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To: Members of the Executive Board
From: The Secretary
Subject: Financial Transactions Taxes

The attached paper provides background material to the report on International Capital Markets - Developments, Prospects, and Key Policy Issues, which was circulated as EBS/95/75 on May 8, 1995, and is tentatively scheduled for discussion on Wednesday, May 24, 1995.

Mr. Shome (ext. 37319) or Ms. Stotsky (ext. 38541) is available to answer technical or factual questions relating to this paper prior to the Board discussion.

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INTERNATIONAL MONETARY FUND

Financial Transactions Taxes

Prepared by the Fiscal Affairs Department
(In consultation with other departments)

Approved by Vito Tanzi

May 8, 1995

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The recent volatility in world financial markets has generated interest in ways in which the tax system can be used to reduce destabilizing capital flows, and hence, to reduce securities price and exchange rate volatility. For example, there has been a revival of interest in a proposal by Professor James Tobin to tax foreign currency conversions (now often referred to as the "Tobin tax"). Some prominent political leaders have noted that taxes on financial transactions, such as the Tobin tax, could also generate significant revenue, which could be used to supplement existing multilateral assistance for social and economic development in developing countries. However, the advisability of such taxes is open to question. Many economists have discouraged their use, arguing that they would not reduce volatility in financial markets, but instead would impair the efficient functioning of financial markets, would be costly to implement, and would be easily avoided. 1/

In order to fully gauge the effects of a Tobin-type tax, it is useful to analyze it from the wider perspective of transactions taxes that could be imposed on domestic or international transactions. Domestic securities transactions taxes have been widely used in industrialized and developing countries, while taxes on international transactions have been less widely used (see the Table). 2/ The experiences of countries that have imposed these taxes, on both domestic securities transactions and foreign currency conversions, illustrate some of the difficulties that could arise in their application. Moreover, important theoretical arguments also weigh against the use of transactions taxes as a means to influence the behavior of domestic and international financial markets or as a way to raise revenues for international development.

Financial transactions taxes can take many different forms. In a domestic context, these taxes are usually excises levied on transactions in financial assets, including stocks, bonds, futures, options, and other derivative instruments. In an international context, these taxes are usually excises levied on transactions involving currency conversions (for transactions in financial assets, goods, and services). Although typically levied on an ad valorem basis, they may also be levied on a specific basis.

This paper examines the role of financial transactions taxes. Section I summarizes the main efficiency, distributional, and revenue issues that arise in the debate over transactions taxes. Section II discusses the economic issues that arise in their design. Section III describes the Tobin tax. It also presents alternative variants to the Tobin tax which have been proposed to curb speculative capital flows. In concluding, Section IV argues that, on balance, such taxes cannot be recommended either on efficiency or administrative grounds.

1/ For a discussion of these issues, see Greenaway (1995), Eichengreen, Tobin, and Wyplosz (1995), Garber and Taylor (1995), and Kenen (1995).

2/ Although, of course, various types of fees typically apply to both domestic and foreign financial transactions.

Table. Financial Transactions Taxes 1/

<p>Australia (July 1994)</p>	<p>Certain states and territories impose a financial institutions duty on banks and other nonbank financial institutions. Generally the rate of duty is 0.06 percent of the value of the transaction, with a maximum duty of \$A 1,500 on any single transaction. An additional stamp tax was removed in 1991.</p>
<p>Chile (March 1994)</p>	<p>There are no financial transactions taxes, but there are stamp duties on certain financial transactions, whose scope is, however, limited. The tax is basically levied on loans. In addition, the Central Bank imposes a reserve requirement on new foreign loans by enterprises, requiring them to deposit 30 percent of the loan, interest free, in the Central Bank, for one year.</p>
<p>China (March 1994)</p>	<p>In Shenzhen, securities transactions are subject to a 0.6 percent stamp tax on transferred stock.</p>
<p>Colombia (August 1994)</p>	<p>A stamp duty applies to certain financial transactions, but the issuance and transfer of shares and bonds are exempt from stamp duties or other transfer taxes. The Central Bank imposes a reserve requirement on new foreign loans of certain maturities by enterprises, requiring them to deposit variable amounts of the loan, interest free, in the Central Bank, for the duration of the loan.</p>
<p>Denmark (October 1993)</p>	<p>A duty is levied on the transfer of Danish or foreign shares at a 1 percent rate. The duty is payable if the seller is a resident of Denmark. Exemptions apply to stockbrokers, banks, and other financial institutions, the issuance of shares, the exchange of shares, mergers, and so on. There is no tax on the issuance of shares, but the issuance of debentures and loan agreements is subject to a stamp duty at a rate of 0.3 percent (registered) or 1 percent (bearer instruments).</p>

Table (continued). Financial Transactions Taxes 1/

Finland (August 1994)	A stamp duty of 1.6 percent applies to the transfer of shares and other securities, but only if the transfer is not made through the stock exchange. No stamp duty is payable on transfers between nonresidents.
France (June 1994)	A registration tax is levied at a rate of 4.8 percent on the higher of the sale prices or fair market value of sales of shares, founder shares, profit shares, or profit participation in companies whose capital is not divided into shares. If a deed is drafted, it attracts a transfer tax of 1 percent with a ceiling of F 20,000. A stock exchange tax applies to the sales of securities on the Stock Exchange or over the counter and any sale in which a broker or professional intermediary intervenes in the sales, except banks and financial establishments which make firm purchases of securities on issue and resell to their clients. The rates of the stock exchange tax are regressive. A tax reduction of F 150 per transaction applies, and there is a ceiling of F 4,000 per transaction. Since January 1994, the stock exchange tax is no longer due on the part of the transaction carried out by nonresidents.
Germany (October 1994)	All securities transactions taxes were abolished as of January 1991.
Japan (April 1992)	A securities transactions tax applies to the transfer of securities in Japan. Transfer by gift, bequest, or through merger is exempt from tax. The tax rates vary according to financial instrument and are lower for securities companies.
Luxembourg (October 1994)	There are no financial transactions taxes.
Mexico (March 1994)	The transfer of shares is not taxed.
South Korea (March 1992)	There is a securities transactions tax on the value of securities at the time of transfer. The rate is 0.5 percent but may be reduced by Presidential decree.

Table (concluded). Financial Transactions Taxes 1/

Sweden (August 1993)	There is a stamp duty on the issuance of shares. All securities transactions taxes were abolished in December 1991.
Taiwan Province of China (January 1994)	There is a securities transactions tax on sales of bonds, shares, debentures, and other securities. The rates are 0.3 percent of the transactions price for a transaction in shares issued by a company and 0.1 percent on other transactions.
Thailand (April 1993)	A stamp duty applies to a number of documents and transactions as specified in the tax code. The transfer of shares, debentures, bonds, or certificate of indebtedness issued by a company is taxed.
United Kingdom (December 1993)	A stamp duty applies to the transfer of stock, loan capital, and marketable securities at a 0.5 percent rate.
United States (March 1993)	There are no financial transactions taxes except for state taxes in some cases and a Securities and Exchange Commission fee (but this is quite small).

Sources: Staff compilation from "Taxes and Investment in Asia and the Pacific," Vol. 1, International Bureau of Fiscal Documentation, Amsterdam (for Asia and the Pacific); "The Taxation of Companies in Europe, Guides to European Taxation," Vol. II, International Bureau of Fiscal Documentation, Amsterdam (for Europe); and Taxation in Latin America, and Doing Business in the United States, and Doing Business in Canada, Price Waterhouse, New York (for the Western Hemisphere).

1/ This list is not comprehensive of countries with financial transactions taxes, but is intended to highlight differences in these taxes across countries.

I. Economic Effects of Financial Transactions Taxes

Financial transactions taxes may have pervasive effects on capital markets. They may impose significant efficiency costs, by impairing the smooth functioning of financial markets, increasing the cost of capital, and distorting the structure of capital financing. They are likely to have uncertain effects on the volatility of capital flows, either in domestic or international financial markets. Their distributional effects are uncertain, with the burden initially falling on financial markets, but later probably being shifted to all owners of assets and even to labor. The international incidence effects are uncertain. Finally, the revenue impact of such taxes is hard to predict, as static revenue estimates are likely to be highly misleading.

1. Efficiency of financial markets

One principal argument against financial transactions taxes is that they would reduce market efficiency (see Hubbard, 1993; Hakkio, 1994; Kiefer, 1990; and Schwert and Seguin, 1993). It is widely agreed that efficient domestic and international financial markets are characterized by low transactions costs, thus limiting the incentive of investors to hold on to financial assets rather than to trade them. Since financial transactions taxes would increase such costs, they would impose an efficiency cost on financial markets. ^{1/} The distortion in trading patterns would impose a cost on investors by inducing them to hold a less desired portfolio and impose a cost on markets by reducing both arbitrage and speculation on prices, which may be stabilizing (see Kupiec, 1995). Also, financial transactions taxes would increase the taxation of income from capital, increasing before-tax rates of return and the cost of capital. In the long run, increasing the cost of capital could lead to lower rates of capital formation and economic growth.

If these taxes applied only to certain assets, they would shift investment to untaxed assets, adding to distortions present under existing tax systems. For instance, under a securities transactions tax, if equities were taxed and debt untaxed, investors would shift from equity to debt. This increase in leverage could have efficiency costs, by inducing excessive levels of debt. If only domestic transactions were taxed, transactions would quickly move offshore. In international markets, if transactions taxes applied only to certain currencies, traders would shift into other currencies. If transactions taxes applied to all currencies, traders would shift into vehicle currencies so as to avoid making currency conversions. This would increase costs for small, not widely traded, currencies.

^{1/} Since transactions costs in domestic and international markets have fallen significantly during the last few decades, a small transactions tax would still leave transactions costs below historical levels. Nevertheless, earlier high levels of transactions costs were not necessarily appropriate and may have hindered the efficient operations of financial markets.

2. Volatility in capital flows and asset prices

Although financial transactions taxes would increase transactions costs, it has been argued that they would still improve the overall efficiency of financial markets because they would reduce trading, thus contributing to reduced volatility and therefore risk (which would reduce before-tax rates of return and the cost of capital). Yet the opposite has also been argued, viz., that reduced trading would lead to less liquid markets, thus contributing to greater volatility.

The effect of transactions costs on the volatility of domestic and international financial markets thus becomes an important empirical issue. The key empirical questions are: how would financial transactions taxes influence the behavior of financial market participants and how would these changes in behavior affect the volatility of financial markets? Regarding the former, the evidence from financial markets is inconclusive: while such taxes appear to alter the composition of trading, it is less clear that they affect the overall volume of trading or of capital flows. Empirical relationships between the volume of trading and capital flows and market volatility are also uncertain.

More generally, empirical observations do not provide a basis for asserting a firm link between transactions costs and volatility. In the past, transactions costs in domestic and international financial markets were generally larger than today. Large fluctuations in capital flows and prices were also observed. In recent years, average transactions costs in the United States have fallen significantly for stock market investors. If transactions costs reduce volatility, this decline in transactions costs should have led to an increased volatility of the stock market. Yet Schwert (1993) found that stock market volatility in the United States has not increased in recent years. The behavior of stock markets in other countries also sheds light on this issue. Hakkio (1994) examined the stock market crash in October 1987 and found that it was as severe in countries with domestic securities transactions taxes as in those without (e.g., Sweden and Switzerland both had relatively high transactions taxes and experienced larger percentage drops in the stock market price index than the United States or Canada with none). Against these results that suggest that reduced transactions costs did not lead to higher volatility, Kupiec (1991) found that average stock market volatility in OECD countries has increased in recent years, largely owing to periods of abnormal volatility (although he did not explicitly link this volatility to changes in transactions costs).

Real estate markets also offer evidence on the relationship between transactions costs and volatility. Real estate markets typically have large transactions costs, yet they are quite volatile in terms of investment flows and price, again suggesting the absence of a strong link between transactions taxes and volatility (see IMF, 1994).

Turning to the studies examining direct links between transactions taxes and volatility, some theoretical arguments have recently been offered which suggest that they may reduce volatility in financial markets. Summers and Summers (1990) have argued that financial transactions taxes would reduce the harmful destabilizing speculation which arises from short-term trading, since it is this type of trading which would be disproportionately reduced by such taxes. Their argument is based on the assumption that there are two types of investors. One type trades on the basis of an asset's "fundamentals" and tends to sell when prices rise and buy when prices fall. These investors, whom they term "negative feedback" investors, act in such a way as to reduce volatility. Other investors, whom they term "positive feedback" investors, act in the reverse manner, trading more frequently. Any curbs on short-term speculation through a financial transactions tax would be more likely to discourage these positive feedback investors and reduce asset price volatility. Grundfest and Shoven (1991) have responded to this argument by suggesting that financial transactions taxes could alter the behavior of both types of investors, thus discouraging stabilizing and destabilizing traders; thus there is no reason to presume that they would disproportionately reduce the activities of the latter.

Summers and Summers (1990) have also argued that financial transactions taxes would discourage investment by those whose information is not based on fundamentals, but are rather "noise traders," thereby improving the functioning of markets. Again, there is no empirical evidence to demonstrate that these taxes would disproportionately reduce the relative importance of trading by noise traders. Overall, the Summers and Summers (1990) view, while an interesting hypothesis, seems to have generated only limited support in the literature.

Few formal statistical studies have explicitly attempted to link financial transactions taxes and volatility. Roll (1989) examined stock market volatility in 32 countries from 1978 to 1989 to examine whether volatility was related to margin requirements, price limits, and transactions taxes. He found no evidence of a systematic relationship between either financial transactions taxes or margin requirements and volatility.

3. Distributional effects

While economists typically focus on issues of economic efficiency, the political debate on taxes often hinges on issues related to their distributional effects, which, for financial transactions taxes, are complex. Initially, their burden is likely to fall on the participants in financial markets, including investors and borrowers, and the financial services industry. This would suggest that their incidence would be progressive, since higher income individuals tend to hold most financial securities. However, in industrialized economies, institutional investors hold a considerable share of financial securities. In particular, pension funds, insurance companies, and mutual funds hold the assets of a broad cross-section of the population, which would tend to reduce the progressivity of the incidence of these taxes. In addition, to the extent that the burden of

these taxes is shifted through behavioral changes on to all assets, the incidence could fall on an even broader cross-section of the population, including homeowners and others. Since it is unlikely that the tax would be fully shifted to investors in financial securities, the financial services industry would also probably bear some of the burden of the tax. In the long run, however, if the financial services industry is competitive, a large part of the tax would be shifted to investors.

If financial transactions taxes depress capital formation, then the tax might result in a somewhat lower rate of capital investment. In a general equilibrium context, one might anticipate adverse effects on the stock of capital per worker and eventually real wages, thus shifting some of the burden of the tax from owners of assets to workers, further reducing the progressivity of the tax.

In an international context, the incidence of transactions taxes on currency conversions would be borne by the countries that levy them and on the countries that use currencies subject to the tax. A general tax on currency conversions would fall most heavily on countries trading in international financial markets, though the absolute and relative incidence would vary depending on the size of the nation and its trading sector.

4. Revenue productivity

One appeal of financial transactions taxes has been their potential to raise large amounts of revenues with low tax rates, given the large tax base implied by the high level of financial transactions. For instance, the value of stock transactions on the New York and NASDAQ stock exchanges (the two major United States stock exchange markets) was US\$3.9 trillion in 1994. A static revenue estimate (excluding behavioral changes to the tax) of a tax on stock market turnover at a tax rate of 1 percent would result in revenues of US\$39 billion per year. Global net turnover in the world's foreign currency markets (spot, forward, and derivative contracts) is on the order of US\$1 trillion a day. A static revenue estimate of a tax on foreign currency transactions at a tax rate of .01 percent (i.e., 1 basis point) would raise about US\$25 billion per year (based on 250 business days per year).

However, the potential revenue from such a tax would depend on the nature of the tax, the scope of its coverage, the tax rate chosen, and the behavioral effects on financial market participants induced by its imposition (see Hubbard, 1993). Static revenue estimates would be misleading because these taxes would change financial markets in fundamental ways, altering both the price and volume of the assets being traded (and thus the size of the tax base). Most likely, imposition of a financial transactions tax would lead to a decline in the price of taxed assets (similarly to the imposition of other taxes on capital). Full capitalization of these taxes would cause taxed assets to drop in price by the present discounted value of the expected tax liabilities. Moreover, such a tax would also affect the volume of trade. The split between changes in price and changes in volume

of trade would depend on the relevant elasticities of demand and supply for the assets. The overall decline in the price of a security would be larger, the more frequently the asset had been traded prior to the imposition of the transactions tax or the smaller the responsiveness of trade in the asset to the tax. The combination of changes in the value and the trade volume is difficult to predict. Nevertheless, given the sophistication of financial markets and the ability of market participants to construct alternative financial instruments, the substitution away from taxed assets could be quite large and quite rapid, reducing revenues from the tax. Revenue estimates must therefore take into account these adverse effects arising from behavioral reactions by market participants.

There could also be offsetting indirect revenue effects from the imposition of financial transactions taxes. If these taxes depress asset prices, capital gains tax receipts would experience a one-time fall. Further indirect revenue effects would result from the effect of these taxes on the operation of financial markets and the overall level of economic activity.

II. Issues in the Design of Financial Transactions Taxes

Many economic issues arise in the design of financial transactions taxes, given the breadth of commonly available financial assets, the purposes that these assets serve, and the substitutability possible among alternative assets.

1. Coverage

In its broadest form, financial transactions taxes should apply to all financial transactions, regardless of whether they involve domestic or foreign financial instruments, and no matter with whom and where a particular transaction takes place. If the goal is, narrowly, to influence international capital flows, it may be desirable to limit the coverage of the tax to transactions involving currency conversions. However, there is no exact equivalence between capital flows and foreign currency transactions. In some cases, foreign currency is exchanged between residents of a country with no corresponding capital flow and in other cases, capital flows may take place across national borders using a common currency. Clearly, the usefulness of a tax on currency conversions as a means to influence capital flows diminishes, the greater the share of transactions taking place in these forms.

2. Short-term versus long-term transactions

There is no easy way to design a uniform financial transactions tax. Transactions taxes applied at a uniform rate on all financial instruments would have different effective tax rates depending on the maturities and holding period of the assets; with a single ad valorem rate, the effective burden on assets would be higher, the shorter the maturity. For instance, a

0.3 percent tax on a 30-day security would be roughly equivalent to a 3.6 percent annual tax, in contrast to a 0.3 percent tax if a one-year security were held to maturity. If assets were taxed before maturity, this would complicate the picture; a frequently traded long-term asset would face a higher tax burden than one with the same maturity held to maturity by a single investor. Transactions taxes levied equally on all assets would thus effectively tax more heavily short-term assets and those traded more frequently.

An important issue in the design of such taxes is whether it is desirable to tax short-term transactions more heavily. As noted above, proponents of financial transactions taxes have argued that short-term traders are precisely those whose activities are most destabilizing and thus advocate financial transactions taxes on the grounds that they would effectively target this group. Nevertheless, the case for limiting the activities of short-term traders is not persuasive. Indeed, a strong case can be made that short-term capital flows (and long-term capital flows) have benefits, among others, in forcing governments into credible and consistent policies. Moreover, financial transactions taxes would have a negative effect on the short-term liquidity trading of financial institutions. Short-term financial assets are the largest component of the portfolio of many financial institutions, and both provide essential liquidity to enterprises and individuals and serve to hedge currency and other investment risks. Such operations, which constitute the largest share of financial transactions, provide stability to the financial sector as a whole. Financial transactions taxes might induce investors to substitute long-term for short-term financing, thereby imposing efficiency costs on financial markets. There is considerable difficulty, therefore, in arguing in favor of such taxes as a means to reduce short-term capital flows.

In principle, financial transactions taxes could be levied at different rates according to the maturity of the financial instrument. ^{1/} However, such differential taxation would have uncertain economic consequences and would distort the term structure of interest rates, thereby obscuring the useful role it plays in financial markets. A policy of exempting short-term instruments may also create a bias in favor of the use of short-term debt; moreover, investors could synthesize long-term debt with a series of shorter-term debt instruments. Differential taxation would also be administratively difficult.

^{1/} Indeed, some countries have explicitly exempted short-term debt instruments from transactions taxes to avoid disruptions to markets for short-term debt.

3. Debt and equity

Another issue arising in the design of a financial transactions tax is whether it should be equally applied to equity and debt, and whether public debt should be exempt. Transactions taxes levied on public debt could increase the cost of debt issuance to governments. Exempting public debt from such a tax (e.g., a practice followed by Japan and Taiwan Province of China) would contribute to the inefficiency already generated by other forms of preferential treatment of government debt, such as the exemption of the interest income on such assets from income tax.

Transactions in equities pose fewer difficulties in being incorporated into a transactions tax than debt transactions since equity generally has no fixed maturity. Effective tax rates thus vary only with the holding period of the asset. In addition, since governments do not generally issue equity, there is less reason to be concerned that markets for government securities would be disrupted. However, if equity were included and debt (or some forms of debt) not included in the coverage of a transactions tax, this would necessitate a means to classify instruments into equity and debt. In modern financial markets, however, it is sometimes difficult to make this distinction; indeed, financial markets now include instruments that have the characteristics of both, such as preferred stock and convertible debt. Often these instruments have been developed precisely as a means of disguising equity as debt, thus allowing sophisticated investors to minimize tax liabilities because of the typically more favorable treatment accorded to debt. If transactions taxes were applied differentially to these instruments, this would just enhance the tendency to create financial instruments that have characteristics of both, complicating tax administration.

4. Derivatives

Derivatives also complicate the design of financial transactions taxes. Derivatives are financial instruments whose value is derived from the value of an underlying instrument, such as equity or a basket of currencies, but are not the instrument itself. Derivatives play a valuable role in modern domestic and international financial markets, transferring the risks associated with owning financial instruments, but without requiring the actual ownership of the instrument. Such instruments have grown rapidly and now form a quantitatively significant segment of financial markets (see IMF, 1995). They are especially important in foreign exchange markets.

Under a comprehensive transactions tax, transactions in derivatives should be taxed; otherwise, investors could construct equivalent positions with derivatives as they would with cash instruments. It would, however, be simplistic to stipulate that both cash and derivative instruments should be taxed equally. Consider, for example, a futures contract. A tax on the value of a futures contract would understate the value of funds that may be channeled to markets on the basis of such deals, but taxing the principal value of the contract would be onerous unless the tax were levied at a much lower rate than on ordinary equity or debt. Indeed, such a tax could

potentially destroy such markets. Futures (and forward) markets play an important role in hedging price and exchange rate risks, and the disruption of these markets would represent a severe blow to the stability of financial markets.

The difficulties in levying transactions taxes in foreign currency derivative markets is illustrated by the experience of Italy. To reduce speculation against the lira, Italy levied a tax on forward purchases or sales of foreign exchange. To avoid the tax, traders created a "domestic" currency swap market on the interest rate differential between the lira and other currencies, to be settled in lira. Eventually, this duty was abolished (see OECD, 1995).

The taxation of options also raises difficult and complex issues. Placing a tax on the exercise price of an option creates a disadvantage for trading in options relative to the cash market, because to replicate price performance in the cash market with options requires twice as many transactions as the underlying shares. For example, in equilibrium, an investor who buys a call option and sells a put option (of the same price and maturity) gets the same return as an investor who holds the underlying stock, yet engages in twice as many transactions. 1/ If the tax applied only to the option price, rather than to the price of the assets, then this would encourage trade in options and discourage trade in the underlying assets.

With derivatives, it would not be necessary to levy the same rate of tax on the underlying instruments as on the derivative products (e.g., a different rate of tax might apply to the option price than to the underlying stock value); however, this raises difficult questions with respect to setting the relative tax rates. Given the complexity of the strategies underlying the use of derivatives, it would probably be impossible to establish one rate applied to derivatives and one to the underlying instruments that would yield exact equivalences.

1/ A call option gives the buyer the right to buy a specific number of shares from the writer (seller) of the option at a specific contract price at any time until the expiration date of the contract. The contract price is known as the exercise price. A put option gives the buyer the right to sell a specific number of shares to the writer of the option at a specific price at any time until the expiration date of the contract. The premium or option price specifies the cost the buyer must pay the seller of the option. If an investor buys a call option, the value of the call rises when the price of the stock rises above the exercise price. When the investor buys a put option, the value of the put rises when the value of the stock falls below the exercise price and the seller of the put loses an equal amount when stock prices fall. Therefore, to buy a call option and to sell a put option, with the same exercise price and expiration date, recreates the investment outcome of a buyer of the stock whose price is the same as the exercise price of the options.

5. Financial intermediaries

Financial intermediaries pose another set of difficult problems in designing a financial transactions tax. Imposing transactions taxes on intermediaries can multiply the number of times a financial asset is taxed. This cost is likely to be shifted to the consumers of intermediary services. Exempting intermediaries from transactions taxes would encourage their use, irrespective of any economic advantages associated with their activities, thus reducing the efficiency of financial markets. In some cases, it may be difficult to identify intermediaries. Nevertheless, some transactions taxes exempt market makers from the tax (e.g., the United Kingdom) or tax them more lightly.

Mutual funds are an example of an intermediary where the tax could apply not only to the transactions of investors with a particular fund, but also to the transactions of the fund in buying or selling assets in its portfolio, thus raising the effective tax burden compared to an investor who purchased the instruments directly. While it would be possible to tax only the investor's transactions in the fund or the fund's transactions in the instruments in its portfolio to yield a better equivalence, such an approach could create opportunities for tax evasion.

6. Foreign substitutions

The increasing international integration of financial markets ensures that there would be international dimensions to any kind of financial transactions tax, even one focused only on domestic trade in financial assets. If transactions taxes applied to transactions only in domestic markets, investors could substitute foreign trading as a means to avoid the tax. Shifting the location of trade in financial assets is relatively easy, with trade shifting to other countries or to locations with established financial markets. For instance, a considerable amount of trading in the equities of the United States takes place in London.

Sweden's experience with securities transactions taxes, analyzed in Campbell and Froot (1993), illustrates the pitfalls of limiting the tax to domestic transactions in securities. Beginning in 1984, Sweden began levying a series of transactions taxes on domestic securities transactions, including a 0.5 percent tax on the purchase and sale of equities, a 2 percent round-trip (i.e., buying and selling) tax on the option premium, another 1 percent tax on the exercise price of the option, a 1 percent round-trip tax on interdealer equity trades, and a tax on fixed income securities and associated derivatives, such as interest-rate futures and options at variable rates. Ultimately, however, in response to the perception that these taxes were ineffectual and driving financial transactions offshore, Sweden began to abolish these taxes, fully eliminating them by 1991.

The securities transactions tax in the United Kingdom, also described in Campbell and Froot (1993), is a tax on the transfer of financial instruments from one owner to another. The duty applies to transactions in common

stock and in assets convertible to stock at a rate is 0.5 percent of the price. This tax is harder to avoid than the Swedish tax since the tax is required for a change of ownership and it applies to both foreign and domestic purchasers alike. Nevertheless, the tax is not without its own distortions, such as encouraging the use of derivatives, which are not taxed.

If transactions taxes applied to all transactions in the instruments of a country, regardless of location, investors could shift to trading in the untaxed assets of other countries. In most cases, foreign markets could create assets that would mimic the outcome of domestic assets. Domestic investors could then purchase these instruments and avoid the tax. This suggests that the application of the tax should extend to the transactions of domestic taxpayers subject to tax, regardless of location. Nevertheless, this would pose the same difficulties that tax administrations currently face in trying to monitor the offshore activities of domestic taxpayers.

III. Taxes on International Transactions and Related Taxes

1. The Tobin tax

Tobin proposed the idea of imposing a tax on all transactions involving the conversion of one currency into another in 1978 (although the idea can be traced to earlier proposals by Keynes). His argument for the tax was to reduce excessive short-term capital mobility, which he viewed as largely of a speculative nature. ^{1/} Tobin envisaged an international tax, levied at a uniform rate, on all spot transactions in domestic security and foreign exchange markets involving the conversion of one currency to another. To prevent speculators disguising financial transactions as trades in goods and services, the tax would also be applied to payments for such purchases across currency areas. Although the Tobin tax would be international, it would be administered by national governments over their own jurisdiction even when domestic currencies are not involved (e.g., the British Government would levy the tax on Euro-dollar transactions in London when they involve currency transactions). Tobin proposed that the proceeds of the tax could be paid to the World Bank or International Monetary Fund, which would also coordinate the administration of the tax at the international level. For its success, the Tobin tax would require international policy coordination in three areas: *tax policy proper (concerning the base and rates)*; *tax administration*; and *the sharing of the proceeds of the tax*.

^{1/} Tobin (1978, 1991) has argued that the problem of excessive short-term capital mobility would be present irrespective of the exchange rate regime (clean or dirty floats, fixed or adjustable pegs, or target zones). This is because no chosen exchange rate parity is irrevocable. While speculation on a currency may be different under different exchange regimes, it will always occur. For example, in a fixed-rate regime, the speculation could be on the duration and the extent to which a country is able and willing to defend an existing rate.

From a tax policy perspective, there are a number of analytical shortcomings to the Tobin tax proposal (see Garber and Taylor, 1995; and IMF, 1994). One is that it is tantamount to a tax on foreign exchange. As such, it is similar to other trade barriers in creating a disincentive to trade. This is particularly true if the tax were imposed on bona fide payments for goods and services. Even though the tax burden might be light, the tax would also increase the costs of financing international investment and depress the level of international capital formation.

Second, the proposal is predicated on the assumption that short-term speculative capital flows are the source of market inefficiency and volatility, and as discussed earlier, this evidence is not well established. Third, the tax is unlikely to deter speculation. The low tax rate generally envisaged under the Tobin tax would not inhibit speculative investments where expectations of an exchange rate change exceed the transactions costs of the tax. Fourth, financial market participants are likely to oppose even small tax rates in view of the narrow spreads that characterize a significant share of daily transactions in financial markets.

Fifth, the design of the tax would be difficult, both in terms of ensuring differential tax rates that did not distort efficiency across financial instruments as well as in limiting the scope for evasion. Finally, the tax might induce international traders to withdraw into the exclusive use of vehicle currencies (like the U.S. dollar or the Deutschmark), thus attempting to reduce the level of currency conversions.

In terms of the effective implementation of the tax, in order to avoid evasion through third-country tax shelters, the Tobin tax would have to be internationally agreed upon and administered by each government for taxable transactions that are carried out in its own jurisdiction. The effectiveness of the tax could be drastically reduced even if only a few governments with financial markets decided against its implementation. ^{1/} The coverage would have to be comprehensive and include at least, say, the Group of 7, Australia, New Zealand, Hong Kong, and Singapore. Other emerging financial centers would eventually also need to be included; if such countries did not cooperate, they would need to be isolated through significantly higher tax rates. The rules would have to be established by an international organization or, alternatively, by an intergovernmental commission which is given autonomy in this area. The transfer of sovereignty in the area of Tobin taxation would have to be based on a treaty which would have to be ratified by the parliaments of all participating countries.

^{1/} This is recognized by Tobin. In a recent paper (see Eichengreen, Tobin, and Wyplosz, 1995), they noted that "a transaction tax on purchases and sales of foreign exchange 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 markets would simply move offshore" (p. 165).

It is possible to envisage a framework for the administration of the Tobin tax. Presently, the foreign exchange market is relatively well structured and the number of licensed participants is limited. Registered dealers execute the majority of transactions. Foreign exchange transactions in all significant markets rely heavily on automated processing and on telecommunications networks, which would facilitate tax administration. Moreover, the bulk of transactions takes place in a small number of geographic centers. For example, in 1992, the United States, the United Kingdom, and Japan accounted for 55 percent of all countries' total reported turnover. If the next four most important centers are added--Singapore, Switzerland, Hong Kong, and Germany--about 78 percent of total trading is accounted for. 1/

This being said, the tax is also likely to engender significant up-front administrative costs in terms of reconfiguring computer systems and developing administrative methods for the collection and monitoring of the tax. This can be expected to engender resistance to the tax by key market participants. Also, the administration of the tax would have to be decentralized in the hands of national governments. This would include, ideally, uniform operating rules and administrative cooperation of tax administrations across currency borders for the purposes of regulating the tax. Revenues would be remitted to national governments by withholding agents (mostly financial institutions).

The disposal of the proceeds from the tax would have to be worked out by international agreement. Assigning the proceeds from the Tobin tax could be expected to be politically controversial. Some have argued for their assignment to a supranational body (e.g., the World Bank or International Monetary Fund), given the difficulty of determining an appropriate assignment of revenue; indeed, some advocates of the Tobin tax have argued that the proceeds should be used to finance programs of world-wide importance, such as research in health, the protection of the environment and habitat, social policy, etc. However, another approach would be to hand the proceeds back to national governments, perhaps on the basis of country of origin. This would favor countries with important financial centers. Alternatively, the tax proceeds could be redistributed to national governments on the basis of various other criteria such as, for instance, the quota ascribed to an international organization, GDP, or needs criteria in certain policy areas.

1/ Nevertheless, given the ease with which financial transactions can move, the effect of leaving out of the tax net almost a quarter of trade that passes through other markets could be significant.

2. Variants of the Tobin tax

As originally conceived, the Tobin tax would appear impractical. However, it is not necessary to conceive of taxes to influence capital flows on such a grand scale. Individual countries could impose various measures on a unilateral basis, as many have done with domestic securities transactions taxes and taxes on currency conversions.

One approach that has been used is to levy a tax on the domestic stock of foreign assets, as opposed to the flows of foreign exchange transacted. Such a tax increases the opportunity cost of holding foreign assets and causes investors to shift into home assets. Such taxes have been employed in the past by some countries (e.g., Germany, Switzerland). It is questionable, however, whether a tax on stocks can deter short-run speculation. Discriminatory taxation of foreign and domestic assets may also not be consistent with the spirit of the OECD's Liberalization of Capital Markets Code or of GATT.

Another variant is a tax on capital outflows or inflows. A tax on capital outflows could take the form of a levy on purchases by residents of foreign investments. A tax on capital inflows could take the form of a levy on purchases by foreigners of domestic investments. Even nondiscriminatory forms of domestic securities transactions taxes would still tend to reduce capital inflows. Capital outflow taxes were used, for instance, by the United States during the 1960s and, more recently, by Israel. In both cases, the taxes were ultimately repealed. The United States' interest equalization tax (IET) was imposed in 1964 on capital outflows, in a period of growing pressure on the United States' balance of payments. The tax took the form of an ad valorem levy on purchases by residents of foreign debt and equity, sold by foreigners. The tax was highly vulnerable to tax avoidance schemes through related party transactions and other means. Overall, the IET appears to have affected the composition of United States' capital outflows but not the overall level. In general, these measures have a significant economic cost and are likely to be futile as anti-speculation devices. Furthermore, they have proven unsuccessful in coping with underlying structural economic problems on a more permanent basis, and are difficult to reconcile with freedom of capital movements.

Other variants of the Tobin tax come close to being monetary policy measures. One scheme would work similarly to the mechanism used for exchange rate stabilization in the European Monetary System (see Tornell, 1990). Rather than lending support to a weakening currency through interest rate subsidies or sales of foreign exchange reserves, the currency is defended by taxing currency conversions that occur when the effective exchange rate moves beyond some band. The tax could also be applied to the difference between the band and the effective rate.

Another approach would be to require banks to deposit a sum related to the foreign currency transaction, interest free, with the central bank for a year, thereby effectively raising the cost of these foreign currency

transactions (see Eichengreen and Wyplosz, 1993). This scheme is being employed in Chile, where the Central Bank has introduced a reserve requirement on all new foreign loans. Enterprises that receive foreign loans must deposit 30 percent of the loan, interest free, in the Central Bank. This reserve requirement operates de facto like a tax on foreign loans since creditors have to pay interest on the full amount of the foreign credit but can use only part of it. This "implicit tax" allows the Central Bank to set an internal interest rate above the one implied by international interest rate arbitrage.

A similar proposal would require noninterest-bearing deposits corresponding to increases in bank open positions in foreign exchange. This approach has, in fact, been employed by Spain as a response to recent exchange rate turbulence within the European Monetary System. In both cases, the implicit tax rate would correspond to the opportunity costs of holding these mandatory funds interest free.

However, it is questionable whether such measures could be employed on a permanent basis. They could be interpreted by markets as easing the pressure on governments to pursue sound fiscal and monetary policies. If employed only occasionally and on an ad hoc basis, they could even encourage speculation.

Another alternative would be a capital gains tax that would apply higher rates to short-term capital gains. Such a tax would presumably have to be embedded in national income tax legislation, as it is difficult to see how such a tax could be coordinated at the international level. Experience with national withholding taxes on interest income demonstrates, however, that some countries have little incentive to cooperate internationally; this has been particularly the case for those countries with important financial markets that benefit from low or nonexistent taxation on income or capital gains of foreigners. Such a tax would also pose administrative problems because it would create incentives to make short-term gains appear as long-term gains and lead to a lock-in effect. In a world of increasingly mobile capital, it would be very difficult to determine the locational incidence of capital gains.

IV. Conclusion

Financial transactions taxes have attracted considerable interest in recent years as a possible tool to influence the behavior of financial markets and, thereby, strengthen the ability of governments for macro-economic management. This paper suggests that these taxes would be unlikely to produce the desired effects, would be difficult to design and implement, and would be politically contentious. The main drawback is that it is unclear that the possible advantages in terms of reducing some short-term speculative trading would outweigh the possible disadvantages in terms of impairing the efficiency of financial markets. In addition, from an administrative perspective, without a broad international consensus and application, these taxes are likely to be easily avoided.

References

- Campbell, John Y., and Kenneth A. Froot, "International Experiences with Securities Transactions Taxes," National Bureau of Economic Research Working Paper No. 4587 (December 1993).
- Eichengreen, Barry, and Charles Wyplosz, "The Unstable EMS," Brookings Papers on Economic Activity, Vol. 1 (1993), pp. 51-139.
- Eichengreen, Barry, James Tobin, and Charles Wyplosz, "Two Cases for Sand in the Wheels of International Finance," The Economic Journal, Vol. 105 (1995), pp. 162-72.
- Garber, Peter, and Mark P. Taylor, "Sand in the Wheels of Foreign Exchange Markets: A Skeptical Note," The Economic Journal, Vol. 105 (1995), pp. 173-80.
- Greenaway, David, "Policy Forum: Sand in the Wheels of International Finance," The Economic Journal, Vol. 105 (1995), pp. 160-61.
- Grundfest, Joseph A., and John B. Shoven, "Adverse Implications of a Securities Transactions Excise Tax," Journal of Accounting, Auditing, and Finance, Vol. 6, No. 4 (Fall 1991), pp. 409-42.
- Hakkio, Craig S., "Should We Throw Sand in the Gears of Financial Markets?," Economic Review, Federal Reserve Bank of Kansas City, Vol. 79, No. 2 (1994), pp. 17-31.
- Hubbard, R. Glenn, "Securities Transactions Taxes: Tax Design, Revenue, and Policy Considerations," Tax Notes (November 22, 1993), pp. 985-1000.
- International Monetary Fund, "International Capital Markets--Note on 'Sand-in-the-Wheels' Taxes on Foreign Exchange," SM/94/141, Sup. 1 (July 13, 1994).
- _____, "Issues Related to Derivatives," Chapter III in International Capital Markets Development, Prospects, and Key Policy Issues, Part II: Background Material on Issues in Financial Supervision and Regulation in Industrial Countries (Washington, D.C.: International Monetary Fund, 1995).
- Kenen, Peter B., "Capital Controls, The EMS and EMU," The Economic Journal, Vol. 105 (1995), pp. 181-92.
- Kiefer, Donald W., "The Security Transactions Tax: An Overview of the Issues," Tax Notes (August 13, 1990), pp. 885-901.
- Kupiec, Paul, "Stock Market Volatility in OECD Countries: Recent Trends, Consequences for the Real Economy, and Proposals for Reform," OECD Economic Studies, Vol. 17 (Autumn 1991), pp. 31-62.

- _____, "A Securities Transactions Tax and Capital Market Efficiency," Contemporary Economic Policy, Vol. XIII (January 1995), pp. 101-12
- Organization for Economic Cooperation and Development, "Draft Report to the Committee on Fiscal Affairs and the Committee on Financial Markets" (April 1995).
- Roll, Richard, "Price Volatility, International Market Links, and Their Implications for Regulatory Policies," Journal of Financial Services Research, Vol. 3 (1989), pp. 211-46.
- Schwert, G. William, "Stock Market Volatility," Financial Analysts Journal, Vol. 46 (May-June 1993), pp. 23-24.
- _____, and Paul J. Seguin, "Securities Transaction Taxes: An Overview of Costs, Benefits and Unresolved Questions," Financial Analysts Journal, Vol. 46 (September-October 1993), pp. 27-35.
- Summers, Lawrence H., and Victoria P. Summers, "The Case for a Securities Transactions Excise Tax," Tax Notes (August 13, 1990), pp. 879-84.
- Tobin, James, "A Proposal for International Monetary Reform," Eastern Economic Journal, Vol. 4 (1978), pp. 153-59.
- _____, "International Currency Regimes, Capital Mobility, and Macroeconomic Policy," Cowles Foundation Discussion Paper No. 993 (1991).
- Tornell, Aaron, "Real vs. Financial Investment: Can Tobin Taxes Eliminate the Irreversibility Distortion?," Journal of Development Economics, Vol. 32 (1990), pp. 419-44.