FINANCIAL TRANSACTIONS TAXES: AN OVERVIEW

Leonard E. Burman, William G. Gale, Sarah Gault, Bryan Kim, Jim Nunns, and Steve Rosenthal
January 2016

ABSTRACT

The massive financial market failures that led to the Great Recession have prompted renewed calls for a financial transaction tax (FTT) to discourage excessive risk taking and recoup the costs of the crisis. A well-designed FTT could raise up to about 0.4 percent of GDP ($75 billion in 2017) in the United States and would be quite progressive. We discuss design options and the effects of an FTT on various aspects of financial sector behavior and its ambiguous effects on economic efficiency.

The massive financial market failures that led to the Great Recession have prompted renewed calls for a financial transaction tax (FTT) to discourage excessive risk taking and recoup the costs of the crisis. FTT advocates include Bill Gates Jr., George Soros, and Pope Benedict XVI.[1] Most recently, FTTs have been a topic for discussion among Democratic primary presidential candidates and a number of EU nations. The idea is not new, however. John Maynard Keynes (2007) proposed an FTT in 1936 as a way to discourage the kind of speculation that fueled the stock market bubble that led to the Great Depression. More recently, leading economists James Tobin, Joseph Stiglitz, and Larry Summers have advocated similar taxes.

This tax is imposed on a financial transaction, usually the purchase or sale of securities (e.g., stocks, bonds, derivatives). Such taxes have a long history. A stamp duty was enacted in 1694 in England and remains in effect today in the United Kingdom as a 0.50 percent tax on the transfer of securities issued by UK companies. The United States' history with the FTT dates back to a federal stock transaction tax from 1914 to 1965 and a New York state tax from 1905 to 1981. A miniscule securities transfer tax currently funds the Securities and Exchange Commission. FTTs have long been popular in less developed countries because they can raise significant revenue from a small number of relatively sophisticated financial entities.

Many G20 countries tax some financial transactions, the most common form being a tax on secondary market stock sales at a rate of 0.10 to 0.50 percent. China, France, India, Indonesia, Italy, South Africa, South Korea, and the United Kingdom impose such taxes. But several developed nations have repealed FTTs in recent decades, presumably because of competitive pressures coming from globalization and technological changes that have made shifting trading to other markets less costly.[2]

Under an FTT, the tax may be assessed on the buyer, the seller, or both, and is typically a percentage of the market value of the security that is traded (an ad valorem tax). Rates typically range from 0.1 to 0.5 percent. In the case of derivative transactions—such as options to buy or sell securities in the future—the tax may be levied on the value of the referenced securities or on the market value of the derivative itself.[3]

Our analysis focuses on securities transaction taxes, but other variants exist, including currency transaction taxes, which apply to transactions involving foreign exchange and related derivatives, and bank transaction taxes or bank debit taxes, which apply to deposits and withdrawals from bank accounts and are commonly found in Latin American and Asian countries.

Proponents advocate for FTTs on several grounds. The tax could raise substantial revenue at low rates because the base—the value of financial transactions—is enormous. An FTT would

curb speculative short-term and high-frequency trading, which are activities of little or no social value. Advocates argue that an FTT would reduce asset price volatility and bubbles. It would encourage patient capital and longer-term investment. The tax could help recoup the costs of the financial-sector bailout as well as the costs the financial crisis imposed on the rest of the country. Some FTT advocates call it a "Robin Hood Tax" because it would primarily fall on the rich and its revenues could be used to benefit the poor.

Critics counter that an FTT is an "answer in search of a question" (Cochrane 2013, 44). They claim it would be inefficient and poorly targeted. An FTT would boost revenue, but it would also spur unproductive tax avoidance. Because the tax falls on intermediate inputs in the production process, it would cascade, taxing some assets and sectors more than others, distorting economic activity. Although an FTT would curb speculative trading, it would also curb productive trading, which would reduce market liquidity, raise the cost of capital, and discourage investment. It could also slow the adjustment of prices to new information. Under plausible circumstances, an FTT might actually increase asset price volatility. An FTT does not directly address the market failures that precipitated the Great Recession. Opponents claim that even the progressivity of an FTT is overstated, as much of the tax could fall on the retirement savings of middle-class workers and retirees.

The effectiveness of an FTT at addressing its goals without undue economic costs depends critically on good design. Sweden's tax raised relatively little revenue and did lasting damage to the Swedish stock market because it was poorly designed. FTTs in other countries such as England, however, have proven to be remarkably durable.

DESIGN ISSUES

Here are some of the key issues policymakers must address in designing an FTT.

1. **What triggers the tax: the residence of the issuer of the security; the residence of the buyer, seller, or intermediary; or the location of the trade?** Too narrow of a tax base like that of the former Swedish FTT, which was imposed only on transactions administered through registered Swedish brokerage houses, can mean the tax is easily avoidable.

2. **Which securities does the tax cover?** Most current and proposed taxes apply to stocks and some include bonds. Defining the tax base for derivatives is difficult, but exempting them, as in the United Kingdom, creates an incentive to substitute derivatives for other securities to avoid the tax.

3. **Which financial markets are subject to the tax: does it only apply exchange-based transactions or also to over-the-counter transactions?** Taxing over-the-counter

transactions not made on exchanges would be difficult, but most proposals include these transactions to deter tax avoidance.

4. **Are market makers or debt exempt?** Market makers are intermediaries who provide market liquidity. Taxing them could reduce liquidity and increase price volatility, but exempting them could create a significant loophole, so most recent proposals tax them. A tax on government debt transactions raises government borrowing costs, but failure to tax public debt could lead to a shift out of private-sector securities.

5. **Is the tax rate ad valorem or a flat fee per share traded?** Most existing taxes and proposals employ an ad valorem rate. A flat fee might be preferable if the main goal is to discourage high-frequency trading (Matheson 2012), but it would implicitly favor assets with relatively high face values because the tax would be a smaller fraction of the value.

6. **Is the tax coordinated internationally?** Because capital is highly mobile across national borders, international coordination could significantly reduce the scope for avoidance.

PROPOSED FINANCIAL TRANSACTION TAXES

Ten EU countries have agreed in principle to enact a coordinated FTT starting January 2017, although some significant differences may delay implementation (table 1).[4] Many world financial centers thrive despite the presence of FTTs, and they are a matter of current debate in the United States.

Senator Tom Harkin (D-IA) and Congressman Peter DeFazio's (D-OR) proposal, Wall Street Trading and Speculators Tax Act, would impose a 0.03 percent tax on all trades, including stocks, bonds, other debt obligations, and derivatives based on these assets.[5] For a derivative transaction, the base would be any payment made under the terms of the contract. The tax would be imposed on trading within the United States and to any transaction outside the country if any party to the transaction is a US business or individual. The Congressional Joint Committee on Taxation (JCT) estimates the proposal would raise $352 billion (about 0.2 percent of gross domestic product [GDP]) from 2013 to 2021.

Congressman Keith Ellison (D-MN) and Senator Bernie Sanders (I-VT) have introduced companion bills in the House and Senate that would impose much higher tax rates than Harkin and DeFazio's, taxing stock sales at 0.50 percent, bond sales at 0.10 percent, and payments with respect to derivatives at 0.005 percent.[6] Sanders (2015) would earmark the revenue to finance free college tuition and claims the tax has the potential to raise $300 billion in revenue annually (about 1.7 percent of GDP in 2015), or approximately nine times as much as the JCT estimates of the Harkin-DeFazio proposal. Sanders's fellow Democratic primary presidential candidates,

Hillary Clinton and Martin O'Malley, have called for more limited transaction taxes targeted at high-frequency trading.

Major Features of FTT Proposals

	European Union	Harkin-DeFazio	Ellison-Sanders
Tax determined by			
Residence of issuer	Yes	No	No
Residence of buyer/seller	Yes	Yes	Yes
Location of transaction	No	Yes	Yes
Tax rate[a]			
Equities	0.2 percent	0.03 percent	0.5 percent
Debt	0.2 percent	0.03 percent	0.1 percent
Currency	N/A	N/A	N/A
Derivatives	0.02 percent	0.03 percent	0.005
Value	Notional value	Payments	Payments
Tax on original issuance?	No	No	No
Market makers included?	Yes	Yes	Yes
Government debt included?	Yes	Yes	Yes
International coordination?	Yes	No	No

Sources: European Commission (2011); Wall Street Trading and Speculators Tax Act, H.R. 880, 113th Cong. (2013); S. 410, 113th Cong. (2013); Inclusive Prosperity Act of 2015, H.R. 1464, 114th Cong. (2015); S. 1371, 114th Cong. (2015).
Note: N/A = not applicable.
(a) The rates listed reflect the total combined rate on both buyers and sellers.

EFFECTS OF A FINANCIAL TRANSACTION TAX

Trade Volume and Speculation

An FTT reduces trading volumes by raising transaction costs. This reduction might be good or bad depending on several factors. What proportion of the reduced trading is unproductive, and what are the economic costs of discouraging productive financial activity? Is the financial sector inefficiently large, as many analysts argue (Cœuré 2014; Zingales 2015)? The financial services sector accounted for 7.2 percent of US GDP in 2014, up from just 2.5 percent of GDP in 1947 (Bureau of Economic Analysis 2015; Philippon 2008). While a financial activity tax (FAT) might be a better instrument to shrink the financial sector in theory, an FTT may be a second-best option if a FAT is not feasible.

Liquidity

In a liquid market, sellers can dispose of large holdings without driving down prices much, and buyers can acquire significant amounts of an asset without driving up the price very much. Liquidity can also be assessed by the bid–ask spread, the difference between the highest price buyers are willing to pay and the lowest price sellers are willing to accept. Liquid markets have low bid–ask spreads and are typically also high volume. An FTT, paid on the asset sale, would drive a wedge between bids and asks and make markets less liquid. An FTT may also increase the bid–ask spread if it substantially cuts market volume.

Price Discovery

Price discovery is the process by which asset values are determined via trading. Efficient price discovery means that prices tend to reflect all available information almost all the time. FTTs have the potential to slow price discovery in financial markets, primarily by reducing liquidity. The FTT makes it unprofitable for market participants to act on small price disequilibria, so asset prices may reflect old or outdated information (Habermeier and Kirilenko 2001; Matheson 2012).

Asset Price Volatility

Top economists have supported an FTT because they thought it would reduce unproductive trading and thus price volatility. However, the theoretical sign of the relationship between FTTs and volatility is unclear, because FTTs can delay market participants' reactions to new information, as discussed above. This delay means prices may swing substantially before it becomes worthwhile for traders to react and realign prices with fundamentals. In fact, several studies have found that higher transactions costs and FTTs actually raise volatility. There is evidence, however, that transaction taxes reduce volatility in markets with a substantial amount of high-frequency trading (Matheson 2014).

FTTs could raise or reduce volatility depending on how they affect noise traders versus fundamental traders. Having more fundamental traders, who drive an asset's price toward its inherent value, will reduce volatility; having more noise traders, who introduce random variation, will raise volatility. If an FTT primarily reduces speculative behavior and hence removes disproportionately more noise traders than fundamental traders, then it could reduce volatility.

Asset Prices and Cost of Capital

An FTT reduces asset prices, with the impact being the greatest for assets with high turnover rates. For such assets, even a small tax could significantly reduce value. An FTT would raise the cost of capital, with the effects again varying dramatically by holding period and tax rate and being the largest for high-turnover assets (Matheson 2012).

Cascading and Intersectoral Distortions

The FTT is a tax on an intermediate input in the production process. As a result, it will cascade: the more often an asset is traded, the higher the effective tax rate. Other alternatives like a FAT, which only taxes the value added, could reduce the level of cascading compared with an FTT, but would require a higher rate to raise comparable revenues (Matheson 2012).

An FTT could encourage investors to take a longer-term perspective. In cases where investors are overly swayed by rumors and extraneous information or take a short-term perspective to improve their balance sheets, discouraging such trades might make markets work better. However, the capital gains tax already discourages short-term trading, and an FTT would compound the "lock-in effect," whereby investors are dissuaded from making otherwise welfare-improving trades.

By adding to transaction costs, an FTT could also reduce excess trading that is not in clients' interests. Money managers who are compensated for each trade may gain financially by trading more than their clients would prefer if they were well informed. Though pension funds might appear to be quite vulnerable to reduced returns because of an FTT since they turn over a great deal, the tax might discourage inefficient and unproductive trading behavior by fund managers and indirectly benefit fund participants.

Administrative and Compliance Costs

Administrative costs of existing FTTs tend to be relatively small. Still, compliance costs may not be negligible because of the sheer volume of trades (about 1.6 billion trades on the New York Stock Exchange in 2014). Administrative costs will depend on the design of the tax. A tax that includes over-the-counter transactions and derivatives would cost more to administer, but it would be likely to induce less avoidance and evasion.

ESTIMATES OF THE REVENUE AND DISTRIBUTIONAL EFFECTS OF A US FINANCIAL TRANSACTION TAX

Based on new revenue and distributional estimates for hypothetical US FTTs using the Tax Policy Center microsimulation model,[7] we find that an FTT could raise a maximum of about 0.4 percent of GDP ($75 billion in 2017) currently in the United States, allowing for reasonable behavioral responses in trading, maximum revenue would occur if the base rate were about 0.34 percent.[8] We also find the tax would be progressive.

The revenue potential of an FTT stems from the enormous volume of financial transactions, with face value many times GDP. The actual relation between a given tax rate and the revenue generated, however, would depend on design features discussed above. A broad-based tax will raise more revenue than a narrow one. Coordination among countries can reduce

the scope for tax avoidance and thus boost revenue in each country. Revenues from FTTs vary widely across countries and are procyclical, meaning they rise more when the economy is booming and less when the economy falters.

To illustrate the potential range of revenue effects of an FTT, we consider alternative bases and rates for the tax in our estimates as well as alternative behavioral responses by traders. Base 1 covers equities (including equity derivatives) and option premiums; the broader base 2 also includes bonds (including interest rate derivatives) and foreign exchange (spot and derivatives). Our broader FTT base is very similar to the Harkin-DeFazio and Ellison-Sanders FTT base, except these both exempt short-term debt. Trades by market makers and over-the-counter trades are included in both bases. Futures and swaps in both bases are valued at the underlying notional value of the securities. The first base is estimated to cover $49 trillion of transactions in 2017, whereas the second base is more than thirteen times as broad, covering an estimated $659 trillion of transactions in 2017. We examine three possible rate structures: base rates of 0.01, 0.1, and 0.5 percent on stock trades and option premiums (for both tax bases) and bond trades (for the second tax base);[9] and rates on futures and swaps (for both tax bases) and foreign exchange (for the second tax base) that are one-tenth of the base rates.

TABLE 2
10-Year Revenue from a US FTT with Alternative Bases and Rates, Fiscal Years 2017-26
Billions of dollars

Rate	Base 1: Equities and option premiums	Base 2: Base 1 + bonds and foreign exchange
0.01%	37.8	204.8
0.1%	207.7	704.9
0.5%	305.4	805.6
Addendum		
Revenue maximizing		
Rate	0.48%	0.34%
Revenue	316.4	822.7

Sources: Urban-Brookings Tax Policy Center
Note: FTT assumed to take effect January 1, 2017.

Applied to the narrower base, raising the tax rate by a factor of 10 from 0.01 to 0.1 percent would increase the revenue yield from $38 billion to $208 billion, or 0.09 percent of GDP (table 2). This less-than-proportionate increase in revenue arises because trading falls as the rate increases. The reduction in trading as tax rates rise reflects our assumptions that trading is very responsive to the tax rate and that transactions costs will continue to decline.[10]

Whether the FTT really is a Robin Hood Tax, as its proponents claim, depends on who would ultimately bear the burden of the tax. We assume that investors bear most of the burden of the tax, with a small portion falling on workers because reduced investment lowers

productivity slightly. Under those assumptions, about 75 percent of the burden falls on taxpayers in the highest-income quintile and 40 percent falls on the top 1 percent. The tax represents a negligible share of after-tax income for most households (0.2 percent or less), but 0.8 percent of after-tax income among the top 1 percent (figure 1).

FIGURE 1
FTT Burden as Percentage of After-Tax Income, 2017
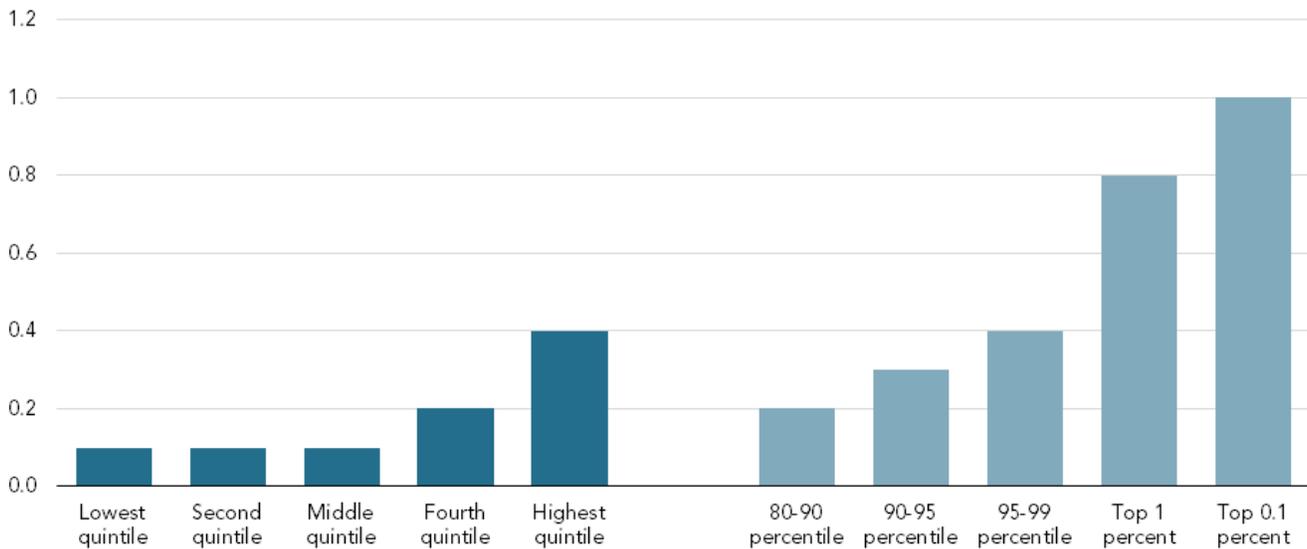
Source: Urban-Brookings Tax Policy Center Microsimulation Model.

CONCLUSION

FTTs attract interest in part because the base is so large that even a tiny tax rate would raise significant revenue. When combined with the potential to reduce the negative effects of speculation and rent seeking—including both the wasted resources invested in the activity and the potentially negative macroeconomic spillovers—and the potential to have the financial sector pay for some of the benefits it has received and the costs it has imposed on the economy, the case for an FTT is very tempting. But the key question is whether an FTT is the best option relative to other potential taxes in terms of economic costs and benefits, fairness, and costs of administration and compliance.

An FTT at the rates being proposed and adopted elsewhere would discourage all trading, not just speculation and rent seeking. It appears as likely to increase market volatility as to curb it. It would create new distortions among asset classes and across industries. As a tax on gross rather than net activity, and as an input tax that is not creditable and thus cascades, the FTT clearly can most optimistically be considered a second-best solution. Over the long term, it appears poorly targeted at the kinds of financial-sector excesses that led to the Great Recession.

Nevertheless, comparing an FTT (or any real-world tax) against an ideal income or consumption tax would be inappropriate. Most feasible taxes are distortionary. It might well be that the marginal cost of raising revenue via a well-designed FTT is lower than via increases in individual or corporate income taxes.

[1] Steven Greenhouse, and Graham Bowley, "Tiny Tax on Financial Trades Gains Advocates," *New York Times*, December 6, 2011.

[2] Germany, Italy, Japan, the Netherlands, Portugal, and Sweden have repealed securities transaction taxes in the last 25 years (Matheson 2012; Hillman and Ashford 2012). Since their repeal of previous FTTs, both Italy and Portugal have instituted new ones.

[3] Derivatives are financial instruments that derive their value by reference to another asset or index.

[4] The ten parties are Austria, Belgium, France, Germany, Greece, Italy, Portugal, Slovakia, Slovenia, and Spain.

[5] Wall Street Trading and Speculators Tax Act, H.R. 880, 113th Cong. (2013); S. 410, 113th Cong. (2013).

[6] Inclusive Prosperity Act of 2015, H.R.1464, 114th Cong. (2015); S.1371, 114th Cong. (2015).

[7] "Brief Description of the Tax Model," Urban-Brookings Tax Policy Center, accessed December 21, 2015, http://taxpolicycenter.org/taxtopics/Brief-Description-of-the-Model-2013.cfm.

[8] Burman et al. (forthcoming) discusses the estimates in detail, including the sensitivity of results to different assumptions (Section VI) and explains our revenue estimating and distributional methodology (Appendix A).

[9] Assuming the average years to maturity of traded bonds is two years, the rate set for a one-year bond is one-half the base rate, and rates for longer-term bonds would be taxed at a multiple of that rate based on the number of years to maturity.

[10] As noted, with declining transaction costs over time, a constant FTT represents a rising share of total transaction costs over time, with commensurately larger effects on trading volume. For example, with a 0.01 percent tax rate, volume declines about 7 percent in the 1st year (2017) but 9 percent in the 10th year (2026).

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