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SPECIAL POLICY REPORT 7

Lessons for Tobin Tax Advocates: The Politics of Policy and the Economics of Market Micro-structure

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I. Introduction

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 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 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.

II. 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 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 tax³ in a narrow or limited location would lead to a swift and sure relocation of trading activities.

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.

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.

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.

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 LIFFE⁴, but once lower cost trading was offered by the Deutsche Terminboerse (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 Freedonia⁶ 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 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.

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".

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?

III. 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 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 than in the U.S.⁷ – and this suggests that it is the lowest cost location. More importantly, the cost in the U.S. and every where 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 should 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 enabled 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 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-

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.

the-counter (OTC) derivatives markets for foreign exchange have already developed markets in non-deliverable forwards, swaps and options. 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 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.

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 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 that

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

¹¹) The term premium when applied to option 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 factoring 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.

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 than 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 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.

IV. 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-frequency¹⁵ 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 deter currency attacks. Tax rates in the 0.10% to 0.25% range will not be sufficient to

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

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.

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.

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 term 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 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 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 abstractions 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 decision 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.

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*

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.

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 that 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 number 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 yen incurs an interest expense¹⁸ 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 on 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 carry 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 necessarily economically useless because this activity 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 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

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.

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 a 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 direct 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 them to open or 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.

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

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

then sell when they move higher, then they dampen rather than exacerbate volatility. Only if they were trend investors, buying on upswings and selling 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 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.

V. Conclusion

The transactions tax is a bad idea politically, administratively and economically. It is bad politically because it is all but impossible. And if possible, then 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 proposal claims that it raises

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

on what \$200 billion? That is 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.

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

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