



SIFMA Insights

Ramifications of an FTT

A Financial Transaction Tax Will Harm US Capital Markets & Individual Investors

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Key Takeaways

In this report, we use case studies from across the globe to assess the potential ramifications of FTTs. FTTs fail to reach objectives, as they:

- Increase costs and lower returns for individual investors;
- Typically, and often significantly, miss revenue generation projections, as the taxable base declines with volume migration;
- Not only do they not curb volatility but instead increase it as trading volumes decline, harming capital markets;
- Increase financing costs for municipalities, the federal government and corporations;
- Increase prices for consumer goods; and
- Generally damage economic growth by decreasing revenues and jobs in the U.S. as volumes migrate.



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Ramifications of an FTT

Executive Summary

The original concept behind modern financial transaction taxes (FTT) was the Tobin Tax. This proposed, but never enacted, currency transaction tax was meant to eliminate exchange rate differentials among countries across the globe.

The original Tobin proposal was meant to maintain the benefits capital markets bring to investors and economies. It was not meant to impact long term investments, nor was it meant to be a revenue generator for governments with ballooning deficits. Tobin himself disavowed this tax as a means of revenue raising for social purposes and eventually backed off his own proposal.

Despite the fact that the proposed benefits of a Tobin Tax have always been, and remain today, controversial, many countries have tried versions of this tax, now commonly known as FTTs. The primary driver behind FTTs is to raise revenue and curb volatility. **The results have failed to meet these objectives. FTTs have been shown to harm individual investors, and the harm generally outweighs any benefits.**

FTTs tend to miss revenue generation projections, as they do not account for the ability to shift volumes to other trading venues/jurisdictions. The inevitable reduction in volumes decreases the taxable base, which in turn diminishes the amount of revenue collected. Further, empirical evidence does not show that FTTs significantly impact volatility at all, let alone decrease it. More often than not, the opposite effect occurs. The migration of volumes decreases liquidity, leading to higher volatility.

Therefore, we ask:

- Why increase costs and lower returns for individual investors?
- Why increase funding costs for municipalities and the federal government?
- Why increase prices of consumer goods?
- Why risk the competitive positioning of U.S. capital markets and therefore threaten U.S. economic growth?
- Why risk these harms when FTT outcomes across the globe have proven to sway far from expectations?

As shown in this report, FTTs fail to reach objectives on the following accounts: (a) they increase costs and lower returns for individual investors; (b) they typically, and often significantly, miss revenue generation projections, as the taxable base declines with volumes; (c) not only do they not curb volatility but instead increase it as trading volumes decline, harming capital markets; (d) they increase financing costs for municipalities, the federal government and corporations; (e) they increase prices for consumer goods; and (f) they generally damage economic growth by decreasing revenues and jobs in the U.S. as volumes migrate.

In this report, we use case studies from across the globe to assess the potential ramifications of FTTs.

Fact: FTTs Increase Costs for Individual Investors

Taxes and other fees are passed onto the end user, individual investors, in the total cost of the trade. In general, the total cost of a trade can be broken out into explicit and implicit costs:

- **Explicit** costs can include: commissions, market access fees, market making¹ fees, clearing and settlement costs, taxes (includes SEC Section 31 transaction fee²)
- **Implicit** costs can include: bid-ask spreads, opportunity cost, price impact of a trade

The FTT will be no different – it will be added to the cost of the trade as an explicit cost and passed down the chain to the individual investor.

This is what happens with the SEC’s Section 31 transaction fee, which is often cited as an example showing that U.S. equities markets have a transaction fee and yet remain top in the world. We dispute the notion that U.S. markets can withstand a new FTT, given the Section 31 fee is:

1. Very small at 0.00207% in 2019 (0.0013% in 2018), versus implemented or proposed FTTs of 0.1% and higher
2. Already added on as a tax to investors – meaning, with an FTT, the government will have added two transaction taxes on each trade – significantly increasing trade costs for individual investors

The addition of two transaction fees added to the calculation of trade costs will be a significant tax on the individual investor, as well as firms managing retirement accounts for individuals (the costs to manage this money will be passed along in fees as well). While various academic studies found different estimates of the impact (based on different methodologies, portfolio constructions, investment strategies, etc.), the end result is the same. It is a real impact to the individual investor who ultimately pays this tax.

Additionally, FTTs have been shown to decrease liquidity, forcing bid-ask spreads to widen. The increase in this implicit cost also increases the total cost of a trade. **Now the individual investor is hit two ways – increased explicit and implicit costs.**

¹ A market maker is a firm that stands ready to buy and sell a security on a regular and continuous basis, as they are often obligated to make two sided quotes in the market at all times (depending upon which market)
² Section 31 of the Securities Exchange Act of 1934 says self-regulatory organizations (FINRA, national securities exchanges) must pay transaction fees to the SEC based on the volume of securities sold on their markets to recover costs incurred by the SEC for supervising and regulating securities markets and professionals. 2018 rate 0.0013%; the equation is based in part on dollar amount of covered sales which was “substantially” higher in 2018

And these increased costs will flow through to not just single stocks, but also mutual funds and ETFs (both of which are predominantly equity based), as well as any other financial product to which the FTT applies. FTTs have a significant impact on passive investments, as index-based products have higher turnovers given redemptions and portfolio rebalances. When a fund's portfolio composition moves outside of its target weightings (MFs and ETFs match weightings of stocks, sectors, etc. to the index they track), the manager must rebalance by buying/selling the underlying stocks. Since the tax is based on turnover, fund redemptions, portfolio rebalances and the ETF creation/redemption mechanism will be taxed.

Additionally, retirement accounts are often invested in target date funds which have an embedded dynamic asset allocation. If the fund manager rebalances or shifts the asset mix, the tax would be imposed. The use of target date funds is growing; for example, they are used in the Federal Thrift Savings Plan. These costs will be heavily born by pension, asset and fund managers managing individual investor money, i.e. passed on to the individual investor. This is a tax on all investors, not just the wealthy³.

Given the increased trade costs, FTTs decrease returns on investment portfolios and retirement accounts. An International Monetary Fund (IMF) study compiled various academic analyses on the negative impact on returns from FTTs, showing that:

- A 1% tax on equity trades in Sweden resulted in a market decline of 5.3% in the 30 days leading up to the introduction of the tax
- On average across 14 separate transaction tax changes in AsiaPac markets, a 23% rise in transaction costs causes an immediate 1% decline in daily market returns

Vanguard Case Study: Negative Impacts to Individual Investors from Even a “Small” 0.1% FTT

Vanguard, one of the largest asset managers which manages individual investor money, performed an analysis on the negative impact to individual investors from what is being called a small FTT of 0.1%. The results include:

- Individual investors would experience a loss of \$36,000, more than 3 ½ years of annual savings; if the FTT is levied on purchases and sales, the loss would be >\$56,000
- More than 100 million Americans invest in mutual funds and ETFs; an FTT would have cost >\$20 billion in 2019, or reduce mutual fund investors' wealth by \$320 billion over 10 years

Source: Vanguard

Note: Annual savings of \$10,000 at the beginning of each year for 40 years, growing at a pre-tax rate of 6% for equities and 2% for bonds in a balanced portfolio of 60% actively managed stocks and 40% bonds

³ Please see SIFMA Insights Q: Who Owns Stocks in America? A: Individual [Investors](#)

Fact: Actual Revenue Generated Comes In Below Expectations

FTTs tend to miss revenue generation projections, as estimates are calculated in a steady state environment. The projections misunderstand the natural behaviors and structure of financial markets and its participants. Projections do not account for market participants ability to shift volumes to other products or markets/trading venues. This reduction in trading volumes leads to a decrease in the taxable base, which decreases actual revenue collected.

To assess this, we analyzed revenue projections from the U.S. Congressional Budget Office’s (CBO) 0.1% FTT example. The first section in the table below shows the CBO’s projections, indicating the percent this revenue represents of U.S. GDP. The next section in the table applies the haircuts discussed in the case studies in this report, where other countries have actually missed revenue projections or reduced expectations after further investigating market factors. We take the haircut from the country example (the second column, labeled miss) and multiply that by the CBO original revenue projection to get an estimated new revenue projection. We then calculate this as a percent of GDP.

We note that the CBO projections are calculated in a static environment, i.e. volumes do not change significantly. Yet, volumes can easily migrate with the addition of an FTT. We, therefore, argue the CBO’s initial projections are overstated, as they do not account for the potentially decreasing taxable base. Let’s set aside that we argue the U.S. would experience a migration of volumes to other regions or venues, thereby forcing revenue collections to come in significantly lower than expected. Even taking the CBO projections at face value – and not accounting for any associated lost GDP – **the numbers do not seem to warrant the risk of harming U.S. capital markets and therefore individual investors.** We cite the following reasons:

- Original (overstated, in our view) CBO revenue projections only 0.1% to 0.5% of total GDP per annum
- Haircuts from other failed FTT experiments indicate substantial declines in original projections
- Haircutted CBO revenue projections show an even lower impact at 0.004% to 0.3% of total GDP per annum

CBO FTT Revenue Projections	FTT	2020	2021	2022	2023	2024	2025	2026	2027	2028	Avg.	Max	Min
FTT Revenue Projections (\$B)	0.1%	22.0	70.2	93.2	100.7	103.7	106.2	106.3	107.9	110.4	91.2	110.4	22.0
% 2018 US GDP	0.1%	0.3%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%			
Haircutted Projections	Miss												
FTT Revenue Projections (\$B)													
By Sweden Miss	-96.7%	0.7	2.3	3.1	3.4	3.5	3.5	3.5	3.6	3.7	3.0	3.7	0.7
By French Miss	-41.7%	12.8	41.0	54.4	58.7	60.5	62.0	62.0	62.9	64.4	53.2	64.4	12.8
By EU Projection Reduction	-93.9%	1.3	4.2	5.6	6.1	6.3	6.4	6.4	6.5	6.7	5.5	6.7	1.3
Projection - Haircut (\$B)													
By Sweden Miss	-96.7%	(21.3)	(67.9)	(90.1)	(97.3)	(100.2)	(102.7)	(102.8)	(104.3)	(106.7)	(88.1)	(21.3)	(106.7)
By French Miss	-41.7%	(9.2)	(29.3)	(38.8)	(42.0)	(43.2)	(44.3)	(44.3)	(45.0)	(46.0)	(38.0)	(9.2)	(46.0)
By EU Projection Reduction	-93.9%	(20.7)	(66.0)	(87.6)	(94.6)	(97.4)	(99.8)	(99.9)	(101.4)	(103.7)	(85.7)	(20.7)	(103.7)
% 2018 US GDP													
By Sweden Miss	-96.7%	0.004%	0.01%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.01%	0.02%	0.004%
By French Miss	-41.7%	0.1%	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.1%
By EU Projection Reduction	-93.9%	0.01%	0.02%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.01%

Source: U.S. Congressional Budget Office Options for Reducing the Deficit, case studies, SIFMA estimates

Note: 0.1% on stocks, bonds, debt obligations (value of security); 0.1% on derivatives (% of notional value). No carveout for market makers. Excludes initial issuance of securities, debt with maturity <=100 days & FX (FX derivatives taxed). For transactions in the U.S. or U.S. entity acting outside U.S.

In addition to our analysis above, we looked at an IMF assessment of various FTTs across the globe. The IMF calculated each country's FTT revenue as a percent of its GDP. We note that this analysis did not compare projected to actual revenues; it simply looked at collected revenues.

We highlight the following, which further show that **FTT revenue is not the panacea it is often touted to be:**

- The global average revenue as a percent of GDP was 0.41%, or 0.28% excluding the outlier, but there is a tradeoff between higher FTT revenue/GDP ratios and liquid, diversified, lower trading cost capital markets
- The countries which have higher revenue/GDP ratios have (a) significantly smaller equity markets, with higher costs to trade for investors and (b) less robust economies than the U.S.
 - Hong Kong has the highest revenue/GDP ratio at 1.17%, which has come down to 1.4% in more recent years – but U.S. equity markets are 8.0x Hong Kong (\$30.4T vs. \$3.8T), and market participants have pushed in recent years to repeal the stamp duty to spur post IPO liquidity for stocks and therefore increase IPOs, particularly for smaller companies
- Other G7 countries show low ratios of transaction tax revenue to GDP
 - The average for the U.K. was 0.25% – this has since come down to 0.1% in the more recent years, and market participants have argued to repeal the stamp duty to increase liquidity and therefore lower trade costs for investors
 - Germany & Japan repealed their taxes, which only brought in 0.06% and 0.11% of GDP respectively
 - France originally earned 0.02% of GDP – this has increased somewhat but is still negligible at 0.04%
 - U.S. equities markets 8.4x the U.K. and 3.8x all of the EU 27 countries combined, and U.S. markets have lower costs to trade as well

Transaction Tax Revenues as a Percent of GDP

Country	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Avg.	Max	Min
France	0.05	0.01	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01			0.02	0.05	0.01
Germany	0.06												0.06	0.06	0.06
Hong Kong	na	na	na	na	na	na	na	na	na	na	2.10	1.32	1.71	2.10	1.32
India							0.02	0.07	0.12	0.19	0.10	na	0.10	0.19	0.02
Italy	0.08	0.12											0.10	0.12	0.08
Japan	0.18	0.11											0.15	0.18	0.11
South Korea	0.12	0.18	0.62	0.37	0.45	0.32	0.26	0.41	0.43	0.58	na	na	0.37	0.62	0.12
South Africa	na	na	na	0.34	0.36	0.36	0.46	0.54	0.58	0.49	0.51	na	0.46	0.58	0.34
Switzerland	0.56	0.38	0.85	0.67	0.50	0.46	0.47	0.44	0.46	0.46	na	na	0.53	0.85	0.38
Taiwan	na	na	na	0.65	0.77	0.72	0.85	0.65	0.79	1.07	0.77	na	0.78	1.07	0.65
UK	0.12	0.17	0.45	0.27	0.23	0.22	0.22	0.27	0.28	0.29	0.22	na	0.25	0.45	0.12

Source: IMF (citing OECD, EU Parliament, UK Treasury, Indian Treasury, World Economic Outlook)

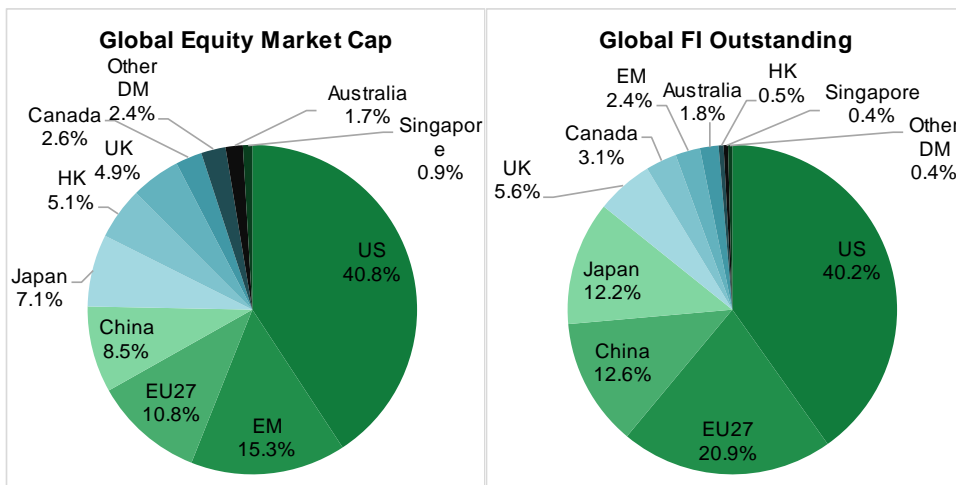
Note: STT = securities transaction tax

Fact: What's Bad for Capital Markets Is Bad for the Economy

Yes, Capital Markets Matter for Economic Development

Capital markets matter to a country's economic wellbeing, and in the U.S., they fund 65% of economic activity. Markets facilitate the transfer of funds from those who seek a return on their assets to those who need capital and credit to grow. Clients benefiting from healthy capital markets include not just investors but also corporations, municipalities and governments. Capital raised through equity and debt can be used to grow businesses, finance investments in new plant, equipment and technology and fund infrastructure projects. This creates jobs and flows money into the economy, and consumers and workers benefit from a stronger economy. Additionally, businesses and individuals can invest in securities to generate wealth.

U.S. capital markets are the largest in the world and continue to be among the deepest, most liquid and most efficient. U.S. equity markets are 40.8% of the \$75 trillion global equity market cap, or \$30 trillion; this is 3.8x the next largest market, the EU (excluding the U.K.). U.S. fixed income markets are 40.2% of the \$103 trillion securities outstanding across the globe, or \$41 trillion; this is 1.9x the next largest market, the EU (excluding the U.K.).



Source: World Federation of Exchanges, Bank for International Settlements, SIFMA estimates (as of FY18)
 Note: FI = fixed income; EM = emerging markets; HK = Hong Kong; DM = developed markets; equity market cap = listed domestic companies

Yes, FTTs Hinder Economic Development

In addition to harming capital market competitiveness, FTTs have real negative impacts on the economy and lead to lower economic growth. Newton's Third Law says, "For every action, there is an equal and opposite reaction". In practice of this law, the reaction of FTTs is to:

- **Decrease Capital Investment** – FTTs increase the costs to corporate, municipal and federal government issuers of new securities (primary markets). Even with a carveout for securities issuance, the negative impact on volumes and trade costs in secondary markets increases return requirements to invest in these securities⁴. This increases issuance costs – the IMF itself has warned that an FTT on government bond trading can increase the cost of borrowing for the sovereign. The higher financing costs force companies to put less capital investment back into the economy.
- **Increase Consumer Prices** – Many consumer companies use futures and other derivatives to hedge input costs (oil, cocoa, cotton, etc.) or commodities sold (corn, other foods). Hedging is a risk management tool used to protect the company from a sudden and significant increase in input prices, i.e. it guarantees a supply of the required commodity at a set price. As shown with securities transactions above, FTTs will be added on to the cost of the hedge. This will in turn be passed along to consumers in the form of higher prices, ranging from everyday to bigger ticket items (groceries, restaurant meals, gasoline, home heating oil, plane tickets, etc.).
- **Decrease Revenue, GDP Contribution and Jobs** – The finance and insurance industries contribute 7% to U.S. total GDP, or 8% of total private company GDP, and employ 6.4 million people. The securities industry alone employs 974 thousand people. As seen in other countries, FTTs decrease capital markets activity as volumes migrate. This can lead to not only a decrease in taxable revenue but also to a decline in economic activity, jobs and GDP contribution.

⁴ Please see SIFMA Insights Global Capital Markets and Financial Institutions [Primer](#)

Fact: FTTs Harm Capital Markets, Increasing Trade Costs

Yes, FTTs Increase Trade Costs

Like water, liquidity flows to its natural market. When regulators or legislators put up roadblocks, such as additional taxes or fees, volumes will flow to other trading venues or jurisdictions. This was shown in Sweden, which lost a substantial percent of volumes in multiple asset classes over a matter of days after announcing an FTT. Or, market participants can look to trade alternative financial products to replicate investment objectives and financial engineer similar returns as cash equities, such as derivatives or American Depositary Receipt (ADR⁵) substitution, as seen in the U.K., Italy and France. Both of these moves decrease volumes and therefore liquidity.

In today’s predominantly electronic and globally connected markets⁶, volumes can simply migrate to other jurisdictions without an FTT. This is all in the search for lower costs and greater liquidity. Looking at the U.S., market volumes need only take a short trip across the border to Canada, where the Toronto Stock Exchange would happily accept their business.

There is an elasticity of demand in markets – **increases in transaction costs will have a negative reaction on transactions, i.e. volumes will decrease**. Additionally, market makers will cease transacting and providing liquidity. New taxes – the so called high-frequency trading portion of existing FTTs, meant to (but not actually) curb volatility – would make this business unprofitable, as this firms are already operating on razor thin margins. These firms would be forced to exit the business, and their business is providing liquidity. Therefore, liquidity decreases further as market makers exit.

Essentially, an FTT is a tax on liquidity, and decreased liquidity leads to wider bid-ask spreads. Wider bid-ask spreads (an implicit trade cost) increase the costs to trade. Now investors have increases on both the explicit (FTT) and implicit (spreads) parts of the trade costs equation, a double whammy.



⁵ ADRs are securities representing shares of a non-U.S. company traded in U.S. markets, denominated (and pay any dividends) in USD. ADRs are a means for U.S. investors to access non U.S. stocks. They trade like regular U.S. stocks during U.S. trading hours via U.S. broker-dealers, as a liquid and low cost way to invest in foreign stocks.

⁶ Please see SIFMA Insights Electronic Trading Market Structure [Primer](#)

No, FTTs Do Not Decrease Volatility

Proponents of FTTs claim they curb volatility. However, the commonality among the majority of academic studies is that there is no empirical evidence showing FTTs significantly impact volatility at all, let alone decrease it. More often than not, if there is a statistically significant impact at all, case studies, such as that around Sweden (detailed later in this report), show volatility increasing once volumes decline. The opposite effect occurs. As is the nature of markets, lower liquidity often leads to increased volatility.

This impact will be much greater than the objective of penalizing electronic market participants, often referred to by legislators as high-frequency traders, who are blamed for volatility. However, firms using this strategy – high-frequency trading is actually a trading strategy, not a type of firm – maintain tight intraday inventories with lower end of day turnover, i.e. they end the day flat⁷. While the costs will be substantial to their business models and force many to exit the business, the penalizing effect will be greater for asset and fund managers running individual investor money.

Additionally, the overall effect will be to drive market makers out of the business. This will lead to lower liquidity and therefore higher volatility (as well as higher trade costs for investors, as discussed above).

⁷ Please see SIFMA Insights Electronic Trading Market Structure [Primer](#)

Different Types of FTTs Across the Globe

As noted above, the Tobin Tax has drifted from its original intent as a tax on FX transactions to stabilize a country's currency into transaction taxes meant to generate revenues for governments. The enacted and proposed FTTs across the globe come in several buckets, including:

- **Stamp Duty** – Tax levied on legal documents (historically required a physical stamp) for the transfer of ownership of shares and securities, often including uncertificated shares and other securities (electronic transactions)
- **FTT** – Tax on the buying and selling of financial instruments, can involve a select group of or all types of products (stocks, bonds, FX, derivatives, etc.)
- **Securities Transaction Tax (STT)** – A type of FTT which is similar to a turnover tax collected at the source of purchases and sales of securities
- **Transfer Tax** (excise tax) – Tax levied on the transfer of ownership (transfer of title) of securities from one entity to another

The following countries have enacted or proposed transaction taxes in the financial services industry:

Enacted				Proposed
Stamp Duty	FTT	STT	Transfer Tax	FTT
China	Brazil	India	Belgium	EU
Cyprus	Finland	South Africa	Philippines	Hungary
Egypt	France	South Korea	Poland	Portugal
Hong Kong	Italy	Taiwan		Spain
Ireland	Venezuela			
Malta				
Pakistan				
Singapore				
Switzerland				
Thailand				
Trinidad & Tobago				
UK				

Source: BNY Mellon Global Tax Services (as of 2018), SIFMA

Note: Introduce a local FTT if EU FTT not agreed upon: Hungary, Portugal, Spain. Switch to EU FTT once/if agreed upon: Belgium, France, Italy

EU Case Studies: To FTT or Not To FTT

EU-Wide FTT

The EU has had a long love affair with FTTs, yet it has not yet been able to commit. After failing to convince G20 leaders to create a global Tobin Tax, in June 2010, the EU announced plans to study whether the EU should implement its own FTT. In September 2011, the European Commission (EC) announced an FTT proposal to make financial institutions pay for the economic damage they caused in the financial crisis, as the financial sector received an estimated €1.6 trillion from EU member states, or roughly 13% of EU GDP.

At the time, 10 EU member states already had an FTT. The pan European proposal would have harmonized these tax rates and added new minimums for other countries. The goal was to prevent distortions in capital markets from one member state to another. The EC requires consensus among all member states to pass such legislation. However, the U.K., Sweden, Czech Republic and Bulgaria opposed the proposal. On the other side of the table, France, Germany, Spain, Belgium and Finland agreed with the proposal.

Without a consensus for a full pan EU FTT, in October 2012, the proponents suggested a 17 nation Euro Zone FTT, which would have been implemented in 2014 if adopted. In December 2012, a proposal supported by 11 EU member states⁸, representing 90%+ of Eurozone GDP, was approved in European Parliament; it was approved by the Council of the EU in January 2013 (Czech Republic, Luxembourg, Malta and the U.K. abstained from voting). A revised proposal was again sent to European Parliament and approved in July 2013. In September 2013, the legal department of the Council of the EU concluded the proposed pan EU FTT was incompatible with the EU treaty and illegally exceeded member states' jurisdiction for taxation.

By 2014, 10 out of the 11 countries (Slovenia no longer approved) still supported the FTT proposal. In 2015, Estonia withdrew its support, stating the proposed FTT would not generate significant revenue in comparison to the negative impacts on financial markets and investors. As of 2019, the latest FTT proposal includes a 0.2% tax on purchases of shares of EU companies (market cap €1 billion+), eliminating taxes on derivatives and other financial instruments and exempting IPOs, market making and intraday trading. The proposal was written by the German government, based on the existing French FTT.

⁸ France, Germany, Belgium, Austria, Slovenia, Portugal, Greece, Slovakia, Italy, Spain, Estonia

It is ironic that Germany is supporting the latest EU push for an FTT, as this country repealed its tax in the early 1990s after losing trading volumes of Bunds and other products to London. It is also interesting to follow the EU proposals over the years and watch the projected revenue figure decline significantly over time. Even European economists acknowledge that the revenue collected would be insignificant and offset by the lost GDP. Additionally, the increased trading costs would fall to end users, individual investors.



Standalone FTT – Germany

Notes: Germany had an FTT of 0.185% until it was abolished in 1991.

Motivation: In general, the FTT was seen as a revenue generator.

Results: The German government abolished the tax because financial transactions in many financial instruments migrated to London, including:

- 30% of trading in German government bonds (Bunds)
- 50% of trades in other Deutsche Mark denominated bonds
- 80-90% of trades in floating rate Deutsche Mark denominated bonds
- 1/3 of the trading in German public companies

Standalone FTT – France

Notes: France’s history with FTTs goes back to 1893, with the Impôt sur les opérations de bourse (IOB), a tax on transactions with French intermediaries, not just on stocks of French companies. After only pulling in €200-300 million per annum, the tax was repealed in 2008⁹ to make French capital markets more competitive. Despite the fact that the IOB did not increase liquidity or curb volatility of French stocks traded in Paris, in 2012, France introduced another FTT. As shown in the table below, the modern FTT began as a 0.2% tax (originally proposed at 0.1%, doubled before implementation) on French equity trades on large French companies and a 0.01% tax on what was deemed high-frequency trading (to curb volatility, according to legislators). The tax rate on equities was increased to 0.3% in 2017.

Country	Year	Traded	Tax Rate	Market Cap (€M)	# Companies	Product Notes
France	2012	On exchange*	0.2%	1,000+	109	Stocks; primary market exempt
		HFT	0.01%	n/a	1,000+	Transactions with cancel/completion rate >60%; narrow market maker exemption
		CDS	0.01%			EU Sovereign CDS not used for hedging; based on notional value of transaction Transactions with cancel/completion rate 2/3+
			<div style="border: 1px solid black; padding: 2px; display: inline-block;">Increased to 3% in 2017</div>			
			Initially announced at 0.1%, raised by the new government a few months later			
			Rate based on avg. bid/ask spread, 0.24% for high market cap equities at that time			
			Calculated on price of shares, paid 1st day on next month by entity initiating transaction			

*Traded on a registered exchange or trading venue, an MTF

Motivation: In general, the FTT was part of France’s fiscal devaluation, a sum of raising the VAT tax and adding a financial income tax. Coupled with cutting payroll taxes, the French government sought to make French companies more competitive by lowering labor costs. The FTT was seen as not only a revenue raiser, but also a means to curb what was perceived as increased market volatility caused by high-frequency trading (the FTT did exempt market makers).

Results: The French FTT revenue projections missed expectations, and France experienced negative impacts on its capital markets.

- Reduced trading volume
 - NYSE Euronext Paris volumes declined 16% on average within two months
 - French CAC 40 volumes declined 21% in the first 10 days and 16% in the first 40 days
- Market makers and liquidity providers exited (despite the narrow exemption for market makers)
 - Order book depth declined almost instantly after adoption, -19% for orders within 10 bps of midpoint

⁹ France never made greater than 0.05% of GDP

- Bid-ask spreads widened by 15% on average
- There was no significant effect on price volatility
- 1/3 of the trading in French public companies moved to London
- FTT revenues now ~€1 billion pa, around only 0.04% of GDP
 - France originally estimated revenue of €500 million, but achieved only €250 million in the first year
 - It had expected the addition of a high frequency tax to add an additional ~€1 billion pa, making the projection €1.5 billion revenue per annum
 - France raised €700 million in the first two years of implementation
 - Actuals achieved 58% of expectations on average, inclusive of the projected budget increase

Standalone FTT – Italy

Notes: In 2013, Italy re-introduced¹⁰ an FTT of 0.1%-0.2% on larger Italian company stock trades, as well as a 0.02% high-frequency trading tax (perceived to have increased market volatility).

Country	Year	Traded	Tax Rate	Market Cap (€M)	# Companies	Product Notes
Italy	2013	On exchange*	0.1%	500+	68	Stocks, ADRs, GDRs, related securities; equity derivatives
		OTC	0.2%	n/a	n/a	Multi (corporate bonds, equities, derivatives) -- government debt excluded
		HFT	0.02%	n/a	n/a	Transactions with cancel/completion rate >60%; narrow market maker exemption
		OTC	Flat	n/a	n/a	Derivatives; €0.025-€200 based on instrument, stepwise increases based on notional value Due by buying party, calculated on net transfer of ownership position at end of day Exemptions limited (ex: European pension funds)

*Traded on a registered exchange or trading venue, an MTF

Motivation: On one hand, Italy wanted to shift trading from dark to lit venues, hence the different tax rates. It also wanted to curb volatility, perceived to be driven by high-frequency trading. In reality, Italy needed money to pay for its debt crisis, post financial crisis bank issues and an overall failing economy.

Results: Italy experienced negative impacts on its capital markets.

- Volatility actually increased (the opposite reaction of legislators desired decrease)
- Bid-ask spreads increased ~2%, while this appears small it is highly statistically significant
- While volumes did not decrease significantly in the second stage of implementation of the FTT, academics believe this is because the volumes declined in the first stage when the high-frequency trading tax was added (the first stage does not have the same level of data availability as the second stage does); additionally, the Italian FTT left many trading loopholes (such as switching to trading derivatives)
- Italy originally estimated revenue of €1 billion per annum, but achieved only €200 million in the first year (actuals achieved 20% of expectations); investors switched from buying domestic equities to purchasing stocks on other trading venues and other financial products with lower taxes, for example some Italian traders moved to Malta which opposed the EU FTT proposal
- Note that Italy excluded a tax on trading of government bonds, heeding warnings from the IMF that an FTT on government bond trading can increase the cost of borrowing for the sovereign

¹⁰ According to an IMF study, Italy had a transaction tax in the 1990s. It generated no greater than 0.12% of GDP

Case Study: The UK – Stamp Duty Stamps Out Pension Investments

The U.K. has had a stamp duty in place since 1808. Differing from a transaction tax, a stamp duty is a tax on the registration of securities paid by the buyer of the security when transferring ownership. It is applied to U.K. stocks on a global basis (not location of trade). The tax rate was reduced from 2% to 1% in 1984 and then to 0.5% in 1986. While today it remains at 0.5%, it is estimated the effective rate is only 0.1%.

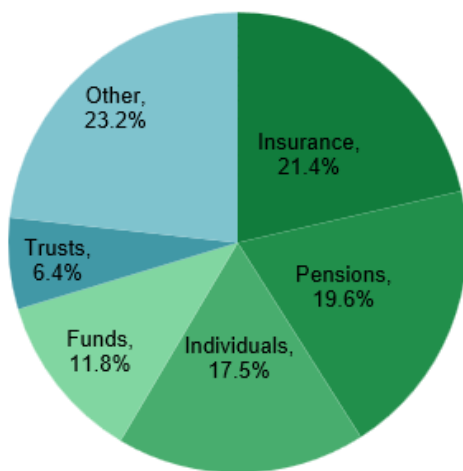
Increased Costs to Investors

Plain and simple, the stamp duty is passed on to the end user, the individual investor. The cost of a trade in the U.K. can be explained by:

- **Explicit** costs can include: commissions, market access fees, market making fees, clearing and settlement costs, taxes, £1 flat levy on Panel of Takeovers and Mergers (purchases >£10,000)
- **Implicit** costs can include: bid-ask spreads, opportunity cost, price impact of a trade
- **0.5% stamp duty**; it is estimated that the stamp duty represents ~50% trading costs (in 2007)

This was evidenced in the Oxera study of U.K. markets. Stamp duty payments were £2.9 billion in 2005, paid mostly by insurance firms, pension funds and individuals, totaling 58.5% of the total costs (or 21.4%, 19.6% and 17.5% individually by each of these three groups).

Payments by Investor Class



Source: Oxera report (2007)

Note: Insurance is similar to U.S., via annuities; funds = estimated based on size of total U.K. fund management industry minus the proportion for unit and investment trusts; other = private non-financial corporations, public sector and foreign investors

Case Study: The UK – Stamp Duty Stamps Out Pension Investments

Not only does the stamp duty increase the cost to the individual investor by increasing the cost to trade, it also lowers the size of retirement accounts, by 0.7% to 3.5% depending upon type of account and investment strategy. The stamp duty also lowers retirement account returns, from 3-14 bps per annum depending upon type of account and investment strategy.

Decrease in Account Size	Balanced Portfolio		Equity Portfolio	
	(£M)	%	(£M)	%
Pensions	7,540	2.4	10,389	3.1
Personal Accounts				
Passive	2,452	0.7	3,386	0.9
Mixed Strategy	8,970	2.8	12,415	3.5
Child Trust Funds	156	1.1	202	1.3
Decrease in Annual Return	bps		bps	
Occupational Pensions	7		11	
Stakeholder Pensions	11		14	
Personal Accounts				
Passive	3		4	
Mixed Strategy	11		14	
Child Trust Funds	11		14	

Source: Oxera report (2007)

Note: Occupational pension = defined contribution employer pension; stakeholder pension = defined contribution personal pension; personal accounts = large multi-employer occupational pension scheme; mixed strategy = active and passive; child trust = long-term tax-free savings account for children

Therefore, the stamp duty exhibits not only direct costs but also indirect costs to investors.

- **Direct Costs** – increased trading fees, extended time periods to save for retirement, decreased portfolio returns, etc.
- **Indirect Costs** – discouraging people to invest and save, contradicting government programs to encourage private savings (as was happening in the U.K. at the time of this study), etc.

Revenue Generation Not Matching Expectations

The stamp duty exempts many market participants and products (financial intermediaries, market making, hedging, futures, options, etc.). Additionally, traders found ways to replicate the returns of single stock ownership by trading other nontaxable products, such as contracts for difference (CFD¹¹). It is also estimated that around 25% of U.K. trading value takes place in ADRs, another product alternative to trading U.K. cash equities. As shifts to product alternatives and volume migration to other markets decreases the taxable base, it is estimated that the tax impacts only 30% of trading volumes. This is shown empirically by the fact that from 2000 to 2006 total U.K. trading volumes increased while the stamp duty tax revenue collected declined.

The stamp duty is not the revenue generating panacea many followers expected it to be. It is too easy in markets to migrate to non-cash equity products (to replicate returns) or to lower tax trading venues/jurisdictions, lowering the taxable base. As such, it is estimated the stamp duty generates only £3 billion per annum, or 0.1% of U.K. GDP (based on 2018 GDP).

Decreasing the Competitiveness of U.K. Cash Equity Markets

To begin with, there is no statistical evidence that the stamp duty lessened volatility. Additionally, the stamp duty depressed volumes and negatively impacted the competitiveness of markets. There are many factors determining whether to purchase a cash equity, inclusive of the stamp duty calculated into its trade costs, or another product (stock in foreign company, ADRs, derivatives). These factors include: type of market participant, sophisticated institutional investors can switch products or markets whereas individual investors must pay the increased costs for cash equities; investment product restrictions may not allow a product switch; desire to participate in governance of a company or not, which can only be achieved with a direct equity investment (whereas returns on equity can be replicated with other products); type of investment strategy, such as domestic versus foreign equities; etc.

Even with all of these other factors, it appears that it is the stamp duty which reduces the attractiveness of U.K. cash equities. A 2007 Oxera study looked at the impact of the stamp duty to a U.K. fund manager, measuring the impact on profitability of the tax on his U.K. stock portfolio versus the European stock fund. The stamp duty reduced the information ratio (= expected returns / risks) 10% for the U.K. stock portfolio versus 5% for the European portfolio.

Additionally, the stamp duty distorts signals stock prices typically send to investors about company profitability, as prices are affected by expectations of future volumes and stamp duty rates. This can decrease the attractiveness of investing in these stocks.

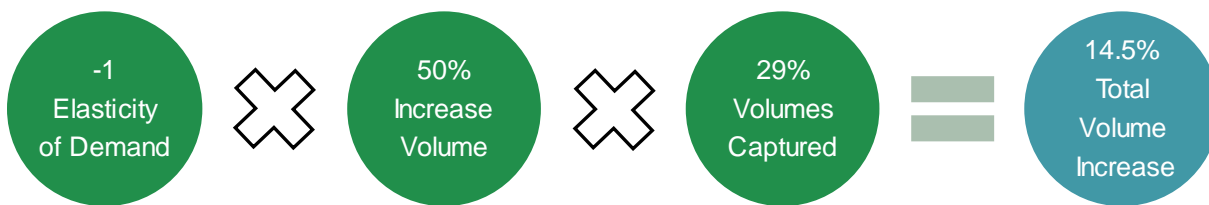
¹¹ CFD = a derivative contract between a buyer and seller where the seller will pay the buyer the difference between the current value of an asset and its value at contract time, or vice versa. It is similar to a futures contract in that it requires margining, but it does not expire. It is not allowed in the US

Abolishment of the Stamp Duty Would Increase Volumes

Proponents of transaction taxes note that the stamp duty has not had as dramatic of an impact on U.K. trading volumes as seen in other countries, such as Sweden. This is attributed to what was described above – the tax affects only around 30% of total volumes in a given year. Market participants argue that the impact on volumes and overall attractiveness of investing in U.K. markets would be worse without the carveouts for intermediaries, market makers, etc.

Regardless, analytical analyses show that removing the stamp duty would increase U.K. trading volumes. When studying U.K. equity markets in the early to mid-2000s, the Oxera study looked at price elasticity in markets. Price elasticity¹² shows how responsive customer demand is for a product based on changes in its price. It is equal to the percent change in quantity demanded divided by the percent change in price. The Oxera study (and other studies, such as the Umlauf study on Sweden) found elasticity of trading activity to transaction costs to be -1, meaning a decrease in transaction costs will result in an equal increase in volumes.

Therefore, it is estimated that a 50% decrease in the stamp duty should result in a 50% increase in trading volumes affected by the stamp duty. Since 29% of total trading volumes in 2005 were captured in the stamp duty scheme, this would result in a 14.5% increase in total trading activity in the U.K.



Source: Oxera report (2007)

¹² Perfectly elastic = any very small change in price leads to very large changes in quantity demanded; relatively elastic = small price change/large quantity demanded change, # > 1; unit elastic = any change in price results in equal changes in quantity demanded, # = 1; relatively inelastic = large price change/small changes in demand, # < 1; perfectly inelastic = quantity demanded not change with price change

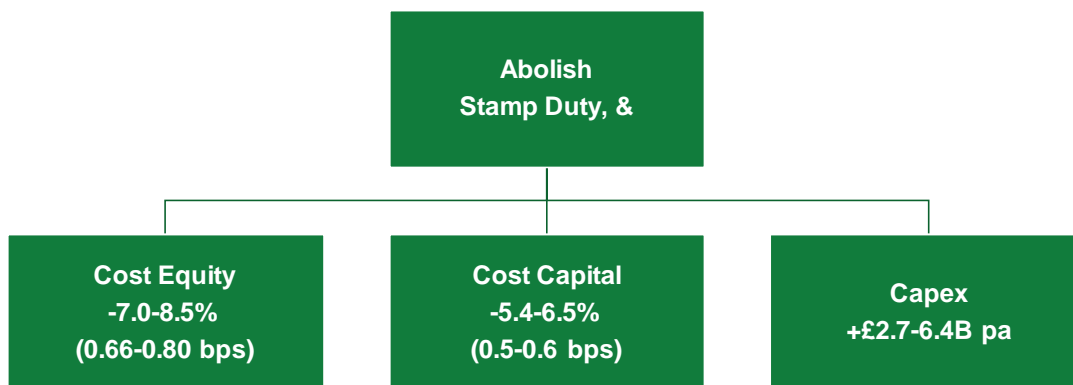
Detrimental to Companies and Therefore the Economy

The stamp duty has been shown to depress stock prices, particularly for shares which are frequently traded. This can lead to increased cost of capital for firms. The weighted average cost of capital (WACC), or the weighted average cost of a firm's debt and equity based on its capital structure, is used to measure the risk/return of an investment (from the view of an investor) or the required return for a capital project (from the view of the company). Companies base the decision to take on a new project on whether or not the projected return will come in above the cost of capital. The higher the cost of capital, the higher the return required for a capital investment. A higher cost of capital could have negative repercussions on investment, as the higher return hurdle could limit project options.

While differing across sectors, the Oxera study noted the following positive implications of abolishing the stamp duty for U.K. publicly listed companies:

- 7.0% to 8.5% decrease in cost of equity on average for all sectors
- Up to 11% and 12% decrease in cost of equity for retail and technology sectors
- 5.4% to 6.5% decrease in cost of capital on average for all sectors

Why does cost of capital matter? The abolishment of the stamp duty and corresponding decline in cost of capital for companies could enable an increase in fixed business investment of FTSE 350 companies by **£2.7-6.4 billion per annum. That is money flowing to the economy.** Not only would this increase the attractiveness of U.K. equity, it would also be a more efficient solution for injecting money into the U.K. economy. Companies and markets are better positioned to identify opportunities and areas of growth than governments attempting to use taxes to inject capital into the economy.

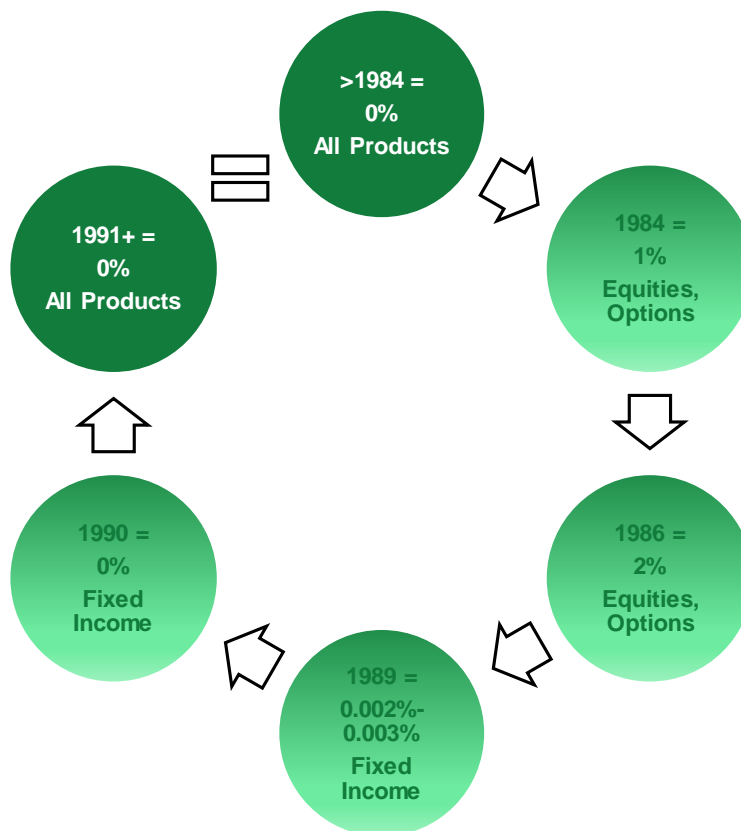


Source: Oxera report (2007)

Case Study: Sweden – The Great Migration

Prior to 1984, Sweden had no FTT. The first FTT (1% on equities and options) was passed in 1984 by a Parliament under pressure from the labor sector. An argument was made that finance professionals' salaries were "unjustifiably" high versus other sectors, and Sweden is a society prioritizing income equality. The FTT was not enacted to curb market volatility. It was authorized to raise money from financial services to redistribute to other sectors in the economy. The equities and options tax was raised to 2% in 1986, followed by the addition of fixed income taxes of 0.002% and 0.003% in 1989 and 1990.

The government originally hoped to raise SEK 1.5 billion per annum with the FTT. The results were disappointing, with SEK 50 million raised on average per annum, earning only 3% of the projected amount. It also caused a great migration of trading volumes across multiple products to London. By 1990, Sweden started walking back its FTT experiment. First, it removed the tax on fixed income securities. By the end of 1991, all FTTs were eliminated and trading volumes returned and began to grow again. However, the damage was done, and markets never fully recovered.



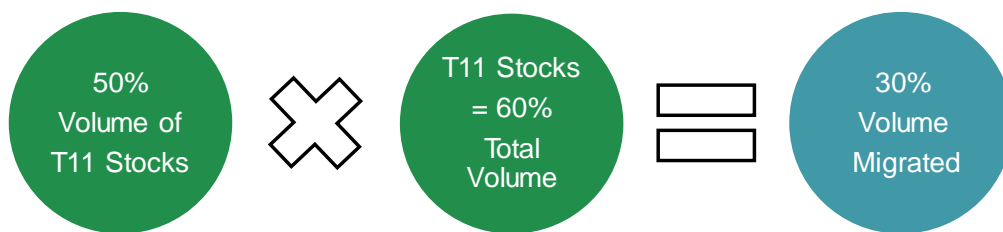
Source: Umlauf (1993) / Note: Equity = 0.5% each side of trade, or 1% round trip; fixed income = 0.002% maturity <=90 days, 0.003% maturity 5+ years

The Great (and Final) Migration of Volumes

In Sweden, there are four categories of voting rights and ownership restrictions: strong versus weak voting rights; restricted (to Swedes) versus unrestricted (open to foreigners) ownership. Otherwise, stock share classes of companies are identical, i.e. same legal claims on cash flows and dividends. Given this, a significant portion of trading volume seamlessly migrated to London (and this was in the 1980s, well before the level of adoption of electronic trading seen today).

According to the Umlauf study, around 30% of total equity trading volumes migrated to London on the announcement of the tax (50% volume of the top 11 traded stocks, representing 60% of total trading volumes). By 1990, 50% of total equity volumes had migrated, and Swedish markets never fully recovered.

Migration of Equity Volumes on Mid-1986 Announcement Day



Source: Umlauf (1993)

Equity index returns fell as well: -2.2% on the announcement of the 1% FTT in 1984, -0.8% on the announcement of the increase to a 2% FTT in 1986 (economists believe the declines are actually greater, as information leakage of the possibility of the tax/tax increase led market participants to react prior to the official announcement date, particularly for the rate increase in 1986).

The FTT did not reduce volatility either – it actually increased! The Umlauf study showed volatility of London traded Swedish stock share classes declined, while Stockholm traded share classes increased. Since cash flow claims are identical, it implies the FTT decreased liquidity and therefore increased volatility in Sweden. As any market structure analyst will tell you, decreased liquidity leads to higher volatility.

The negative FTT impacts were not just seen in the equities markets. Several other asset classes experienced volume declines, with additional FTT ramifications including:

- In the first week of the fixed income FTT, trading volume declined ~85%, significantly hampering trading of Swedish government debt – despite having very low tax rates of 0.002%-0.003%
- Futures volumes fell 98% in the first week
- The interest rate options markets essentially disappeared

Finally, as volumes declined, capital gains taxes fell as well, wiping out the FTT revenue gains.

AsiaPac Case Studies: Some Countries Repealed, Some Maintained

Various AsiaPac countries have attempted an FTT, while others are cutting the rate, debating removing the tax or have avoided it altogether. Of the major developed AsiaPac nations – Australia, Hong Kong, Japan, New Zealand and Singapore¹³, three do not have an FTT and the other two have a stamp duty, which was lowered in one country.

The countries avoiding, lowering or repealing the FTT indicate it negatively impacts capital markets and at the same time does not raise significant revenue. These countries all push to grow globally and chose not to impede foreign investment with additional taxes. Even countries with stamp duties have carveouts to prevent harm to its capital markets. For example, Singapore has significant exchange traded derivatives markets, via its national securities exchange the Singapore Exchange, and these products are excluded from the stamp duty.

Below we review FTT policies for the major developed AsiaPac nations and other select countries:

- **Australia** – Not Implemented – No FTT because it: (a) is a tax on investors; (b) has implementation difficulties, as financial transactions are mobile; and (c) conflicts with other regulations (ex: financial market stability).
- **China** – Implemented – Currently a 0.1% stamp duty on A-shares¹⁴, not other securities. An economic analysis indicated a 2.2% increase in the tax rate correlates with a 28% decline in volumes; a 1.7% decrease in the tax rate correlates to an 89% increase in volumes.
- **Hong Kong** – Implemented but Lowered – In 1993, Hong Kong imposed a stamp duty on buyers and sellers of 0.13%, exempting debt, ETFs, foreign securities and market makers. The rate has been lowered multiple times: in 1998 to 0.12%; in 2000 to 0.1125%; and in 2001 to 0.1%.
- **India** – Implemented but Lowered – In 2004, India implemented a STT of 0.075% on equities. The rate was increased in 2005 to 0.1% and again in 2006 to 0.125%. An economic study showed the last tax rate increase correlated to a 25% decrease in trading volumes (impact on volatility was insignificant). The rate was decreased in 2013 to 0.1%, where it stands currently.
- **Japan** – Repealed – In 1953, Japan institute an FTT, followed by a series of rate reductions: in 1989 from 0.55% to 0.3%; in 1996 to 0.21%; in 1999 to 0.1%. The tax was eliminated in 1999. Economic studies show the decrease in the rate improved market efficiencies by improving price discovery.

¹³ As identified by the MSCI world index market allocation, which determines the break between developed and emerging market status

¹⁴ China A-shares = CNY-denominated shares of China-based companies trading on the Shanghai Stock Exchange and Shenzhen Stock Exchange

- **New Zealand** – Not Implemented – No FTT because it: (a) does not work unless it is global, as it can negatively impact individual markets; and (b) is too easy in today’s electronic, global markets to reroute trades to other jurisdictions, meaning it does not raise the revenue promised.
- **Singapore** – Implemented with Carveouts – Currently, Singapore has a 0.2% stamp duty on stock ownership transfer documents. It applies to actual physical documents, not electronic transactions, and it does not apply to derivative transactions.
- **South Korea** – Implemented, Lowering and Potentially Repealing – South Korea plans to cut its STT for stocks listed on the KOSPI and KOSDAQ markets by 0.05% to 0.1% and 0.25% respectively. It will also cut the tax for the KONEX market by 0.2% to 0.1%. The South Korean Financial Services Commission Chairman Choi Jong-Ku noted the government needs to “seriously consider” repealing the STT as it could help boost domestic equity markets.

Case Study: US & NY – If It Failed Before, Why Will It Work Now?

Over the years, the U.S., New York State (NYS) and New York City (NYC) have tried various types of Tobin Tax or FTTs. Almost all of them were repealed, citing: (a) it was a tax on the individual investor; (b) actual revenue generation would not be as expected; or (c) it would hurt the competitiveness of U.S. capital markets.

U.S. equities markets do continue to have an FTT of sorts, the SEC's Section 31 transaction fee, which the agency uses to fund its operations. However, this tax is small at 0.00207%, and it is passed on to investors. Any new FTT would be added to the cost of trade, i.e. the bill for the individual investor, on top of this fee. In other words, if the U.S. implemented a 0.1% FTT, the individual investors' costs to trade would include 0.10207% of government imposed transactions taxes added in (in addition to standard fees/commissions).

Below we recap the trial and error of FTTs in the U.S. and NYS/NYC:

- For the U.S.
 - **1914 to 1965** – An FTT was first implemented in 1914 and was finally repealed in 1965; the rate fluctuated over time, last noted at 0.4% the value of a stock trade (capped at 8 cents per share). Upon repeal, Congress noted that the FTT was discriminatory in application as it taxed the end user (or purchaser, individual investors in this case).
 - **1963 to 1974** – The Interest Equalization Tax was implemented in 1963 to discourage purchase of foreign securities. It was a 15% tax rate on foreign stock trades and 2.75-15% tax rate on bond trades. The tax increased costs to individual investors and shifted bond trading volumes to London. In fact, it led to the creation of the Eurodollar market (USD denominated bonds sold by non-U.S. dealers/corporations), which grew from \$20 billion in 1964 to >\$3 trillion in 1988. The tax was repealed in 1974.
 - **Current** – The SEC's Section 31 transaction fee¹⁵ raises over \$1 billion per annum to fund its operations. The fee is small, 0.00207% for 2019 (up from 0.0013% in 2018, as the equation is based in part on the dollar amount of covered sales which was "substantially" higher in 2018 according to the SEC). It is passed on to the end user, the individual investor, in the calculation of the total cost of the trade.

¹⁵ Under Section 31 of the Securities Exchange Act of 1934, self-regulatory organizations (FINRA, all the national securities exchanges) must pay transaction fees to the SEC based on the volume of securities sold on their markets. These fees are designed to recover the costs incurred by the SEC for supervising and regulating the securities markets and securities professionals.

- For NYS/ NYC
 - **1932 to Current** – Dating back to 1932 (actually earlier, but empirical evidence for analysis was sparse prior to this time) NYS had a STT, changing the rate multiple times over the years. An economic analysis showed that increases in the STT correlated to a decline in volumes and increase in transaction costs via wider bid-ask spreads (there was no significant impact on volatility). The NYS STT was also a lesson in how firms could change trade characteristics or locate outside of the state jurisdiction to avoid the tax, meaning revenue generation would not be as expected. The stock transfer tax is technically still active, but it is a fully refundable credit.
 - **1966 to 1977** – After Congress repealed the U.S. FTT, New York City proposed a 50% increase in the city's existing stock transfer tax. After the New York Stock Exchange threatened to move its operations to New Jersey, thereby avoiding any taxes paid to NYC, NYC Mayor John Lindsay agreed to raise the rate by only 25%. In 1977, after exchanges again threatened to leave the city, NYC Mayor Abe Beame repealed the stock levy, calling it an obstacle to competitiveness of financial services in NYC.

Conclusion

As shown in the case studies and analysis in this report, FTTs fail to reach legislative objectives and have negative ramifications for individual investors, capital markets and the economy. The main negative impacts include:

- FTTs increase costs and lower returns for individual investors;
- FTTs typically, and often significantly, miss revenue generation projections, as the taxable base declines with volume migration;
- Not only do FTTs not curb volatility but instead increase it as trading volumes decline, harming capital markets;
- FTTs increase financing costs for municipalities, the federal government and corporations;
- FTTs increase prices for consumer goods; and
- FTTs generally damage economic growth by decreasing revenues and jobs in the U.S. as volumes migrate.

Appendix: An Analysis of the FTT Impact on ADRs

On noted above, one alternative to purchasing stocks with an FTT added to the trade costs is to buy American Depository Receipts (ADRs), where there is not an FTT. On the following pages we analyze behavior of French and Italian company ADRs versus NYSE listed stocks. We note that in assessing changes across the two groups we do not take into account any other factors driving changes in the number of shares or transactions, i.e. macro events, idiosyncratic local market factors, etc.

French ADR Performance vs. NYSE Listed Stocks

In France, the FTT was imposed on ADRs beginning December 1, 2012. The left side of each chart shows the number of shares traded in each month (December of each year). The French ADRs (left chart) exhibited much greater declines than NYSE listed shares (right chart), falling 59% from 2011 to 2013 versus -13%

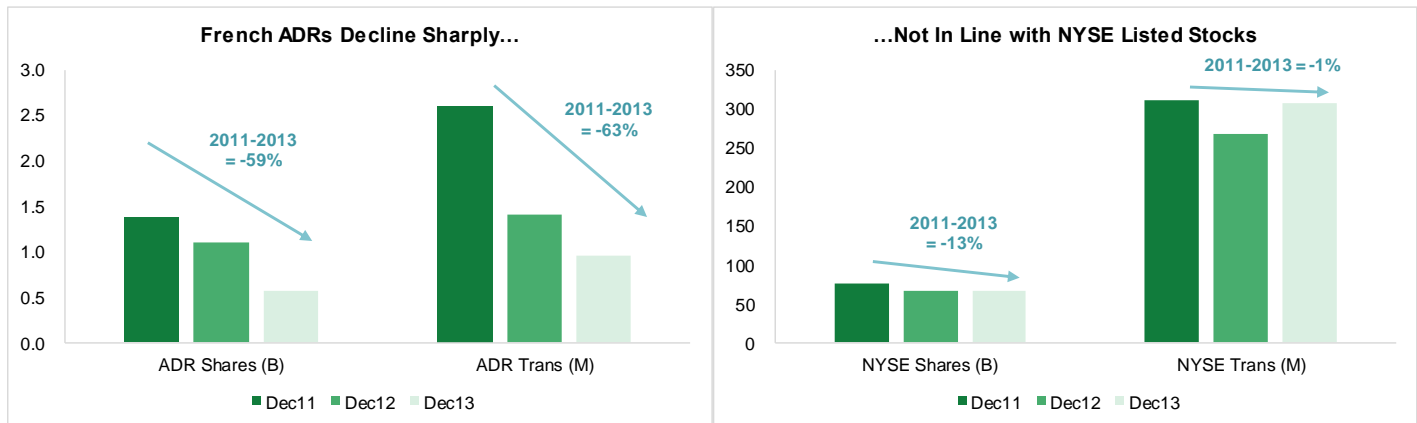
The right side of each chart shows the number of transactions in each month (December of each year). While French ADR transactions (left chart) saw a significant decline, -63% from 2011 to 2013, NYSE listed stock transactions (right chart) were essentially flat.

Shares

- 2011-2012: ADR -21%, NYSE -12%
- 2012-2013: ADR -49%, NYSE -1%
- 2011-2013: ADR -59%, NYSE -13%

Transactions

- 2011-2012: ADR -46%, NYSE -14%
- 2012-2013: ADR -32%, NYSE +15%
- 2011-2013: ADR -63%, NYSE -1%



Source: DTCC, NYSE, SIFMA estimates
 Note: Trans = transactions

Italian ADR Performance vs. NYSE Listed Stocks

In Italy, the FTT was imposed on ADRs beginning March 1, 2013. However, early announcements of the FTT circulated in October of 2012. At the same time, news was circulating about the EU-11 agreement¹⁶ to implement a Eurozone-wide Tobin tax in 2014. This would decrease the differential between an Italian-only transaction tax and trading in the rest of Europe. In other words, if other key trading markets in Europe all have a transaction tax, it is no longer a detriment to only Italian markets. This lessens the impact on trading patterns in Italy at this time.

The left side of each chart shows the number of shares traded in each month (March of each year). While still posting significant decline, the number of Italian ADR shares traded (left chart) fell less than NYSE listed shares (right chart), -56% from 2012 to 2014 versus -75%.

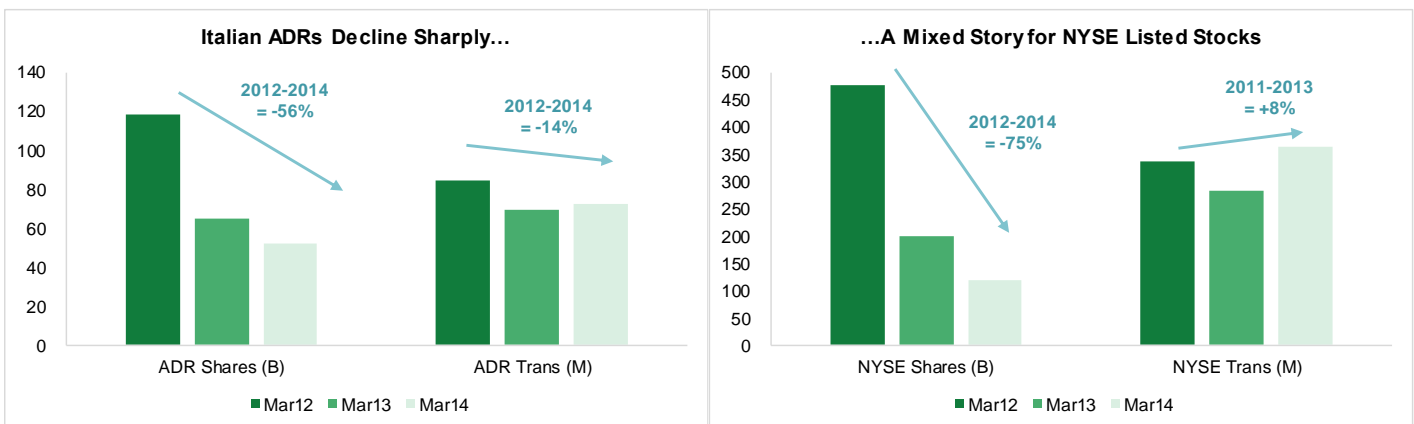
The right side of each chart shows the number of transactions in each month (March of each year). While ADR transactions (left chart) declined 14% from 2012 to 2014, NYSE listed stock transactions (right chart) grew 8%. NYSE listed stocks were a mixed story during this time period – number of shares traded declined each year, while number of transactions declined and then increased. Investors were transacting in less names, given U.S. market conditions.

Shares

- 2012-2013: ADR -45%, NYSE -58%
- 2013-2014: ADR -19%, NYSE -40%
- 2012-2014: ADR -56%, NYSE -75%

Transactions

- 2012-2013: ADR -18%, NYSE -16%
- 2013-2014: ADR +5%, NYSE +29%
- 2012-2014: ADR -14%, NYSE +8%



Source: DTCC, NYSE, SIFMA estimates
 Note: Trans = transactions

¹⁶ France, Germany, Belgium, Austria, Slovenia, Portugal, Greece, Slovakia, Italy, Spain, Estonia

Trading of ADRs – US Investors Accessing Non US Stocks

An American Depositary Receipt (ADR) is a security representing shares of a non-U.S. company traded in U.S. markets, denominated (and pay any dividends) in USD. ADRs have a long history in U.S. markets. The first one was introduced in 1927, on the British retailer Selfridges on the American Curb Exchange (which became the American Stock Exchange, now part of the NYSE exchanges).

ADRs are a means for U.S. investors to access non U.S. stocks. They trade like regular U.S. stocks during U.S. trading hours via U.S. broker-dealers, as a liquid and low cost way to invest in foreign stocks. The local custody bank handles all currency, custody and local tax issues, minimizing risks and simplifying the process of investing in foreign markets. Each ADR can represent a fraction of a share, a single share or multiple shares in the foreign security. The price of an ADR typically tracks the price of the foreign security in its home market, adjusted for the ratio of shares.

ADRs are broken out into three categories:

- Level I – The foreign company does not qualify (or does not want to) list on a U.S. stock exchange; they therefore trade OTC. Foreign companies use this as a means to gauge U.S. investor interest.
- Level II – The foreign company must register with the SEC and file Form 20-F annually, essentially the foreign company equivalent of a U.S. company's 10-K. They can list on a U.S. stock exchange if they meet the exchange's own listing requirements. This level of ADR listing increases trading prospects.
- Level III – This is the highest level of sponsorship. The foreign company must file Form F-1, a prospectus for foreign shares, and Form 20-F (and it must file Form 6-K if there is a material change in company information, similar to an 8-K for U.S. companies). This stage can be used to issue shares and raise capital.

ADRs are the U.S. equivalent of Global Depositary Receipts (GDRs), bank certificates issued in multiple countries for shares in a foreign company. The shares trade on local exchanges as domestic shares. Typically, the foreign branch of an international bank holds the shares, which are denominated in the local currency.

Appendix: Tobin Tax – The Start of It All

The Death of Bretton Woods Gives Birth to the Tobin Tax

To fully understand the mindset behind modern FTT proposals, one must go all the way back in history to the monetary arrangements of the Bretton Woods system. In 1944, representatives from 44 Allied nations¹⁷ met in Bretton Woods, NH to establish a new international monetary order, a system to facilitate international trade while preserving a country's autonomous policy goals. The then two largest economic powers of the world, the U.S. and U.K., diverged on their interests in this matter. The U.S., with a trade surplus and keen to open its exports up to world markets, sought to facilitate free trade via the stability of fixed exchange rates. The U.K. (led in the talks by famed economist John Maynard Keynes) sought greater exchange rate flexibility in order for war-struck countries like itself to correct balance of payments deficits.

The compromise was a fixed-but-adjustable rate system. Member nation currencies were pegged to the USD, which was in turn pegged to gold at \$35 per ounce. Member nations would buy or sell dollars to keep home currencies in a 1% band of the fixed rate. The International Monetary Fund (IMF) and the International Bank for Reconstruction and Development (now the World Bank) were established to ensure compliance with the rules. A series of factors – expanding U.S. monetary policy increasing the supply of dollars, increased competitiveness from other member nations, a shift in the U.S. to running a balance of payments deficit, depletion of U.S. gold reserves – led to the end of the Bretton Woods system (despite several attempts to keep the system alive). Currency pegs were suspended, thereby allowing currencies to float.

In response to the emergence of a flexible exchange rate system in 1971, fund flows between different currencies threatened to destabilize the global economy. Free currency markets led to increased trading of currencies, increasing the economic costs of countries exchanging currencies. To mitigate these risks, in 1972, American economist (and 1981 recipient of the Nobel Memorial Prize in Economics) James Tobin proposed the Tobin Tax. It was a proposed tax on spot currency conversions intended to penalize short-term currency speculation. Tobin originally proposed a tax on currency exchanges to curb destabilizing capital flows across borders, which created impediments to implementing monetary policy, i.e. efficiently moving money between countries with different interest rates. The proposed tax was to be applied to financial market participants – rather than consumers – to control the stability of a country's currency.

The Mechanics of the Tobin Tax

The originally proposed Tobin Tax was a currency transactions tax. It was to be a low tax rate, from 0.1%-0.5%, to be implemented on a global scale uniformly across nations. The proposed tax was to apply to the money flowing through financial markets via speculators in search of high short-term interest rates (differentials in countries' interest rates and inflation rates are key determinants in calculating exchange rates). The tax was to be paid by

¹⁷ World War II Allied powers (U.K., U.S., China, Soviet Union, etc.) coordinated foreign & military policies to defeat Axis powers (Germany, Japan, Italy)

financial institutions attempting to profit from market volatility by taking short-term (often deemed speculative) positions in currency markets. It was not meant to impact long term investments.

Tobin’s original proposal centered around allowing policy makers to enact policies based on fundamental factors, rather than being influenced by money flows seeking short-term returns for fear that this could destabilize domestic currencies. His proposal focused on developing countries, looking to find ways these countries could integrate into international trade free of interest rate risk. The objective of the Tobin Tax was to “throw sand in the wheels” of global financial markets – which he deemed highly efficient and necessary for global economies – via a small tax that would be enough to make short-term financial transactions uneconomical and curb volatility in exchange rate mechanisms, without creating obstacles to international trade.

The Tobin Tax proposal never caught on in the 1970s. It did receive renewed interest during the Asian financial crisis in the late 1990s¹⁸ and is still alive today in various forms. It is now more commonly known as an FTT.

The proposed benefits of a Tobin Tax have always been, and remain today, controversial. And Tobin himself backed off the idea.

¹⁸ A sequence of currency devaluations & financial market shocks beginning in 1997 after Thailand stopped pegging its currency to the USD. Currency declines spread rapidly across Southeast Asia, causing stock market declines, reduced import revenues, and government upheaval.

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 - Fixed Income
 - Equity
 - Multi-Listed Options
 - ETF
 - Capital Formation & Listings Exchanges
 - SOFR: The Transition from LIBOR
 - Electronic Trading

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