, and they are known as Section 31 fees on transactions.
[9] See CRS reports by Jickling (2002) and Kiefer (1990).
[10] According to the National Futures Association, 2002.

but rather a fee imposed by the NFA based on its authority as a Congressionally authorized Self-Regulatory Organization.

Both the securities and exchange-traded derivatives fees (or taxes) are very, very small – far less than one basis point or 1/10,000 of principal or notional principal. They are in fact so small that their existence should not bear significantly on the debate because they have no apparent effect on impeding transactions volume in U.S. equity and futures markets where volume is the highest in the world. They are mentioned merely to recognize them as a precedent in highly liquid financial markets. And as a precedent, it is worth noting that the derivatives transaction fee is *not* assessed on transactions between exchange members, i.e. on the core, liquidity trades in the market.

The goals, or intended benefits, of transactions taxes include the following:

1. Reduce the volume of foreign exchange (and possibly other) transactions, and thereby reduce the volatility of foreign exchange rates (and possibly other prices).
2. Reduce the returns to short-term speculation.
3. Reduce the amount of speculation and the incidents of speculative attacks on currency regimes.
4. Reduce the volume of speculative flows of "hot money" and other short-term investments.
5. Reduce the volatility of international capital flows and the price volatility in markets for foreign exchange and related financial instruments.
6. Encourage long-term relative to short-term investment.
7. Raise substantial revenues for development and other purposes.

These goals are highly laudable, and they help explain why there are so many supporters of this proposal. However, there are also problems with the proposal. They include the tremendous political challenge of raising a uniform tax around the world, the feasibility of administering the collection and distribution of the tax, and more fundamentally whether the premise for the policy is correct and thus whether the policy would in fact be effective in achieving its claims.

Political problems include:

1. Requires worldwide agreement and coordination. Many countries must join in order to avoid substantial leakages. The rise and rapid

growth of the Eurodollar market is an indication of the volume of transactions that can occur outside a system of central bank members. And size of assets deposited in off-shore tax havens is another indication of the potential to move trading activity outside the Euro-Yen-Dollar realm of regulation.

2. The free-rider problem. Any effort to arrange such a tax treaty will have to overcome the incentives for free riders to refuse participation or to cheat once they agree to join. Enforcement efforts will have to overcome greed and ingenuity.
3. There are powerful vested interests that have not yet begun to oppose transaction taxes of any sort.
4. There is a very powerful, if not overwhelming, opposition to any tax increase in the United States, and without the U.S. the proposal could not be successful.
5. Most of the revenue will be collected by the wealthy countries. More than half of trading occurs in London and New York, and 84% of spot trading involves U.S. dollars. It will be difficult to direct those revenues raised in those locations against the dollar or other major currencies towards developing countries or development purposes.

Administrative and enforcement problems include:

1. Enforcing the tax across national boundaries.
2. Enforcing the tax across other markets. A transactions tax will need to apply to a wide array of financial instruments, especially derivatives, in order to prevent substitution.
3. Record keeping for all foreign exchange (or other) transactions across national boundaries and thus across national jurisdictions.
4. Enforcing distribution of tax revenue.

Uncertain policy outcome problems include:

1. It is likely to reduce liquidity, but unlikely to reduce volatility.
2. Reducing liquidity will possibly increase volatility.
3. It will not prevent speculation based on the likelihood of large changes in prices, i.e. speculative attacks on fixed exchange rate regimes.
4. It will not seriously discourage "hot money" flows or the carry trade (interest rate arbitrage).
5. It will not make foreign debt repayment any easier, and will likely make it more expensive.

6. It will further advance the U.S. dollar as the world currency. It will create incentives to further dollarize the developing world in order to save on transactions costs.

Summary

There are better policy tools than transactions taxes with which to address policy targets without generating unwanted collateral problems. Prudential regulations of financial markets, for example, will discourage, and to some extent limit, speculation, without reducing liquidity or raising volatility.

Transactions taxes create disincentives to trade, and this disincentive is especially strong for liquidity trading (which accounts for a large share of transactions in most financial markets). In contrast, prudential regulations can create limits and disincentives for holding large open positions – i.e. actually taking on the speculative positions – whereas transactions taxes raise the cost of building a speculative position by no more than trading for liquidity or for trade or long-turn investment.

Transactions taxes do not prevent, or for that matter even substantially discourage, speculative attacks or speculation in anticipation of a major currency devaluation. Even transactions tax proponents such as Tom Palley (2001, p. 74) admit to this short-coming. Prudential regulations would directly address this speculation in several ways, and it would do so in a way that would not make markets less liquid. And in so far that financial markets become less liquid, then they are more susceptible to manipulation or more prone to speculative attacks.

An alternative tax policy that would more directly discourage short-term speculation would be the imposition of a capital gains tax – one that might tax gains on short-term investments at a significantly higher rate than long-term investments – that would reduce the returns from both short-term noise trading and the speculative attacks that arise at the moment fixed exchange rate systems come close to crisis. Oddly, such a tax already exists in the U.S., but is absent in Europe where support for transaction taxes is higher. Its application and enforcement mechanism could be expanded and strengthened so that the compliance rate increased for international transactions. The extension of the tax internationally could be accomplished one country at a time, and the extension to the European Union and Japan could be justified in the name of tax equity or a level playing field.

Whereas transactions taxes would curtail so-called "noise trading," i.e. trading that might be otherwise described as intra-day speculation and inter-dealer liquidity trading, this is not the source of a major public policy problem. Even if noise trading were the cause of moment-to-moment or day-to-day volatility, it is not this high frequency volatility that is of substantial consequence to the macro economy and the public interest. Rather it is the greater magnitudes of volatility that occur over a longer horizon (or lower frequency). Arguments that noise trading is essential for "trend investing," which pays-off over the term of the trend, is inconsistent with the assumption of short-term round-trip noise trading. In comparison, prudential regulations would discourage excess speculation on both short-term fluctuations and longer-term trends.

"Hot money" or excessive capital flows in the form of short-term bank credits could better be discouraged by prudential regulation. Transaction taxes, even at the higher end of most proposals of 25-basis points,[11] would not substantially discourage developing countries from borrowing in dollars -- or U.S. banks from lending in dollars – when the interest rate differential is in the range of 500 to 1,200 basis points. Consider an example in which a 90-day foreign currency loan is advanced and repaid four times in a year. Assume each advance and repayment involved a foreign exchange transaction that is taxed at the 25-basis point rate. The eight transactions would add roughly 200-basis points to the cost of the investment. This disincentive may not be decisive spreads in excess of 500-basis points. More likely, the act of rolling-over loans would not require a foreign exchange transaction at the start and end of each loan. In this event, the tax would be applied only at the beginning and end of the year, at total of 50-basis points. This more plausible scenario suggests that the tax would be a small disincentive in comparison to potential spread from carry lending. In contrast, capital requirements that limit currency exposure would more directly discourage such excess borrowing and lending.

Automatic circuit breakers. One variant of the transaction tax, designed by Paul Bernd Spahn (1995, 1996), proposes a two-tiered transaction tax that would apply a very low tax rate during period of market normalcy (defined by an exchange rate band) and a very high tax rate that would be triggered by a surge in market volatility (defined by a movement beyond the band). Although Spahn is not supportive of

[11] Foreign exchange is normally quoted in ten-thousandths of a dollar ($0.0001) or a unit of some other currency. The term "pip" is often used to mean the last digit in the price (expressed in ten-thousandths) or some say a "principle interest point" which is equal to one ten-thousandth. In much of the literature on the transaction tax, the term basis point is used to refer to this ten-thousandth (0.0001 = 0.01%).

the currency transaction tax as proposed by Tobin, which he states would "impair financial operations and create international liquidity problems," he thinks the two-tiered tax would solve these problems. He proposes applying a very small transactions tax rate, between zero and one basis point, to currency transactions that occur when the exchange rate is within a band that is set according to an acceptable level of volatility. This would avoid impairing liquidity when trading is within the accessible range of volatility (although this means that it would not curtail the "noise trading" that is maligned by most transaction tax proponents). If the exchange rate moves beyond that band, meaning that volatility has increased beyond the acceptable level, then a substantially higher transactions tax would apply to the transaction (the higher tax rate would apply to the amount in excess of the band so that the effective tax cost would rise as the exchange rate moved further beyond the band).

This is an interesting innovation on the transactions tax proposal. It solves one problem by not impairing liquidity but it creates another. Investors are likely to accelerate their reactions to large movements in the exchange rate because they do not want to wait and get hit with a punitive tax. Faced with the threat of a high tax rate, investors will have incentives to sell as the exchange rate depreciates towards the band (or buy as it appreciates towards the band). The consequence of this incentive will be to increase the rate of selling (or buying, respectively) and not discourage it. Thus the Spahn proposal might in fact act as a *crisis accelerator* by inciting an early rush to sell (or buy) prior to the imposition of the higher tax rate.

In contrast, there are a couple of prudential regulations that have proven to be effective in the U.S. at curtailing disruptive or potentially explosive price movements in the market.[12] They vary between futures and securities markets, but they all involve price limits or "circuit breakers" that trigger a temporary or day-long cessation of trading or at least computer program trading. These have long been a feature of futures exchanges, and they were introduced to U.S. securities markets in the wake of the stock market crash in October of 1987.

Of course, prudential regulations will not raise tax revenue for development or any other purpose. If transactions taxes are viewed as a means of raising tax revenues, then it certainly is a potentially large tax base. Yet alternative tax policies, such as the capital gains tax, would

[12] It should be kept in mind that price limits are not intended to solve long-term problems or those based on major changes in market fundamentals, but are instead designed to prevent brief or very rapid price changes from creating problems in and of themselves.

not have the potential to impair the orderly functioning of financial markets.

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Appendix C.

New Rules for Global Finance

www.new-rules.org

The New Rules for Global Finance Coalition started in 1998 in response to the Clinton Administration's challenge to reform global financial architecture to prevent future financial crises such as the Asian crisis. The members of the New Rules Coalition--academics, activists, and policy makers from developed and developing countries--are committed to a future for all that is equitable and environmentally sustainable. We recognize that financial resources can and must be harnessed for this vision to become a reality. We further recognize that with the existing rules and institutions, myriad financial crises harm the poor and the environment first and most seriously. Therefore, through technically expert and inclusive dialogues we analyze existing financial institutions and processes to propose alternatives that will bring about more equitable and environmentally responsible results.

The agenda of New Rules is driven by its members and their contributed services. We have challenged the rigid and often counter-productive Washington Consensus policies. We explored the merits and feasibility of a currency transaction tax (Tobin Tax). In close collaboration with developing country governments and NGOs, we are committed to the implementation of the Consensus Statement of the UN Financing for Development conference. Four areas of New Rules current activity are: 1) added voice and vote for developing countries on the Boards of the World Bank and IMF; 2) implementation of ex ante poverty impact assessments of macro-economic policies mandated by

the IMF; 3) sovereign debt bankruptcy/restructuring mechanisms; 4) ensuring governments have latitude in the use of capital controls.

New Rules for Global Finance operates 2 listservs: one for dissemination of information globally; the second more targeted to Washington, DC with announcements of local events. More information on the New Rules coalition can be found on the World Wide Web at http://www.new-rules.org.