



A Securities Transaction Tax: Financial Markets and Revenue Effects

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April 19, 2010

Congressional Research Service

7-5700

www.crs.gov

R41192

Summary

A securities transactions tax (STT) is a tax imposed on the buyer and/or seller of a security at the time a securities transaction occurs. An STT can be applied to all security traders or selectively to only certain types. An STT can be applied across the board to all securities transactions, or only those involving specific types of securities, for example, stocks, options, and futures, but not bonds. While an STT can come in many different forms, there are two justifications commonly offered for imposing a tax of some sort on financial transactions: it would improve financial market operations and/or it would be a significant source of revenue.

A number of domestic policymakers have recently expressed their opinion about imposing an STT. Speaker of the House Nancy Pelosi has expressed interest in the idea of an STT if pursued in coordination with other countries. In addition, several bills proposing an STT have been introduced in the 111th Congress, including H.R. 676, H.R. 1068, H.R. 1703, H.R. 3153, H.R. 3379, H.R. 4191, H.R. 4646, and S. 2927. On the other hand, 36 House Members sent a letter to then-House Committee on Ways and Means Chairman Charles Rangel expressing their opposition to an STT. And, according to press reports, U.S. Treasury Secretary Timothy Geithner has questioned whether an STT would work.

This report analyzes the general effects of an STT on financial markets and its ability to raise revenue. The analysis examines how the tax could impact the important functions of financial markets—the determination of security prices, the spreading of risk, and the allocation of resources. The analysis of the financial markets then turns to examining how the tax may have an impact on security price volatility and the level of security prices.

The ability of an STT to raise revenue is dependent on the design of the tax, but illustrative estimates presented in this report suggest that an STT similar to recent proposals offered in the 111th Congress could raise a significant amount of revenue. The analysis in this report highlights the fact that the economic burden of the tax would ultimately fall on individuals, and it would likely fall more heavily on short-term traders than long-term traders. Finally, the analysis suggests that the tax may contribute to the progressivity of the tax code.

This report will be updated as warranted by legislative changes.

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Introduction

A securities transactions tax (STT) is a tax imposed on the buyer and/or seller of a security at the time a securities transaction occurs. An STT can be applied to all security traders, or selectively to only certain types. An STT can be applied across the board to all financial transactions, or only those involving specific types of securities, for example, stocks, options, and futures, but not bonds. While an STT can come in many different forms, there are two justifications commonly offered for imposing a tax of some sort on financial transactions: it would improve financial market operations and/or it would be a significant source of revenue.

The general idea of an STT can be traced back to at least the time of the Great Depression. In 1936, British economist John Maynard Keynes suggested that the United States impose an STT to reduce “speculation” in financial markets by raising the cost of short-term trading.¹ Along similar lines, American economist and Nobel Laureate James Tobin, speaking in 1972, advocated for a worldwide tax on all foreign currency transactions to quell disruptions in the foreign exchange markets.² Tobin’s proposal, which became known as the “Tobin tax,” is technically different from an STT because it only applies to foreign currency transactions, but is substantively similar to an STT. Thus the two terms are often used synonymously. Other terms that are used interchangeably with STT include securities transfer tax, securities transfer excise tax, stamp duty, stock transfer tax, financial transactions tax.

A number of domestic policymakers have recently expressed their opinion about imposing an STT. Speaker of the House Nancy Pelosi has expressed interest in the idea of an STT if pursued in coordination with other countries.³ There is a concern among some that financial market activity could move abroad if the United States imposes an STT unilaterally. In addition, several bills proposing an STT have been introduced in the 111th Congress, including H.R. 676, H.R. 1068, H.R. 1703, H.R. 3153, H.R. 3379, H.R. 4191, H.R. 4646, and S. 2927. On the other hand, 36 House Members sent a letter to then-House Committee on Ways and Means Chairman Charles Rangel expressing their opposition to an STT.⁴ And according to a press report, U.S. Treasury Secretary Timothy Geithner has questioned whether an STT would work since, as the report quotes Secretary Geithner as saying, firms are “going to move in a heartbeat to get around any tax like that.”⁵

Foreign policymakers have also expressed their opinion about imposing an STT. United Kingdom Prime Minister Gordon Brown is reported to have suggested considering an STT as one of the policies the Group of Twenty (G-20) could use to reduce risk taking and fund financial market

¹ John Maynard Keynes, *The General Theory of Employment, Interest, and Money* (New York: Harcourt, 1953), pp. 158-160.

² James Tobin, The Eliot Janeway Lectures at Princeton, 1972 as published in James Tobin, *The New Economics, One Decade older: The Eliot Janeway Lectures on Historical Economics in Honor of Joseph Schumpeter* (Princeton, NJ: Princeton University Press, 1974).

³ Embedded video, Matt Cover, “Pelosi Endorses ‘Global’ Tax on Stocks, Bonds, and other Financial Transactions,” CNSNews.com, Dec. 9, 2009, <http://www.cnsnews.com/news/print/58099>.

⁴ “Letter From 36 House Members to Reps. Rangel, Camp on Proposed Tax on Stock Trades, Other Financial Transactions,” *Daily Tax Report*, December 17, 2009.

⁵ Robert Schmidt, “Geithner Dismisses Tax on Financial Transactions as Unworkable,” Bloomberg.com, Dec. 5, 2009, <http://www.bloomberg.com/apps/news?pid=20601087&sid=a45uxLtxi3N8#>.

interventions by governments in times of crisis.⁶ Canadian Finance Minister Jim Flaherty appeared skeptical of this idea, stating “it’s one of the ideas that’s on the table, but is not particularly attractive to me as finance minister of Canada.”⁷ The International Monetary Fund (IMF) has announced that it has begun studying options available to governments for taxing their respective financial industries, including the option of imposing an STT.⁸ The report is expected to be ready later this year.

The STT proposals introduced in the 111th Congress vary greatly. H.R. 676 proposes a “small” tax on stocks and bonds, although no rates are offered. H.R. 1068 would tax any transaction to which subsection (b), (c), or (d) of Section 31 of the Securities Exchange Act of 1934 applies, and any transaction subject to the exclusive jurisdiction of the Commodity Futures Trading Commission at a rate not to exceed 0.25%.⁹ The STT proposed in H.R. 3153 would equal 0.25% and would be levied against derivatives not traded on a “qualified board or exchange.” H.R. 3379 proposes taxing oil futures and options transactions at a rate of 0.20% and 0.50% respectively. If enacted, H.R. 4191 would apply a 0.50% tax on stock transactions, a 0.20% tax on future, swap, and credit default swap transactions, and a 0.50% or 0.20% tax on options transactions depending on the underlying security. S. 2927 would impose a 0.25% tax on a broad range of financial transactions.

H.R. 1703 and H.R. 4646 propose a transaction tax that would encompass all transactions in the economy, not only securities transactions. H.R. 4646 proposes a 1.00% tax on “stock, bonds, or other financial instrument” transactions, in addition to transactions involving check, cash, and credit card. H.R. 1703 does not specify the rate, but imposes the tax on a similarly broad taxable base. These bills would have broader effects than the ones imposing the tax only on securities transactions.

This report analyzes the general effects of an STT on financial markets and its ability to raise revenue. It does not analyze any specific bill or proposal. Because a number of options are available for designing an STT, including the adoption of one of several proposals introduced in the 111th Congress, the analysis is carried out under the assumption of an STT that is broadly imposed on most securities transactions at the rate of 0.25%. When it is feasible or practical, however, the analysis highlights the effects of taxing particular types of securities transactions.

Financial Markets Overview

A general overview of financial markets may be useful for understanding what effects an STT could have on the functions of financial markets and its ability to generate federal tax revenue. The range of securities currently traded in financial markets is vast, including corporate stocks and bonds; commercial paper; government debt; and a large number of derivatives products such as futures, options, and swap agreements, among others. In addition, certain interests typically not

⁶ Reed V. Landberg and Simon Kennedy, “Brown Says G-20 Should Consider Tax on Speculation,” Bloomberg.com, Nov. 7, 2009, <http://www.bloomberg.com/apps/news?pid=20601080&sid=aEbwLvzaLk04#>.

⁷ Glenn Somerville and Sujata Rao, “Stimulus, not transactions tax needed: Geithner,” Reuters, Nov. 7, 2009, <http://www.reuters.com/article/idUSTRE5A611320091107>

⁸ “IMF Examining Financial Sector Tax Options,” IMF Survey online, Dec. 1, 2009, <http://www.imf.org/external/pubs/ft/survey/so/2009/NEW120109A.htm>

⁹ Subsections (b), (c), and (d) apply to exchange traded securities, securities traded off-exchange, and securities futures, respectively.

thought of as securities in the traditional sense may actually be securities because there can be an investment risk associated with the interest. A limited partnership interest may be one such example in particular cases. New types of securities are also frequently created by financial institutions in response to changing economic conditions, or by court rulings that declare a certain financial interest not previously considered a security to be one for legal or tax purposes.

Financial securities are traded in two different types of markets. Some securities are traded in regulated markets, also known as exchanges, such as the New York Stock Exchange (NYSE), the London Stock Exchange (LSE), and the New York Mercantile Exchange (NYME). Generally the types of securities traded on regulated exchanges are standard stock, options, futures, and commodity contracts. In the United States, the two bodies that oversee regulated exchanges are the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC). Securities are also traded in unregulated markets, known as over-the-counter (OTC) markets.¹⁰ Although financial securities traded on regulated exchanges are generally standardized, those that are traded in the OTC markets can be highly individualized products, designed to meet the specific needs of a particular trader. Information about who is involved in OTC transactions, or what they are trading, is not always available because there is no general requirement that such transactions be made public.

Trading on SEC regulated and unregulated exchanges has increased substantially over the last two decades. In 2008, \$82 trillion worth of securities were traded on SEC regulated exchanges, up from \$2.2 trillion in 1990. While data on OTC derivatives trading is limited and mostly aggregated across several countries, it still shows the increase in trading activity. Between 2000 and 2009, the notional value of all OTC derivatives contracts traded in G10 countries and Switzerland increased from \$95.2 trillion to \$604.6 trillion.¹¹ Data also show that trading in the mostly unregulated secondary U.S. government securities market increased from about \$47 trillion in 2000 to more than \$140 trillion in 2007.¹²

Most financial market transactions are conducted by institutional investors. Institutional investors actively trade securities to balance their portfolios, meet financing needs, manage risk, and maximize expected returns. Examples of institutional investors include insurance companies, pension and mutual funds, hedge funds, investment banks, foundations, and university endowments. In some cases, institutional investors are directly linked to individual investors because the former manages the latter's money. Such is the case, for example, with pension and mutual funds.

¹⁰ For more information about regulation of the financial markets see CRS Report R40249, *Who Regulates Whom? An Overview of U.S. Financial Supervision*, by Mark Jickling and Edward V. Murphy.

¹¹ Bank for International Settlements, *Semiannual Over-The-Counter (OTC) Derivatives*.

Markets Statistics, <http://www.bis.org/statistics/derstats.htm>. For a discussion about notional values and the issues of measuring the size of the OTC market see CRS Report R40646, *Derivatives Regulation in the 111th Congress*, by Mark Jickling and Rena S. Miller.

¹² Karthik Ramanathan, *Overview of U.S. Treasury Debt Management*, Department of the Treasury, Office of Debt Management, June 2008, http://www.treas.gov/offices/domestic-finance/debt-management/Treas_DebtMgmt_Overview.ppt.

Financial Markets Effects of an STT

Financial markets play an important role in the determination of security prices, spreading of risk, and allocation of resources. An STT would have effects on the ability of financial markets to carry out these functions. To understand how, the analysis below examines the tax's potential impact on the efficiency of financial market operations. Economists generally use the term efficiency to refer to the ability to attain a particular outcome at the lowest possible cost. The analysis in this section specifically relies on the concepts of price efficiency, risk efficiency, and economic efficiency. The analysis then turns to examining what effects an STT may have on financial market volatility and the level of security prices.

Financial markets are complex, which implies that the task of determining the effects of an STT is not straightforward. To cope with this complexity and facilitate the analysis, this section invokes three assumptions. First, it assumes that the tax would only be imposed on transactions in U.S. financial markets. Although some countries already have an STT or may be considering one, an analysis of a foreign securities tax is beyond the scope of this report. Second, the analysis only examines the effect of an STT on U.S. financial markets. Given the global nature of financial markets, an STT imposed in the United States would likely have an effect on other countries. The primary effects of the tax, however, would be concentrated in the United States. Third, the analysis is conducted under the general assumption that the STT would be broadly imposed on most U.S. securities transactions. When it is feasible or practical, however, the analysis highlights the effects of only taxing particular types of securities transactions. These assumptions allow for the construction of a useful framework within which an STT can be evaluated and do not alter the general conclusions of the analysis.

Price Efficiency

Security prices are signals that provide information that is used for important economic decisions. The flow of capital is determined by the behavior of savers and borrowers who respond to the information revealed by security prices. Businesses consider security prices when making investment and management decisions. Security prices affect the distribution of income and wealth in the economy by affecting the value of financial portfolios. Trends in security prices also affect consumer and business confidence, provide an indication of the health of the overall economy, and shed light on the private sector's opinion of government policies and other events. An STT would have an effect on one of the most important functions of financial markets; the determination of security prices.

How fast security prices incorporate new information and how accurate that information is can be measured by the price efficiency of financial markets. Security markets are price efficient when security prices are equal to their fundamental values. The fundamental value of a security is defined to be the total value of all payments that are expected to be received from owning the security, adjusted for the fact that most payments will occur in the future. In theory, the payments that a security is expected to make should depend on fundamental economic activity (profitability, investment opportunities, etc.) underlying the security. Thus, when a security's price is equal to the value of expected payments, the price reflects all information about fundamental economic activity (also known as "fundamentals") underlying the security.

Price efficiency depends on rational investor behavior, free information flows, and low transactions costs. Rational investors quickly move into and out of the market to profit from

mispriced securities, pushing prices back toward their fundamental values in the process. To determine if securities are mispriced, rational investors require up-to-date information about fundamentals. The flow of information is, in turn, dependent on the number of traders in the market who by their actions reveal more information to the rest of the market. And low transactions costs facilitate frequent trading when profitable trading opportunities arise, further increasing the flow of information and assisting in keeping security prices close to their fundamental values.

If financial markets are price efficient, then an STT would reduce efficiency by increasing transactions costs. To understand the mechanics of how efficiency would be reduced, consider an investor who computes the fundamental price of a security to be \$51. If the market price of the security is currently \$50, and no transactions costs exist, the investor would begin buying the underpriced security, pushing up its price until it reaches \$51. In contrast, if there were a tax of more than a \$1, investors would not find it worthwhile to buy the security even though it was underpriced. The flow of information would be inhibited, diminishing price efficiency and affecting important economic decisions that are partly based on security prices.

Although most economists generally believed that financial markets were efficient until the early 1980s, more recent economic research suggests that this may not be the case.¹³ There appear to be extended periods of times when the prices of securities do not fully reflect fundamentals—for example, bubbles and crashes. There are a variety of theories for why this may occur, but they generally rely on the existence of “irrational” or uninformed investor behavior and/or transactions costs. Irrational investors trade on the basis of information or events other than those related to fundamental values, such as price trends or emotions, for example. Transactions costs limit the discipline rational traders instill on security prices, which can lead them away from their fundamental values. The market is made riskier due to the increased uncertainty about how far and how long prices will diverge from fundamental values. The information conveyed by security prices is distorted and the ability to make economic decisions is reduced.¹⁴ As a result, financial markets become inefficient.

If financial markets are not price efficient, an STT could arguably be an effective policy tool to address the issue. An improvement in efficiency could be expected if an STT could be designed in such a way that the tax limited the trading activity of irrational investors. It is sometimes argued that there are high-frequency stock traders—those using powerful computers to trade in and out of large stock holdings within fractions of a second—who fall into the irrational investor category. By exacerbating price trends (bubbles and crashes) high-frequency traders may lead markets to be inefficient. An STT may be an effective deterrent to high-frequency stock traders because it could significantly increase their trading costs. Aside from high-frequency traders, others that engage in trading strategies that may destabilize markets may be deterred by higher transactions costs that would be the result of an STT.

¹³ Consider the following text from the then editor of the *Journal of Financial Economics*, Michael Jensen, “In the literature of finance, accounting, and the economics of uncertainty, the Efficient Market Hypothesis is accepted as a fact of life, and a scholar who purports to model behavior in a manner which violates it faces a difficult task of justification.” Michael Jensen, “Some Anomalous Evidence Regarding Market Efficiency,” *Journal of Financial Economics*, vol. 6, no. 2/3 (June/September 1978).

¹⁴ For a non-technical discussion of behavioral finance see, Robert J. Shiller, “From Efficient Markets Theory To Behavioral Finance,” *Journal of Economic Perspectives*, vol. 17, no. 1 (Winter 2003), pp. 83-104, and Richard Thaler, “The End of Behavioral Finance,” *Financial Analysts Journal*, vol. 55, no. 6 (Nov./Dec. 1999), pp. 12-17.

It is not clear, however, that an STT could be designed to predominately prevent irrational investment behavior for at least two reasons. First, distinguishing between rational and irrational trading can be difficult. For example, not all high-frequency traders are irrational. Some follow rational investment strategies that are based on exploiting profitable price discrepancies that arise when stocks differ from their fundamental values. As a result, they promote efficient securities markets as well as provide valuable liquidity so that others may trade when they need or want to. A broadly imposed STT runs the risk of deterring both rational and irrational investment behavior via higher transactions cost.

Second, it is possible that an STT could do more to limit rational behavior than irrational behavior. While, an STT would likely be construed by rational investors as an unfavorable change in fundamentals leading them to respond by limiting their trading, irrational traders may more or less ignore the tax since they generally do not base their decisions on fundamentals. As a result, a broadly applied transactions tax could make an already inefficient financial markets more inefficient.

Risk Efficiency

A securities transactions tax may have an effect on how efficiently risk is spread in the economy. Financial markets foster risk sharing by allowing individuals and businesses to trade securities that represent claims to a risky (uncertain) stream of payments. Risk sharing is important because it fosters an environment of innovation, investment, and increased economic activity. Risk efficiency refers to the situation where risk is transferred from those who are unable or unwilling to bear it to those who are.

A class of securities commonly used to share risk is derivatives. Derivatives are securities that derive their value from the value of another security, asset, commodity, or event. Types of derivatives include options, futures contracts, and swap agreements, among others. Regardless, all derivatives allow two or more parties to promise to make a transaction in the future at a price that is agreed upon today. Thus, they allow one to hedge, or insure, against future uncertain (risky) events.

For example, an airline may purchase jet fuel futures contracts in January to protect against the risk of high summer fuel prices. An airline would be able to do this because of a counterparty who speculates that prices will move in the other direction. As another example, consider a firm that has a variable rate loan, but would like the security of a fixed rate loan. The firm may be able to exchange their variable interest rate for a fixed interest rate via an interest-rate swap contract. Again, a counterparty may agree to the swap because of the opportunity to speculate that interest rates will move in their favor. Thus, some amount of speculation is necessary for those who want to lessen their exposure to risk, and for efficient risk spreading.

The existence of derivatives, however, does not in and of itself guarantee efficient sharing of risk. Under certain circumstances, derivatives may have the opposite effect. One way this can occur is if they are used in excess of what can be rationalized by risk-sharing motives. Sometimes this is referred to as speculation, although the discussion above indicated that some speculation is

justifiable on the basis of risk sharing. Therefore, it may be more useful to label such behavior as “excessive” speculation.¹⁵

Although an STT may reduce the number of derivatives purchased, whether risk sharing would improve would depend on who was taxed out of the market. If the tax were to reduce the fraction of derivatives used for excessive speculation, then efficiency could be improved. Determining if derivatives are being used for efficiency-improving risk sharing or excess speculation, however, is extremely difficult. A counterparty perceived to be speculating excessively may also be allowing another party to reduce their exposure to risk. Therefore, an STT could lead to a more inefficient sharing of risk if the tax restricts derivatives trading by certain parties motivated by legitimate risk management needs.

Another way that derivatives can lead to inefficient risk sharing is if there is a concentration of counterparty risk. This can occur when there are a small number of institutions being counterparty to a large number of derivatives contracts, and the counterparties fail to spread the risk that has been transferred to them by investing in a diverse portfolio of assets. Although risk is still being transferred, the transfer is inefficient because risk is concentrated among a few rather than spread out over many. Counterparties may fail to diversify away the risk they have accepted if they engage in transactions with other counterparties, making them all interconnected and actually increasing overall risk in the economy since the failure of one counterparty could have a domino effect. Some have argued that such a scenario contributed to the recent financial crisis.¹⁶

An STT would likely have limited ability to address the concentrated counterparty risk issue in the derivatives market for at least two reasons. First, it is not clear how an STT would encourage institutions that serve as a derivative counterparties to diversify their portfolios rather than trade amongst themselves. Second, a large fraction of derivatives trading occurs in the unregulated OTC market. Since the market is unregulated and standard practices do not exist, it is difficult to be sure that the other party to a derivatives contract is credit-worthy. The financial crisis made it apparent that, in fact, counterparties are not always credit worthy. Again, it is not clear how a tax on derivatives would address counterparty credit worthiness in an unregulated market without standard practices. Regulatory reform may be a more fruitful avenue for addressing this issue. See CRS Report R40646, *Derivatives Regulation in the 111th Congress*, by Mark Jickling and Rena S. Miller and CRS Report R40965, *Key Issues in Derivatives Reform*, by Rena S. Miller for a discussion of several proposals that have been made in the 111th Congress.

Economic Efficiency

Financial markets play an important role in determining the allocation of the economy’s resources. The concept of economic efficiency can be used to measure how well resources are allocated. An allocation is economically efficient when resources are allocated to their most productive use so that the mix of output that results is the one most highly valued by consumers.

¹⁵ There is no uniform definition of “speculation,” see Lynn A Stout, “Why The Law Hates Speculators: Regulation and Private Ordering in The Market for OTC Derivatives,” *Duke Law Journal*, vol. 48, no. 701 (1999), p. 735, and footnotes within.

¹⁶ For a more thorough discussion of concentrated counterparty risk, see Manmohan Singh and James Aitken, “Counterparty Risk, Impact on Collateral Flows, and Role for Central Counterparties,” *IMF Working Paper*, 09/173 (August 2009).

This section focuses on how the allocation of the economy's real capital (machines, buildings, etc.) and labor force would be impacted by an STT.

Capital

Businesses turn to financial markets as one way to raise funds to finance new capital investment. The supply of financing comes from investors who are seeking a return in exchange. For example, corporations partly finance new investment by issuing stocks (equity) and bonds (debt) that are purchased by investors.¹⁷ When considering whether to supply funds to the financial markets, investors compare the expected returns that financial securities offer to other investment opportunities, such as starting a business or investing in real estate.¹⁸ They also compare the expected return across the various financial securities. When investors can expect to earn a higher return by investing in financial securities than elsewhere in the economy, or by investing in a particular class of securities over another, then capital will tend to flow in the direction of the higher return. In a free market, investment returns should adjust to ensure an efficient allocation of capital. And an efficiently allocated capital stock is critical to the short- and long-run performance of the U.S. economy.

An STT may have an effect on the return to financial securities and may therefore have an effect on the allocation of the economy's stock. The tax could enhance economic efficiency if it were able to improve the pricing of securities so that they more accurately reflected fundamentals, or reduced any diversifiable risk that may be present. Conversely, efficiency could decrease if the tax distorted the relative return to financial securities, leading capital to be allocated to uses less productive than otherwise available. Efficiency could also decrease if the tax increased risk levels or hindered risk sharing. Risk levels could increase if, for example, debt financing were tax preferred over equity financing as is currently the case. A number of current STT proposals would not apply to debt security transactions and thus would make debt financed capital investment more attractive. Because debt financing (leverage) increases risk exposure, exempting debt security transactions from the tax proposals could reduce economic efficiency.

Whatever the effect of an STT on the efficient allocation of capital, it is important to keep in mind that likely there are also other distortions believed to be created by policies already in place. For example, the double taxation of equity source income (e.g., dividends) is believed to divert investment away from the corporate sector in favor of tax-preferred assets such as owner-occupied housing. Similarly, the ability to deduct interest payments on debt, but not dividends payments, favors debt over equity financing. As previously discussed, debt financing can increase risk exposure to economically inefficient levels. Lastly, tax depreciation rules vary across investment types and do not necessarily match economic depreciation. As a result, depreciation rules currently in use may distort investment incentives and reduce economic efficiency. It is not clear the degree to which an STT would add to the current distortions created by the tax code.

Labor

A number of well-known economists have also argued that more highly skilled labor is directed to the operation of the financial markets than is needed to efficiently determine prices, spread

¹⁷ Businesses also finance new investment using retained earnings.

¹⁸ Housing is included in measures of the nation's capital stock.

risk, and allocate capital.¹⁹ The increasingly complex array of financial products and the pursuit of short-term profits, they argue, requires highly educated workers committed to financial engineering or accessing information fractions of a second before anyone else. The social benefit of such endeavors may not justify the opportunity cost incurred when highly trained individuals forgo careers in fields with possibly higher social returns such as medicine, engineering, or education. Because an STT may reduce the return to financial markets career paths, it has been offered as a possible solution to this perceived market failure.²⁰

One problem with using an STT to correct this form of market failure is the inability to determine the size of the optimal tax. Assuming a market failure exists, the ideal tax would be set to a rate that would reduce the private return of pursuing a career in finance to the value that society places on such career paths. However, it is difficult if not impossible to distinguish between transactions that promote economic efficiency, and those that have no clear social benefit. Without the ability to make this distinction, it is difficult to design a tax to deter one type of transaction while leaving another one unaffected.

Another problem with instituting an STT to deter workers away from careers in finance is the assumption that they will seek careers with higher social returns. An STT may in fact lead some students considering a career in financial engineering to turn to the fields of medicine or education where the return to society is presumed to be higher. But an STT may also lead current and potential financial engineers to enter career fields with a lower social return than finance. It is difficult to state for certain that an STT would lead labor to be reallocated more efficiently.

Volatility

One of the rationales for imposing an STT is that it may reduce volatility in the financial markets. Volatility refers to the amount and frequency by which prices fluctuate over a set period of time. Volatility is necessary for financial markets to function efficiently; without some volatility, security prices could not track fundamentals. For example, if a company announces that it has made a technological breakthrough that will result in increased profitability, stock prices need to also increase to reflect the improvement in fundamentals relating to the prospect of higher future earnings. Volatility can be a problem, however, when it is “excessive,” or beyond what is needed for prices to track fundamentals. Ideally, an STT would reduce excessive volatility, but leave fundamental volatility unaltered.

Theoretically, the effect of an STT on volatility is uncertain. An STT could increase volatility because investors may have to wait for prices to deviate further from their fundamental values before it becomes profitable to enter the market. The increased cost of trading could therefore lead to larger movements in security prices and hence greater volatility. An example of this was presented in the discussion of price efficiency. On the other hand, an STT could theoretically reduce excess volatility if it deters certain destabilizing investment behavior that pushes security prices away from fundamentals, eventually leading to sharper price corrections.

¹⁹ See James Tobin, “On The Efficiency of The Financial System,” *Lloyds Bank Review*, vol. 153 (1984), pp. 1-15; Lawrence H. Summers and Victoria P. Summers, “When Financial Markets Work Too Well: A Cautious Case For a Securities Transactions Tax,” *Journal of Financial Services Research*, vol. 3, no. 2-3 (December 1989), pp. 261-286; and Joseph E. Stiglitz, “Using Tax Policy To Curb Speculative Short-Term Trading,” *Journal of Financial Services Research*, vol. 3, no. 2/3 (December 1989), pp. 101-115.

²⁰ See Summers and Summers pp. 271-272.

There have been a number of empirical studies that have examined how STTs and STT-like regulations have affected volatility. Economists Richard Roll found no economic evidence of transaction taxes having an effect on stock price volatility in a study of 23 countries' stock markets.²¹ Another study by economist Steven Umlauf examined the introduction and increase of a transaction tax in Sweden during the 1980s and found that stock-return volatility appeared to increase.²² Charles Jones and Paul Seguin studied a regulatory change that is analogous to a reduction in transactions costs and found that stock price volatility decreased, which would suggest that the imposition of an STT may increase volatility.²³ Karl Habermeier and Andrei Kirilenko provide a review of additional empirical studies that support those cited here.²⁴

The results of the studies cited above may not be directly applicable to understanding the effect of instituting an STT on volatility today. Many of the studies cited above rely on data over 20 years old. Regulatory changes and advances in technology may have fundamentally changed the way financial markets operate over time. One technological change that has occurred during the past 15 or so years is the use of high-frequency trading techniques. Some reports suggest that today high-frequency trading represents between 40% and 70% of all U.S. equity trading volume.²⁵ While it is difficult to determine how much trading is high-frequency, if the amount of trading that is high-frequency has increased substantially over time, than older STT studies may be too dated for use today.

Security Prices

The effect of an STT on security prices is uncertain as a result of three potential effects—a price effect, a risk effect, and a budget effect. The price effect refers to the reduction in security prices that could be expected to occur as buyers reduce the prices they would be willing to pay for securities due to the tax. Not only would current buyers reduce the price they would be willing to pay for a security as a result of the tax, but so would future buyers since they would also have to pay the tax. As a result, the price that investors should be willing to pay for a security could arguably be expected to decline by the discounted present value of all of the taxes to be paid on each future sale. This decline could be expected to occur once the market realized that an STT was inevitable.

The risk effect refers to the general inverse relationship between prices and risk levels. When risk is high, prices tend to be low to incentivize investors. Likewise, when risk is low, prices tend to be high because investors are willing to pay more in return for lower risk. If an STT were to lower risk, as measured by volatility, for example, then security prices could be expected to increase. As discussed in the previous section, however, it is not clear that an STT would indeed

²¹ Richard Roll, "Price Volatility, International Market Links, and Their Implications for Regulatory Policies," *Journal of Financial Services Research*, vol. 3, no. 2/3 (December 1989), pp. 211-246.

²² Steven R. Umlauf, "Transaction Taxes and the Behavior of the Swedish Stock Market," *Journal of Financial Economics*, vol. 33, no. 2 (April 1993), pp. 227-240.

²³ Charles M. Jones and Paul J. Seguin, "Transaction Costs and Price Volatility: Evidence from Commission Deregulation," *The American Economic Review*, vol. 87, no. 4 (September 1997), pp. 728-737.

²⁴ Karl Habermeier and Andrei A. Kirilenko, "Securities Transaction Taxes and Financial Markets," *IMF Staff Papers*, vol. 50 (2003), pp. 165-180.

²⁵ Cristina McEachern Gibbs, "Breaking it Down: An Overview of High-Frequency Trading," *Advanced Trading*, Oct. 1, 2009, available at <http://www.advancedtrading.com/showArticle.jhtml?articleID=220300267>.

reduce volatility. If an STT were to have the opposite effect of increasing volatility than the risk effect would reinforce the price effect and security prices would fall.

The third potential effect, the budget effect, refers to the increase in security prices that could result if revenue from an STT were used for deficit reduction, spurring investor confidence. Budget deficits and the public debt are part of the set of fundamentals investors use to make investment decisions. At high levels, deficits and the debt may lead to a deterioration of business conditions and undermine investors' confidence. To the extent that an STT might avert this development, it would have a positive effect on the asset values and securities prices.

Potential Revenues From an STT

It is difficult to predict the potential revenue that an STT might raise. The difficulty comes from uncertainty about future economic projections, unknown potential behavioral responses by taxpayers, and notable differences among legislative proposals. It is possible, however, to get some idea about potential magnitude of the revenues, based on past estimates of similar proposals and collections from a currently imposed fee on security transactions.

Revenues from an STT could be significant, but potential behavioral responses to the tax by traders put a limit on its yield. Too high a rate of tax would likely significantly reduce the trading volume on the financial markets. This would not only reduce the STT's revenue, but may also have negative repercussions for the broader economy. At the same time, a low-rate tax might generate significant revenues without causing these negative consequences.

In general, the revenue from a tax is equal to the tax rate multiplied by the taxable base. The taxable base, however, is not static, but in turn depends on the tax rate. Typically, as the tax rate increases, the size of the taxable base decreases, because taxes discourage the taxed activity. This behavioral response implies that generally, an increase in the tax rate by, say, 5% might increase revenue by less than 5%. This constraint imposes a limit on how much revenue an STT could possibly raise. If an STT were imposed, taxpayers may alter their behavior and reduce the number and value of taxable transactions. As a result, the revenue may fall far short of static projections.

In addition, net revenue from an STT would be further reduced by its interaction with existing taxes. An STT would likely become a new tax-deductible cost, which would reduce taxable income of many taxpayers. That, in turn, would reduce the income tax revenues of the federal government.²⁶ Thus, the net revenue effect of an STT would be smaller than the STT collections alone by the amount of the income tax reduction, creating so-called negative feedback.

The cumulative behavioral effect of both the trading volume reduction and negative revenue feedback is a key determinant of the possible revenue from an STT, but it is hard to quantify. It varies depending on many factors, a number of which change over time. For example, the effect of negative feedback on income tax collections might be smaller in a year when many taxpayers report losses and larger in a year when taxpayers report income. Trading volume response to an

²⁶ Using similar logic the Joint Committee on Taxation (JCT) and other federal agencies adjust their estimates of the revenue effects of the excise tax changes, as described in JCT, *Overview of Revenue Estimating Procedures and Methodologies Used by the Staff of the Joint Committee on Taxation*, JCX-1-05, Feb. 02, 2005, p. 14.

STT might also depend on a number of factors, including technological advances, policies of other governments, and global economic environment, to name just a few.

To get an idea about the possible realistic magnitude of the collections, it might be helpful to analyze the historical estimates of similar legislative proposals and see how these projections might change in today's environment. It may also be instructive to compare them to the revenues generated by the currently imposed fee that resembles the proposed tax. Since recently introduced proposals vary in many specifics, the foregoing discussion in this section assumes 0.25% tax rate and the taxable base limited to trading on SEC-regulated exchanges.

Possible Revenue Based on the Historical Estimates

Over the past decades, proposals to impose some sort of an STT were advanced and analyzed by various individuals and organizations. For example, in 1990, the Congressional Budget Office (CBO) estimated a proposal to impose a 0.5% securities transfer excise tax, which is similar in many respects to some of the current proposals.²⁷ At that time, the CBO estimated the potential revenue impact over five-year period at \$57.7 billion.

Many factors have changed, however, since the CBO offered this estimate. First, assuming current legislative proposals would impose the STT at the rate of 0.25%, the rate used by CBO in 1990 (0.5%) was twice as high as is proposed now. Obviously, the lower rate of the recent proposals would considerably reduce the expected revenue yield.

The second factor that would play a critical role is the high growth of the securities trading volume between 1990 and 2007. According to the SEC data, the value of shares traded on the SEC-regulated exchanges in 1990 was \$2.23 trillion.²⁸ By 2007, it grew to \$66.1 trillion, or almost 30 times.²⁹ Such a significant increase in transaction volume would increase the potential revenue from an STT.

The third important, but difficult to quantify, factor is the possible difference in the magnitude of behavioral responses between the early 1990s and today. For example, if market structure were the same, the response to a 0.5% tax would be greater than the response to a 0.25% tax. But the market changed considerably between 1990s and today. Because of the reductions in the overall transaction costs since the early 1990s, an STT at 0.25% rate might represent a larger relative increase today than 0.5% tax did in the past. Thus behavioral responses to an STT could be stronger today than at the time when CBO performed its analysis.

Combining these three factors and given the uncertainty surrounding the behavioral effects, it appears that the possible revenue yield of the current proposal could be roughly an order of magnitude above the 1990 estimates. The scale of the numbers suggests that revenue collections in the range of tens of billion dollars per year are potentially feasible.

²⁷ CBO, *Reducing the Deficit: Spending and Revenue Options*, A Report to the Senate and House Committees on the Budget—Part II, Feb. 1990, p. 388. JCT estimated a similar proposal with similar results, thus the foregoing analysis applies to both estimates.

²⁸ SEC, *Select SEC and Market Data*, p. 27.

²⁹ Even though 2008 trading volume figures are available, using 2007 data might represent a better benchmark for analysis. Trading volume increases significantly when new information arrives. A large number of significant news arriving to the market during the financial crisis of 2008 might have inflated the trading volume that year.

Given unavailability of all necessary data, it is only possible to evaluate the range of potential revenue outcomes using several assumed values of the unknown parameter. For example, Baker, Pollin, and McArthur select three scenarios: 0%, 20%, and 50% reduction in transaction volume.³⁰ Another paper by the same authors, which explains their methodology in greater detail, points out, however, that “because of the uncertainties ..., it is not possible to generate a reliable point estimate of the [STT's] revenue potential. We have therefore opted for a less exacting approach, which is to establish rough orders of magnitude for our revenue estimates—and no more than that....”³¹ Of the three revenue reduction assumptions presented by the authors, only two appear to be plausible: 20% and 50%. The 0% scenario—implying no reduction in trading volume—appears unlikely. Thus, the estimates below use only the two more plausible values: 20% and 50%.

The examples in **Table 1** assume that the STT would apply to the transactions occurring on the SEC-regulated exchanges. In 2007, the SEC reported that the total value of transactions in the U.S. stock, options, and security futures was \$66.1 trillion.³² This volume does not include bond trading, trading occurring off the SEC-regulated exchanges, and other markets. While trading volume on these markets may be significant, these transactions may not become a part of taxable base for various reasons, ranging from governmental exemptions to administrative and evasion problems.

Table 1 shows estimates of the possible net revenue from the 0.25% STT in 2007 under two different assumptions about a taxable base reduction, which follow Pollin et al. For example, using the 2007 trading volume as a starting point and assuming a 20% reduction in the taxable base, the net STT revenue would have been \$132.3 billion in 2007 (= \$66.1 trillion multiplied by 80% and 0.25%). The estimate for the second scenario is performed in a similar manner, yielding \$82.7 billion.

Table 1. Order-of-Magnitude Estimates of the Potential Net Revenue From the 0.25% Transaction Tax Under Different Taxable Base Reduction Assumptions

Assumed Taxable Base Reduction	Projected Annual Revenue, \$ billion
20%	132.3
50%	82.7

Source: Congressional Research Service

³⁰ Dean Baker, Robert Pollin, Travis McArthur, and Matt Sherman, *The Potential Revenue from Financial Transactions Taxes*, Center for Economic and Policy Research and the Political Economy Research Institute, Issue Brief, December 2009, <http://www.cepr.net/documents/publications/ftt-revenue-2009-12.pdf>. Under their methodology trading volume reduction effectively accounts for all behavioral responses. Given “order of magnitude” nature of the estimates, their approach simplifies exposition without altering broad conclusions.

³¹ Robert Pollin, Dean Baker, and Marc Schaberg, *Securities Transaction Taxes for U.S. Financial Markets*, Political Economy Research Institute, Conference paper prepared for Financialization of the Global Economy, 2002, http://www.peri.umass.edu/fileadmin/pdf/working_papers/working_papers_1-50/WP20.pdf.

³² SEC, *Select SEC and Market Data*, Fiscal 2009, <http://www.sec.gov/about/secstats2009.pdf>, p. 27, units in the source table are assumed to be million of dollars. The reported trading volume increased in 2008, the latest available year, but, because 2008 was an anomalous year for the financial markets, 2007 might be more representative of them operating in a normal way.

These estimates suggest that an STT may reasonably yield significant new revenue. It also shows that the revenue negatively depend on the magnitude of behavioral responses. It is important to keep in mind that a significant reduction in the trading volume implied by the second scenario might be considered undesirable by many, because of the negative effects on market liquidity (“depth”) mentioned earlier.

Trading volume not included in the SEC data may represent a source of additional revenue. The estimates, however, do not account for various kinds of exemptions included in some of the proposals, such as exemption for retirement accounts, etc. Such exemptions would reduce the revenues.

Comparison to the Section 31 Fee Collections

Revenues raised by a fee, which is similar in some ways to the proposed tax, might provide another point of comparison. The U.S. currently imposes a “Section 31” fee (in reference to Section 31 of the Securities Exchange Act of 1934) on certain securities transactions. The fee is used to fund the operations of the SEC, and its rate is adjusted regularly so that total collections meet the SEC’s funding needs. For FY2009, the fee was set at \$12.70 per million dollars, or 0.00127% per transaction, and was projected to generate revenues slightly over \$1.0 billion.³³

If both an STT and the Section 31 fee would largely apply to the same transactions, and assuming no behavioral responses, the STT revenues would be proportionate to the increase of the STT rate over the fee rate. At 0.25%, the STT rate is nearly 200 times the rate of the Section 31 fee. The adjustment for behavioral responses is, again, unknown, but would likely be significant. Thus, the STT revenue would not be 200 times as large as the fee revenue. Nevertheless, the magnitude of the numbers confirms an earlier conclusion that revenue collections in the range of tens of billion dollars per year are potentially feasible.

Tax Incidence

An important characteristic of any tax is how its burden is distributed among different classes of potential taxpayers, or its tax incidence. It is important to distinguish between statutory and economic incidence of taxes. Taxpayers legally responsible for collecting and transmitting the tax to the government bear its statutory burden. In case of an STT, its statutory incidence may fall on securities traders, or possibly their brokers. Statutory burden does not imply, however, that taxpayer’s income or wealth decreases because of the tax.³⁴

In contrast, the concept of economic incidence of a tax is focused on who experiences a reduction of income or wealth. It is generally different from the statutory incidence, but is often difficult or impossible to ascertain. In addition, it is likely to change over time depending on market conditions.

³³ For further information see CRS Report RS20953, *Reducing Securities Transaction Fees: Effects on Collections of H.R. 1088 and S. 143*, by Mark Jickling and SEC announcements for appropriate years, available at <http://www.sec.gov/divisions/marketreg/mrfreqreq.shtml#feerate>.

³⁴ Taxpayers may also bear some administrative and other costs due to the tax, but these costs are not considered here.

In most situations, the economic burden of a tax is shared by all economic agents engaged in a marketplace, but the shares of the burden depend on a number of factors. For example, an excise tax paid by distributors of an item that has no close substitutes may be passed onto consumers through higher prices. Thus, consumers would bear the economic incidence of such a tax. On the other hand, if a similar tax is imposed on an item that has a close substitute, the distributors and other suppliers may have to absorb most of the cost of this new tax rather than raise prices. In this instance the economic burden would largely fall on suppliers.

In the case of a transaction tax, the economic incidence can be analyzed from several perspectives. Policymakers are often concerned about how the tax would affect taxpayers depending on their institutional form (corporations versus individuals), trading pattern (short-term traders versus long-term traders), and income level (higher-income taxpayers versus lower-income taxpayers). These three aspects of the issue are analyzed below.

Corporations Versus Individuals

The distinction between statutory and economic incidence is quite notable when analyzing the STT burden distribution between corporations and individuals. Both corporations and individuals trade on securities markets. Thus, the statutory burden would be split between these two classes of taxpayers. The statutory incidence of the tax would probably largely fall on corporations and other business entities, because they trade more than individual taxpayers.

Even though the statutory burden would be split, individuals would bear the full economic burden of an STT. The economic burden of an STT, or any other tax, on corporations is always zero, because corporations are legal, not physical, entities, established to serve the best interests of their shareholders. As such, corporations themselves are not the beneficiaries of their profits. Rather, the corporation's owners benefit from the profits. Other individuals, such as employees or consumers, might also benefit from corporation's activities. Thus, the cost of an STT imposed on the transactions by corporate entities would ultimately be passed onto individual taxpayers: the corporation's owners, its workforce, its customers, or its suppliers.

At the same time, the cost of an STT to individual taxpayers may be hidden. Individuals typically trade through brokers, who might not state the tax explicitly, but rather incorporate it in a trading fee. This "invisibility" of the tax might make it more politically attractive to some.

Short-term Traders Versus Long-term Traders

Another aspect of the STT incidence is its distribution among short-term and long-term traders. The more trades a taxpayer performs in a given period, the higher the burden of an STT would be. A low-rate STT might impose a negligible burden on investors holding assets for a long period of time, but it might represent a significant burden for frequent traders.

The difference between the effects of an STT on short-term and long-term traders may become more apparent by comparing an effective annual rate of an STT, rather than a nominal rate. Consider someone making one \$1,000,000 transaction in five years. This investor's tax liability under an STT with the nominal 0.25% rate would be \$500 per year ($=0.25\% \times \$1 \text{ million} / 5$), for an effective annual rate of 0.05% of the asset value ($=\$500 / \$1,000,000$). In contrast, consider a short-term trader with a \$1,000,000 daily turnover. Such an investor would be liable for \$2,500 in STT every day. Assuming 250 trading days per year, such an investor would pay \$625,000

($=0.25\% \times \$1\text{million} \times 250$) in STT annually, for an effective annual STT rate of 62.5% of the asset's face value ($= \$625,000 / \$1,000,000$). Thus, the STT's effective annual rate varies widely depending on taxpayer's trading horizon.

Trading turnover of some market participants is much higher than \$1,000,000 per day. Some of them base their trading strategy on a large number of frequent trades. For example, they might exploit profitable arbitrage opportunities that exist for extremely brief periods of time. As one such trader described the operation of this strategy, "the high-speed fund could make thousands of trades a second and holds them for a matter of minutes."³⁵ For this business, reported daily turnover routinely falls between 60 million and 80 million shares. At that trading frequency, the burden of an STT liability would likely eliminate the possibility of profit on those transactions.

Thus, an STT would place a disproportionately large burden on short-term speculative traders and may render some of their current trading strategies useless. Some view that development favorably and, in fact, propose an STT to curb the volume of short-term trading. The desirability of this reduction hinges critically on the beliefs about a destabilizing role of short-term speculative traders in the financial markets. As mentioned above, research is inconclusive on the topic. It suggests that short-term traders may often perform an important stabilizing function in the markets by supplying liquidity, even though at times their behavior may destabilize the markets.

Distribution of the Tax Burden by Income

Another aspect of the tax burden distribution is how it affects taxpayers across the income spectrum. As discussed above, the economic burden of an STT would ultimately fall on individual taxpayers, regardless of the statutory incidence. Many observers believe that the STT burden would largely fall on owners of capital. That would happen because they are the ones who either trade financial assets directly or hold ownership in financial companies that trade in the financial markets.

If that is the case, the tax would fall roughly on the same group of taxpayers who currently pay income taxes on capital gains and dividends, even though shares of the STT burden within that group would be different from shares of the capital gains burden. Capital gains taxes are highly progressive, that is, as a share of taxpayer's income they rise as income rises.

At the same time, some argue that the true economic incidence of capital gains taxes is less progressive because they indirectly reduce labor compensation.³⁶ Economic theory supports the possibility of such an effect, but its magnitude is uncertain. Thus, such indirect effects on labor could be relatively weak or strong. It is likely that the magnitude of this effect would vary across sectors of the economy and market conditions.

³⁵ Bryant Urstadt, "Trading Shares in Milliseconds," *Technology Review*, January/February 2010, at <http://www.technologyreview.com/computing/24167/page1/>.

³⁶ According to economic theory, labor compensation is positively related to labor productivity, which in turn is positively related to availability of capital. If a tax makes capital less available, productivity of labor and its compensation would decline.

Policy Options and Considerations

Congress faces several policy options as the debate over an STT continues. First and foremost is the issue of whether to impose an STT at all. Conditional on agreeing to impose an STT, the second issue is how to design such a tax. Finally, revenue from an STT could be used for several purposes, so policymakers may choose to consider where it should be directed and for what use.

The answers to these questions largely depend on the objectives of Congress. Two justifications commonly offered for implementing an STT are that it would improve financial markets operations or be a significant source of revenue. The following discussion addresses aforementioned policy options within the context of these two justifications.

Policymakers may face a dilemma of which of the policy goals is primary, and which one is secondary, because it seems unlikely that an STT may be designed in a way that would be optimal to meet both goals at once. The first goal—improving financial market operations—implies that the design of an STT should aim at changing the behavior of taxpayers. In contrast, as far as revenue raising is concerned, optimal design of a tax, according to economic theory, strives to minimize behavioral responses in order to minimize the tax's social costs and increase its revenue yield. Thus design features optimal for meeting one goal might be sub-optimal for the other.

Impose an STT or Not?

If the objective of policymakers is to improve financial market operations, then it is not clear that an STT would be the most effective tool, or effective at all. The analysis in the body of this report suggests that the tax's effects on financial market efficiency are uncertain. Thus, improving financial market operations may be better handled via some other mechanism such as reforming the regulatory environment within which derivatives and high-frequency traders operate, for example. If policymakers do proceed with an STT as a means for improving financial market operations, one option would be to begin with a low tax rate, perhaps lower than 0.25%, and increase it only if additional research supports such a move.

If the objective of policymakers is to raise tax revenue, a carefully designed STT may be an option. While opponents of the tax may argue that it would have a negative effect on economic efficiency, the same can be said about other taxes. Thus, the question is whether an STT is the best of all available options that can reasonably raise a given amount of new revenue, rather than whether it has some negative consequences.

Design of an STT

There are two major design elements of an STT, which policymakers may vary. The first is the taxable base, or what transactions and which investors would be taxed. The tax could be designed to apply to all securities or only particular ones. Likewise, the tax could be designed to apply to all traders, or specific types of traders. The range of possibilities for choosing the taxable base is seemingly infinite given the variety of types of securities and traders that exist.

The second design element is the tax rate. Given the proposals that have been offered thus far, it is realistic to expect that the rate could be some fraction of 1%, with 0.25% being one of the most frequently mentioned. But as is the case when choosing the taxable base, there are numerous

options for the tax rate. The number of options are compounded by the fact that different securities or different traders could be subject to different tax rates. Regardless, each of these choices entails different consequences for the potential revenue and financial markets effects of the tax.

To raise more revenue at a minimal social cost, policymakers may want to expand the taxable base, broadly applying an STT at a low rate to as many types of securities as possible. Economists generally believe that a broad taxable base with low tax rates minimizes economic distortions or economic efficiency losses. This is because a broad base with low rates lessens the potential that investors and business will respond in ways that lead to the misallocation of resources. A taxable base so designed, would limit taxpayers' ability to avoid the tax by migrating to untaxed segments of the market, thus maintaining revenue-raising potential of an STT. A broad taxable base would include corporate stocks and bonds, government securities, commercial paper, certificates of deposits, options, futures, swaps, warrants, and the multitude of other derivatives products that exist now or may emerge in the future.

Taxing a broad spectrum of securities, however, involves an administrative tradeoff. For example, in contrast to trading activity that occurs on regulated exchanges, many of the transactions that take place in the OTC markets are between private parties which can lead to a lack of transparency. This lack of transparency may make the administration and enforcement of an STT more difficult. On the other hand, taxing transactions on regulated exchanges and not taxing transaction in the OTC markets could elicit an unintended behavioral response as some trading activity migrates from regulated to unregulated exchanges.

Another complication with taxing all classes of securities may arise from the fact that different markets may respond differently to an STT at any given rate. For example, a tax at a rate that would not cause major reduction in trading volume on the stock market, might be prohibitively high for trading in the foreign exchange market, where margins are much lower. This issue may lead to considering differential STT rates in different markets.

The differential STT rates may pose other problems, though. First, it is difficult to establish a set of rates that would treat all markets equally. Second, financial engineering may allow savvy investors to avoid or minimize taxation if there exists a differential tax treatment among securities. For example, if stocks are taxed more heavily than options, an investor may lower their tax liability by using options to replicate the stock's return. One can imagine that given the variety of securities that exist today or may be created in the future, investors may try to exploit differential tax treatments to avoid taxes.

Critics of the tax believe that this behavioral response could be detrimental to the operations of the financial markets and lead to large efficiency losses, as it might impede capital flows in the economy. To limit this problem, policymakers might design certain tax relief mechanisms. One possible approach might be allowing refunds of an STT if taxpayers could demonstrate that trading in an alternative mix of securities would have resulted in a lower tax liability. This approach would reduce the potential STT revenues, but would avoid preferential treatment of certain securities. Its implementation may involve additional research.

Another consideration of an STT design might be its effect on short-term, high-volume traders. An STT, even at a low nominal rate, would place a major tax burden on such traders. Thus, an STT may discourage short-term trading. Some proponents of the tax consider this effect a positive feature of the tax and a major argument for it. At the same time, others believe that short-term

traders play an important role in the financial markets and without them, the market would be less efficient.

Given the opposing views on the role of short-term traders in the financial markets, it may be important to have an option of imposing an STT with only a modest impact on short-term trading. This may be achieved through a variety of tax relief mechanisms. For example, Congress may set a cap on the maximum STT liability either annually per taxpayer or per trade. By fine-tuning these options policymakers may target this relief only to limited groups of taxpayers, preserving an STT's revenue-raising potential.

Competition from overseas markets sets another limitation that policymakers in the United States might take into account. If the tax increases the cost of trading in domestic markets relative to trading in foreign markets, some financial market activity may move overseas. Realizing this, some have proposed that the United States coordinate with other countries in instituting an STT. However, there has been some skepticism about the ability to organize such a coordinated effort.

At the same time, one could argue that such a migration might be limited in scope because there may be some tolerance to a small cost differential between the United States and other world markets. The U.S. financial markets are the largest, most transparent, and most liquid (“deep” or “thick”) markets in the world. By moving overseas traders might lose these advantages, which would be particularly important to high-volume frequent traders. Other trading sites might have a legal, technological, and institutional environment similar to that found in the United States, but they would not have a comparable number of buyers and sellers, which is a key characteristic of a liquid market. It would take a coordinated simultaneous migration by a large group of traders from the United States to a single alternative trading site to make up for that deficiency. Such coordination is difficult to envision in practice. Thus, traders might accept some added cost of doing business in the United States, as the benefits might still outweigh the extra cost.

Furthermore, the response of the United States to the recent financial market turmoil demonstrated this country's ability and aptitude to address large and systemic adverse shocks. For example, some smaller nations with disproportionately large financial sectors could not protect their financial institutions during the time of the crisis, leading to repercussions throughout the broader economy. In other cases, investors seriously questioned some nations' ability to protect financial institutions in case of further deterioration of the situation. When faced with the possible systemic market disruptions, the U.S. government provided relief to many troubled institutions, giving markets an opportunity to operate throughout the recent financial crisis. Investors would likely take this into consideration when deciding in which markets they would like to trade. This may be another incentive to maintain trading on the U.S. markets, especially to large traders thinking about their business perspectives over a long horizon.

Use of the STT Revenue

The revenue generated from an STT could be used for several purposes. One purpose could be general revenue raising, with all revenues allocated to the general fund. In this case, the STT would be treated as any other revenue stream and policy makers could use it to help support policy initiatives deemed important, such as health care, debt reduction, or education. In this case an STT should be compared to all other available options from increasing currently imposed taxes to levying other new taxes to reducing spending.

Alternatively, revenues, or some portion thereof, could be set aside for specific purposes. For example, an STT could be used to establish a fund to pay for past or future emergency actions by the government, or to pay for additional governmental regulatory and enforcement activity, which would make financial markets more stable in the future. In addition, funds from an STT might finance educational or infrastructure projects that would also have a beneficial long-term effect on business conditions. If successful, such projects would have a positive effect on the values of financial assets. As discussed in the “Security Prices” section of this report, even if the imposition of an STT might reduce the value of financial assets, it may fund improvements in the business conditions that could ultimately increase the value of financial assets, leading to uncertain net effects.

Appendix A. Historical and International Background

A tax on securities transactions has precedents in the United States. At the federal level there was a stock transfer excise tax (sometimes called documentary stamp tax) on the issuance and subsequent transfers of securities from 1914 to 1966. The tax rates on these transactions were 0.1% and 0.04%, respectively. The tax was repealed as part of the Excise Tax Reduction Act of 1965 (P.L. 89-44), which also repealed a number of other excise taxes, many of which were imposed to deal with the emergencies during the Great Depression or wartime.³⁷ The purpose of the act was to remove unnecessary impediments to economic growth and consumer and business spending in the context of improving federal fiscal positions.

Proposals for an STT have been made in previous Congresses and by previous Administrations. In the 1980s and 1990s, there were proposals by Presidents George H. W. Bush and Bill Clinton, as well as former Speaker of the House James Wright, to introduce some sort of an STT in the United States.³⁸ Some of these proposals were targeted to narrow segments of financial markets, such as trades in derivatives, while others were broader and covered most financial transactions. No proposal was ever enacted into law.

At the State and local level, the State of New York, in conjunction with New York City, taxed the transfer of stocks from 1905 to 1981.³⁹ There have been proposals in New York to reinstate the transfer tax since its repeal.

A tax on securities transactions also has international precedents. Many governments around the world impose some kind of an STT. As **Appendix B** shows, specifics vary by country.⁴⁰ In many countries STTs were either reduced or completely eliminated over the last decades, largely to reduce transaction costs in line with a global trend. In the years after the recent financial crisis, however, some countries either have increased the STT or are considering doing so.

For those countries that have an STT, the tax historically has not represented a major revenue source. For example, in Japan the STT revenue reached 4.2% of the government general account

³⁷ U.S. Congress, Report of the Committee on Ways and Means, House of Representatives, *Excise Tax Reduction Act of 1965*, to accompany H.R. 8371, 89th Cong., 1st sess., May 28, 1965, H.Rept. 433 (Washington: GPO, 1965), pp. 9-11.

³⁸ For further information, see CRS Report 90-415, *Taxation of Securities Transactions to Discourage Short-Term Investment: a Selected Bibliography*, by Louis Alan Talley; CRS Report 90-350, *The Securities Transactions Tax: an Overview of the Issues*, by Donald W. Kiefer; and CRS Report 93-474 E, *A Tax on Large-Dollar Wire Funds Transfers?*, by William Jackson. (These reports are out of print, but available on request from the author.)

³⁹ For example, details of the tax in New York state are described in Robert Pollin and James Heintz, *Confronting the New York Fiscal Crisis: Raising Revenue Through Taxing Stock Market Transactions*, Research Brief 2003-4 (Political Economy Research Institute, University of Massachusetts, Amherst, June 2003), p. 2, available at http://www.peri.umass.edu/fileadmin/pdf/research_brief/RB2003-4.pdf.

⁴⁰ In addition to the Appendix of this report, see Appendix in CRS Report 90-350 and Table 1 in Bob Pollin, "Applying a Securities Transactions Tax to the US: Design Issues, Market Impact, Revenue Estimates," in *Debating the Tobin Tax*, James Weaver, Randall Dodd, and Jamie Baker, eds. (Washington, DC: New Rules for Global Finance Coalition, 2003), p. 122, visited online on Feb. 20, 2004, at <http://www.new-rules.org/Docs/tobintax/debatingthetobintax.pdf>.

revenue in 1988.⁴¹ However, by 1993 this share had fallen to 0.96%. Still, even 1% of the total revenue in a major economy may represent a significant sum of revenue.

⁴¹ Peter M. Garber, "Issues of Enforcement and Evasion in a Tax on Foreign Exchange Transactions," in *The Tobin Tax: Coping with Financial Volatility*, Mahbub ul Haq, Inge Kaul, and Isabelle Grunberg, eds. (New York, Oxford: Oxford University Press, 1996), p. 130.

Appendix B. International Overview of STTs

Table B-1. Select Countries With Transactions Tax and Key Features of Its Implementation

Country	Existence of a Tax	Type of Securities Taxed	Rates
Australia	(1) Tax on transfer of shares or units on the Australian Stock Exchange was abolished in every state and territory as of July 1, 2001. (2) Stamp duty in three states (New South Wales, South Australia & the Australian Capital territory). As per an Intergovernmental Agreement on Federal Financial Relations, these stamp duties need to be abolished by July 1, 2013.	(2) Unlisted marketable securities.	(2) 0.6% in South Australia, 0.6% per AU\$100 or part thereof in New South Wales with a minimum of AU\$10, and 0.6% per AU\$100 or part thereof in the Australian Capital Territory with a minimum of AU\$20.
Belgium	(1) Tax on purchase or sale concluded or executed in Belgium; (2) Tax on delivery of bearer securities; (3) Tax on issuance of securities repealed in 2004, as European Court of Justice found tax violated EU Directive 69/335, as amended by EU Directive 85/303.	(1) Belgian or foreign government stocks; (2) Belgian or foreign government stocks.	(1) €1.70 per €1,000 worth of securities with a cap of €500 per transaction; (2) 0.6%.
France	Repealed as of Jan. 1, 2008. Tax viewed as counterproductive to Paris's attractiveness as a major financial center.		
Germany	Repealed by Act of Feb. 22, 1990, to conform to the spirit of EU Directive 69/335, as amended by EU Directive 85/303, which discouraged such taxes by allowing for large-scale exemptions.		
Greece	Tax has existed since 1998. In 2008 the Ministry of Economy and Finance was considering eliminating the tax. Current tax reform, however, does not address the issue.	Greek Stock Exchange.	0.15%
Hong Kong	(1) Stamp duty assessed on both purchase and sale plus a fixed stamp duty to execute transfer instrument; (2) Stamp duty on transfer other than by way of sale.	(1) & (2) Hong Kong stock (stock the transfer of which is required to be registered in Hong Kong).	(1) 0.1% of the value of the shares bought or sold plus fixed stamp duty of HK\$5; (2) 0.2% plus fixed stamp duty of HK\$5.
Ireland	Stamp duty where the value of consideration is above €1,000.	Transfer of stocks or marketable securities of a company incorporated in Ireland.	1%
Japan	Repealed as of Apr. 1, 1999.		

Country	Existence of a Tax	Type of Securities Taxed	Rates
South Korea	Tax assessed on transfer value.	Share certificates of a corporation. Stocks listed on overseas stock exchanges not subject to tax.	0.5% basic rate. Temporary rates may be set to boost the capital market. Currently temporary rate of 0.15% for stock market-listed stocks and 0.3% for the KOSDAQ-listed stocks.

Source: This table was prepared by the staff of the Law Library of Congress.

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