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Gunther CAPELLE-BLANCARD

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THE TAXATION OF FINANCIAL TRANSACTIONS: AN ESTIMATE OF GLOBAL TAX REVENUES[⊗]

Gunther Capelle-Blancard*
Centre d'Economie de la Sorbonne
University Paris 1 Panthéon-Sorbonne

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Abstract

The financial transaction tax (FTT) is often thought of as a utopian idea whose implementation would create an insurmountable obstacle for financial markets. However, stock market transactions in the United Kingdom have been taxed since the seventeenth century, in the form of a stamp duty that generates around €4 billion annually, without hindering the City's development. Virtually all developed countries have used it at some point, and even today, more than thirty countries in the world tax financial transactions, including Switzerland, Hong Kong, Taiwan, and France.

Actually, the FTT appears to be a good tax, with low distortion, high potential tax revenues, and minimal collection costs. It also has a redistributive effect. The UK stamp duty or the French FTT equivalent applied by the G20 countries, despite numerous exemptions, would generate between €156 and €260 billion per year (based on a nominal rate of 0.3% or 0.5%). Extending the tax to derivatives and intraday trades would increase revenue while improving transparency in financial markets.

Keywords: Financial transaction tax, Securities Transaction Tax, Tobin tax, Innovative financing.

JEL-Codes: G21; H25.

Résumé

L'idée d'une taxe sur les transactions financières (TTF) est souvent présentée comme une douce utopie, impossible à mettre en pratique, à moins de représenter un « handicap insurmontable » pour les places financières. Les transactions boursières sont pourtant taxées au Royaume-Uni depuis le XVIIe siècle, sous la forme d'un droit de timbre (*stamp duty*) qui rapporte environ 4 milliards d'euros chaque année, sans que le développement de La City n'ait été entravé. Pratiquement tous les pays développés y ont eu recours, et encore aujourd'hui plus d'une trentaine de pays dans le monde taxent les transactions financières, parmi lesquels la Suisse, Hong Kong ou Taiwan, ainsi bien sûr que la France.

La TTF présente les atouts qui font un bon impôt : la TTF est peu distorsive, les recettes fiscales sont potentiellement élevées et les frais de recouvrement minimes ; elle a en outre un effet redistributif. L'équivalent du *stamp duty* britannique ou de la TTF française appliqué par les pays du G20 permettrait de lever, malgré ses très nombreuses exemptions, entre 156 et 260 milliards d'euros par an (selon que l'on retient un taux nominal de 0,3% ou de 0,5%). L'étendre aux instruments dérivés et aux transactions intra-journalières apporterait des recettes supplémentaires, tout en améliorant la transparence sur les marchés financiers.

Mots-clés : Taxe sur les transactions financières, taxe Tobin, financements innovants.

Codes JEL : G21; H25.

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* gunther.capelle-blancard@univ-paris1.fr

Extended abstract

The financial transaction tax (FTT) is a widely debated concept that raises technical, economic, and legal concerns, while also carrying significant symbolic implications. Despite fears that the FTT would severely impede financial markets, the United Kingdom has been taxing stock transactions since the seventeenth century through a stamp duty that generates significant revenue without hindering the development of the City. More than thirty countries worldwide, including Switzerland, Hong Kong, Taiwan, and France, currently tax financial transactions, with empirical studies suggesting that the effects of the FTT are moderate: while transaction volumes decrease slightly when the FTT is introduced, there is very little impact in terms of market liquidity or volatility. Although the European FTT project is more ambitious than existing systems, fears about potential offshoring of financial activity are often exaggerated, as the dual issuance and residence principle creates conditions for a broadly applicable tax.

Currently, FTTs only apply to transfers of ownership, effectively excluding intraday transactions, and between 60% and 70% of transactions may be exempt from the FTT in France. Taxing intraday transactions would require a significant overhaul of the tax collection system to obtain reliable information, particularly about high-frequency trades and transactions on alternative platforms.

Ultimately, the FTT possesses qualities of a good tax: it is not particularly distortive, has the potential to generate high tax revenues with minimal collection costs, and has a redistributive effect. Applying the equivalent of the UK stamp duty or the French FTT to G20 countries, despite numerous exemptions, could raise between 156 and 260 billion euros annually with a nominal rate of 0.3% or 0.5%. Extending the tax to derivatives and intraday trades would not only provide additional revenue but also improve transparency in financial markets.

1. Introduction: a widespread but controversial idea

The idea of a financial transaction tax, also known as the Tobin Tax, Robin Hood Tax, or FTT, is to impose a micro-tax at a low rate on financial transactions to raise significant fiscal revenues, without adversely affecting the proper functioning of the markets or the economy. Supporters of the FTT see it as a way to curb short-term speculation and provide revenue for various causes, such as fighting climate change or providing development aid. However, opponents argue that implementing the FTT could be counterproductive, contributing to increasing volatility by decreasing liquidity. Critics of the FTT often use parodic ridicule to dismiss the idea, and defenders are seen as naive, incompetent, or populist.

Despite these criticisms, existing taxes in leading financial centers that have been in place for centuries have very little impact on market liquidity or stability, and this is likely to be true of future initiatives. The FTT has all the features of a good tax, but its success will depend on its design.

Currently, there are two main options up for negotiation: the European Commission project presented in 2011 and the generalization of stamp duty. The European Commission project faces a lack of cooperation among EU member states, while the stamp duty has been applicable in the UK for centuries without impeding the City's development. The stamp duty served as the inspiration for the French FTT introduced in 2012, followed by Italy and Spain.

While the FTT will remain central to many discussions in the coming years, it signifies a reaffirmation of the resolve to reform the financial system and a breath of new life into tax law in a globalized world. The revenue generated from the FTT could be used to fund various causes, making it an appealing option for supporters.[1]

2. Literature Review

2.1. A brief panorama

The FTT has a long history, almost as old as the markets themselves. It has been continuously applied in the United Kingdom for over three centuries, and almost all countries have used it at some point. Until the end of the 20th century, the FTT was a common practice in all main financial centers. With the liberalization of the markets, many industrialized countries abolished their systems – the United States in 1966, Germany in 1991, Japan in 1999, and so on. At the same time, most emerging countries in Latin America and Asia introduced an FTT. Just as the practice seemed to disappear from Western countries, the FTT has seen a marked resurgence of interest, with new systems in numerous countries, including France (see below), Italy, and Spain. More than thirty countries now have an FTT, among them the UK, Switzerland, Hong Kong, and Taiwan. Clearly, the implementation of the FTT has not impeded the development of these financial centers, which are among the foremost in the world.

The FTT is an old practice, exercised in numerous and diverse countries, and still applied today in several leading financial markets. There is therefore little reason to think that the FTT is fundamentally incompatible with the development of financial markets – these have, on the contrary, experienced considerable growth. At the very least, it must be acknowledged that criticisms of the FTT as unrealistic and impractical are unjustified.

In countries where the FTT exists, financial crises are neither more nor less frequent than in those that do not practice such a levy on transactions. It should also be noted that the FTT has never really curbed stock market euphoria: whether in the United States before the Great Crash of 1929, or in Japan during the 1980s, the two most famous episodes of speculative bubbles in the 20th century took place in countries with a FTT. The FTT is hardly effective in limiting market surges.

[1] See note for the AMF Scientific Advisory Board: http://www.amf-france.org/Publications/Lettres-et-cahiers/Revue-du-Conseil-scientifique/

The results of the FTT vary enormously from one country to another. For most countries that adopt it, the FTT is a relatively stable and low-distortion fiscal resource. In the case of Sweden, however, the experiment turned out to be a failure. It is necessary, therefore, to carefully examine the diverse potential taxation methods.

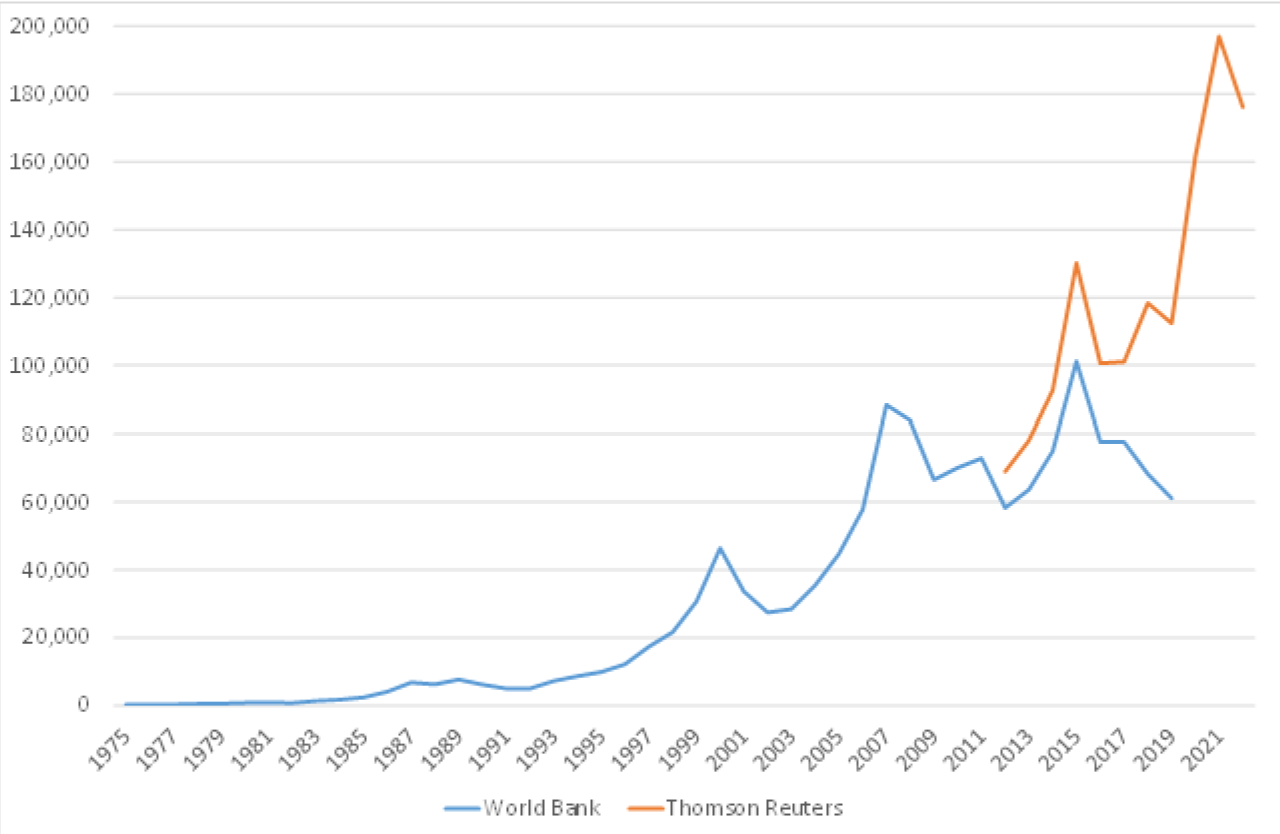
2.2. Too much finance?

The explosion in transaction volumes and the growth of financial markets since the 1970s have led some to question whether the size of the financial sector has become too large and whether this growth is socially desirable. Lord Adair Turner, a former chairman of the UK's Financial Services Authority, has raised this concern, arguing that the financial sector has become "beyond a socially reasonable size" and therefore a source of instability and has not contributed enough to economic growth.

The statistics on the growth of the financial sector are indeed striking. Since the 1970s, global GDP has multiplied by 15 times, market capitalization by 50, and the amount of stock market transactions by 500. The ratio of the total amount of stock market transactions to GDP has risen from 5% to 200% in fifty years. This growth has been accompanied by a rise in alternative trading platforms, making it difficult to measure the exact total amount of trades.

In France, for example, the total amount of transactions on the Paris Stock Exchange has grown from 3.5 billion euros in 1970; 9 billion in 1980; 100 billion in 1990; 1,000 billion in 2000; to over 2,000 billion euros today, taking into account transactions carried out on alternative platforms. This exponential growth has led some to question whether the financial sector has become too large and whether there is a need for measures such as the FTT to address this issue.

Figure 1. Evolution of global stock market transactions (in bn $)



Sources: World Bank, World Federation of Exchanges & Thomson Reuters (Monthly Market Share Reports).

While abundant financing can promote economic growth, an increase in stock market transactions does not necessarily equate to more or easier financing, or greater market liquidity. It is impossible to determine the "right" transaction volume. In fact, it is acknowledged that investors tend to carry out too many trades. Modern financial theory advocates moderation in trades due to the great difficulty of "beating the market". Studies have shown that shorter investment horizons can negatively impact listed companies, leading to reduced R&D and poor evaluation of investments. The presence of long-term investors is desirable. Additionally, very high-frequency trading, which makes up as much as 70% of equity trading, raises numerous concerns. It is likely to result in sudden price changes and its social value is questionable. While the impact on markets is a debate that arouses lively controversy, the potential benefits in terms of liquidity are minimal. High-frequency trading gains are equivalent to rents at the expense of longer-term investors, and costs include technological overinvestment, greater opacity, and increased distrust of the markets.

2.3. The FTT: a low-distortion tax

The concept of the Financial Transaction Tax (FTT) can be traced back to J.M. Keynes and was later expanded to the foreign exchange market by J. Tobin. The FTT has received support from notable economists such as Nobel Prize winners P. Krugman and J. Stiglitz, as well as L. Summers and J. Sachs. However, despite this support, economists are generally hesitant to implement an FTT, whether on currency exchange or stocks, often regarding it as counterproductive.[2] The main argument against the FTT is that it may harm market liquidity and lead to increased volatility by raising transaction costs.[3] Nevertheless, empirical studies have shown that the FTT does not have detrimental effects on the market, contrary to this argument.

Impact studies in countries where an FTT exists or has existed reveal a negative impact on volumes, but it is evident that the tax has no effect on the liquidity of shares or market volatility. Its effects, if any, are slight. Even for Sweden in the 1980s, if we examine in detail the study by Umlauf (1993)[4] often cited as a prime example, the results are inconclusive. The effect of the tax can be positive, zero, or negative depending on several factors, such as whether daily or weekly volatility is measured, whether the 1987 crash is taken into account, or whether the comparison is with the UK or the US markets.

It is worth noting that existing studies typically only compare transaction volumes or volatility before and after the introduction of the FTT (or a change in its rate). Therefore, it is challenging to isolate the specific effects of the tax from other market effects resulting from various events during the same period. To address this issue, it is necessary to have a sample of securities that are not subject to the FTT but have similar characteristics to taxed securities. The introduction of the FTT in France in August 2012 presents an opportunity to do so.

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[2] Harvard professor Kenneth Rogoff illustrates this perspective well: "The Wrong Tax for Europe," October 3, 2011.

[3] Illiquid markets tend to be more volatile. However, this does not necessarily mean that an increase in transaction volumes always leads to market stability, nor does a decrease in volumes always imply an increase in volatility. In theoretical models that explore this relationship, it depends on assumptions about the rationality of the market participants. If all participants are assumed to be rational, then any increase in transaction costs will harm market efficiency. However, if some participants (even a minority) exhibit limited rationality, then a reduction in volumes can have beneficial effects. For surveys, see McCulloch, N., et G. Pacillo, 2011, "The Tobin Tax: A Review of the Evidence," IDS Research Report, n°68, Institute of Development Studies; Matheson, Th., 2010, "Taxing Financial Transactions: Issues and Evidence," IMF Working Paper.

[4] Umlauf S., 1993, "Transaction Taxes and the Behavior of the Swedish Stock Market," *Journal of Financial Economics*, 33, 227-240.

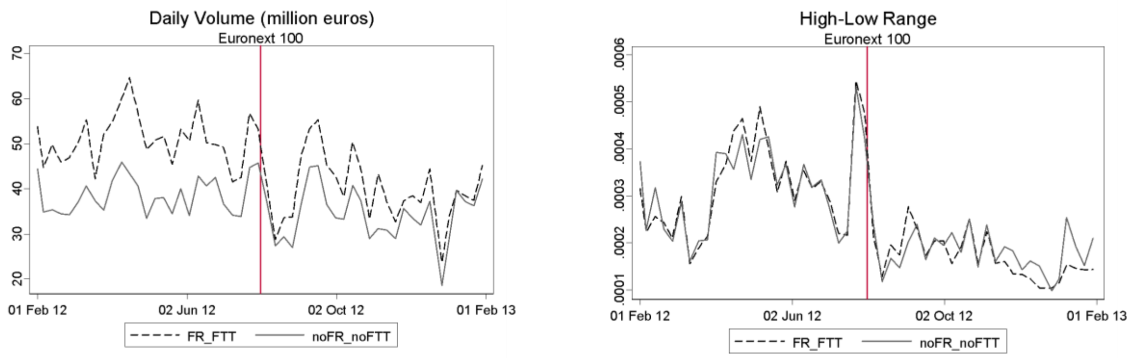
2.4. The case of the FTT in France since 2012

In August 2012, France (re-)introduced the Financial Transaction Tax (FTT), which mainly targets the exchange of shares of companies located in France with a market capitalization exceeding 1 billion euros (Article 5 of the amending finance law for 2012 – n°2012-354). The FTT rate is 0.3% (it was initially 0.1%, but was doubled before its implementation in 2012, and increased again in 2017), and approximately one hundred companies are subject to it. This FTT adopts the principle of issuance and is thus similar to the UK stamp duty (much less problematic than the former "Impôt sur les Opérations de Bourse", in effect from 1893 to 2018). The French FTT is accountable by all stakeholders, regardless of their nationality and location. This tax only applies to transactions leading to a transfer of ownership, effectively excluding same-day purchase and sale transactions, particularly high-frequency trading.

The FTT's base and the attributes of the French stock market make it easy to identify control groups, making it well-suited for impact studies. In a 2013 study, the evolution of liquidity and volatility over a year based on the tax's introduction was measured.[5]

The study found that large French companies had an average of €40 million of shares traded in the six months following the FTT's introduction, compared to €50 million in the previous six months. However, this 20% reduction cannot be solely attributed to the tax, as other factors like lower activity in August or December may have played a role. Control groups of large foreign companies traded under the same conditions also saw their transaction volume fall by 10%. In regards to shares not subject to the FTT, large French companies have experienced an overall decrease of around 10% in their transaction volume. Considering the variability of volumes during this period, this relative decline can be considered significant.

Figure 2. Evolution of the liquidity and volatility of shares listed on Euronext before and after the introduction of the FTT



Interpretation: The difference between the lines makes it possible to measure the effect of the FTT: when, for example, the dotted line approaches the solid line (as is the case at the top left), this reflects lower transaction volumes for shares subject to the tax, relative to those that are not. Calculations: Capelle-Blancard and Havrylchyk (2016).

[5] See Capelle-Blancard, G., et O. Havrylchyk, 2016, "The impact of the French securities transaction tax on market liquidity and volatility," *International Review of Financial Analysis*, 47, 166-178. The idea is to compare the dynamics of samples of securities subject to the tax with that of control samples, using the so-called double-difference method (before/after and taxed/untaxed).

Despite the negative effect on transaction volume, the FTT had no significant impact on trading costs, market resilience, or volatility. Indeed, liquidity and volatility are a multidimensional and complex concepts and transaction volumes are a poor proxy.

Five studies on the French FTT found a decrease in transactions of similar magnitude[6], but this decrease was mainly observed during the first few weeks and appeared to be transitory. The introduction of the FTT only slowed the increasing trend in transaction volumes by a few quarters. Moreover, the studies found no significant effect on price range, and only the depth of the market seemed to have decreased since the FTT's implementation. However, this had no particularly negative effect on the other components of liquidity. There was also no suspension of activity in favor of non-taxable investment choices, such as contracts for difference (CFDs), contrary to what practitioners in the press had announced.

Further examinations from 2013 to 2019 found that securities newly subject to the FTT did not suffer a deterioration in liquidity, and securities that left the FTT system did not benefit from an improvement in their liquidity. The increase in the tax rate in 2017 (from 0.2% to 0.3%) did not have a significant impact either.

Numerous academic studies conducted across countries using diverse methods have yielded unequivocal results. The implementation of the FTT, in its current form, leads to a reduction in transaction volumes of about 20%, without significantly impacting the liquidity and volatility of stock prices. However, the current FTT systems are found to be ineffective in regulating financial activities. Nonetheless, they do not pose any obstacles for corporate financing nor do they have any adverse effects on the competitiveness of companies.

3. The FTT: a question of design

The debates surrounding the FTT appear to be more of a political matter between states, the banking and financial lobby, and NGOs, rather than a matter of reason. Its detractors claim that the FTT would burden the economy, lead to massive offshoring, cause job losses, ruin investors, and even impoverish the state. However, as is often the case, the outcome will depend on how the tax is designed.

3.1. Scope: the dual issuance and residence principle

The first key element in this design is the scope. The main argument against the FTT concerns possible circumvention. For its detractors, the FTT is not implementable on a national or even European scale, and the only solution would be a global system. Needless to say, such a project would be indefinitely postponed. It is true that capital today is highly mobile, and financial innovation is particularly effective in circumventing regulations or taxation. This does not mean, however, that the FTT is doomed to fail. The fact that it successfully exists in many places around the world, such as London, Paris, and Hong Kong, is proof of this.

Introduced in 1694, the UK stamp duty has continuously been applied, making it the oldest tax in effect today in the UK. More than three centuries after its creation, the stamp duty remains a model system. In practice, the UK Treasury levies a 0.5% tax on purchases of shares issued by UK companies, which is payable regardless of the nationality or residence of the counterparties. The FTT in the UK generates several billion pounds of state revenue each year, and collection costs are modest, only 0.02 pence per pound sterling collected, 75 times lower than that of income tax.

The argument against the FTT concerning circumvention is usually based on the example of Sweden, where such a tax was introduced in 1984. This project effectively failed and ended in the tax's repeal in

[6] For a summary, see Capelle-Blancard, G., et O. Havrylchyk, 2016, *op. cit*.

the early 1990s. But the problem with the Swedish FTT is that it only applied to transactions carried out by Swedish brokers. The UK stamp duty is much better designed since all operators are liable for the tax when they deal with shares issued by UK companies. This is the "issuance principle". In other words, it is the nationality of the company that issues the shares that delimits the scope of the tax, not that of the counterparties or intermediaries who carry out the transaction. As a stamp duty, this tax provides a solid and binding legal basis. It is a relatively difficult device to circumvent, which limits tax evasion. Although there is no precise data on this issue, we know that more than half of the revenue from this tax is paid by foreigners. The FTTs introduced in France in 2012, in Italy in 2013, and in Spain in 2021 are similar in this respect, and they have not caused massive offshoring of transactions.

In the case of the European FTT, the "issuance principle" is combined with a "residence principle" which includes all transactions carried out by financial intermediaries of the eleven participating European countries, regardless of the location in which they take place. This is another element that reduces the risk of circumvention. The fear of unfair competition from foreign parties established in countries where an FTT is not in place is therefore exaggerated, as they will also be subject to the tax and will not benefit from a deadweight loss effect. The dual principle of issuance and residence creates the conditions for a tax that is very broadly applicable, regardless of the origin of the transaction."

3.2. Which base?

Which transactions should be taxed? Should we impose a tax on shares, as proposed by Keynes[7], or on currency trading, as preferred by Tobin? What about bonds, to reduce debt financing, or derivatives, often considered to be financial "weapons of mass destruction"? The vast majority of tax systems in place today concern exclusively shares.[8] Currency exchange transactions are only taxed in a few Latin American countries, derivative transactions in Taiwan and Italy, and bond transactions mainly in Thailand and Belgium. However, there is a rationale for wanting the broadest possible tax base, namely, to avoid distorting investors' choices. Therefore, it is for practical reasons that the base is often limited to shares.

Concerning the European project, there are two opposing strategies. The first is to adopt an FTT limited to shares, at least initially, but to have it implemented as quickly and by as wide a group of countries as possible. The second involves a more ambitious approach, with a broad base and a low rate. Today, the first option seems the most plausible since the European Commission's ambitious project no longer has much political support.

Regarding derivatives, we face implementation problems. These are complex instruments whose tax base is difficult to identify.[9] Moreover, there is much opposition between the banking and financial sector. This is not surprising when we consider that transactions between financial intermediaries represent the bulk of derivatives, according to the BIS.

The bond market is in theory much less speculative than the stock market or derivatives markets. Even if bond issues are quite numerous, transaction volumes are much lower than for equities (in 2022, for example, bonds were traded for less than 3 billion euros on Euronext Paris). In fact, bonds are often

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[7] For Keynes, *"The introduction of a substantial government transfer tax on all transactions might prove the most serviceable reform available, with a view to mitigate the predominance of speculation over enterprise."*

[8] To protect companies whose securities are the least liquid, it is possible to exempt small capitalizations, as is the case in France (below a billion euros of capitalization, which concerns one hundred companies out of the approximately 600 listed in Paris), in Italy (with a threshold of 500 million euros) or in the United Kingdom (since 2014, for small companies with high growth potential).

[9] See Persaud, A., 2014, "Taxing transactions in financial derivatives: problems and solutions" *Intelligence Capital*. www.stampoutpoverty.org/wp-content/uploads/2014/09/Taxing_Derivatives_Transactions_Persaud_120914.pdf

excluded from discussions concerning the FTT. Still, another sensitive question remains: should we include sovereign bonds or not? States are reluctant to do so, fearing that it will increase the cost of public debt.

"Throwing some sand in the well-greased wheels of international finance": this was James Tobin's objective when he proposed to tax currency exchange transactions in the 1970s. Though popular, this famous Tobin tax never emerged, despite the dizzying and nearly continuous rise in currency exchange transactions. Yet given the sums involved, even with a very low rate, tax revenues could amount to several hundred billion dollars. This tax is now mainly advocated by NGOs (Attac, Oxfam, Stamp-out-Poverty, One, etc.), who would like to see its proceeds allocated to development aid or the fight against climate change. This proposal, whose logic is quite similar to the tax levied on plane tickets used to finance the fight against HIV/AIDS, is part of the larger movement towards "innovative financing". The obstacle concerning the FTT seems primarily political, as it presupposes broad international cooperation.

3.3. Which rate?

The European project applies a rate of 0.1% for transactions in cash. This may seem low compared to the rate applied in France (0.2% when it was introduced in 2012; 0.3% since 2017) or the United Kingdom (0.5%).[10] But as is often the case in taxation, the nominal rates are misleading and do not reflect the collection process well. It all depends on the tax base – or, more precisely, on its exemptions. In practice, the definition of the rate and that of the tax base are closely linked.

To better measure the effective tax rate, let us do some simple calculations. In 2022, the French FTT brought in 1,363 million euros to the general budget (source: *situation mensuelle de l'Etat*), to which are added 528 million (the capped amount) allocated to the Solidarity Fund for Development [*Fonds de solidarité pour le développement*] (FSD), i.e., a total proceeds of 1,891 million euros (a record). The nominal rate of the FTT being 0.3%, this corresponds to a tax base of 630 billion. However, this same year, the total volume of transactions on Euronext Paris amounted to 1,139 billion, to which we must also add transactions carried out on other platforms, a number that is unfortunately difficult to measure.[11] Assuming that the market share of Euronext Paris is between 60% and 75%, the total volume can be estimated between 1,500 and 1,900 billion.[12] We then obtain that only 33% to 42% of transactions are actually taxed. In other words, the "implicit" tax rate of the FTT in France is only 0.10% to 0.12%.[13]

[10] It is also possible to tax market venues at different rates depending on whether they are regulated or not. This is the case in Italy, where a double rate is implemented for transactions carried out over-the-counter. The over-the-counter market share has also fallen sharply. See Capelle-Blancard, G., 2017, "Curbing the Growth of Stock Trading? Order-to-Trade Ratios and Financial Transaction Taxes," *Journal of International Financial Markets, Institutions and Money*, 49, 48-73.

The concept of differentiated rates was not retained in the European project. The Italian experience, however, suggests that this can be a good way to incentivize transactions to migrate to regulated markets, particularly in the interest of transparency.

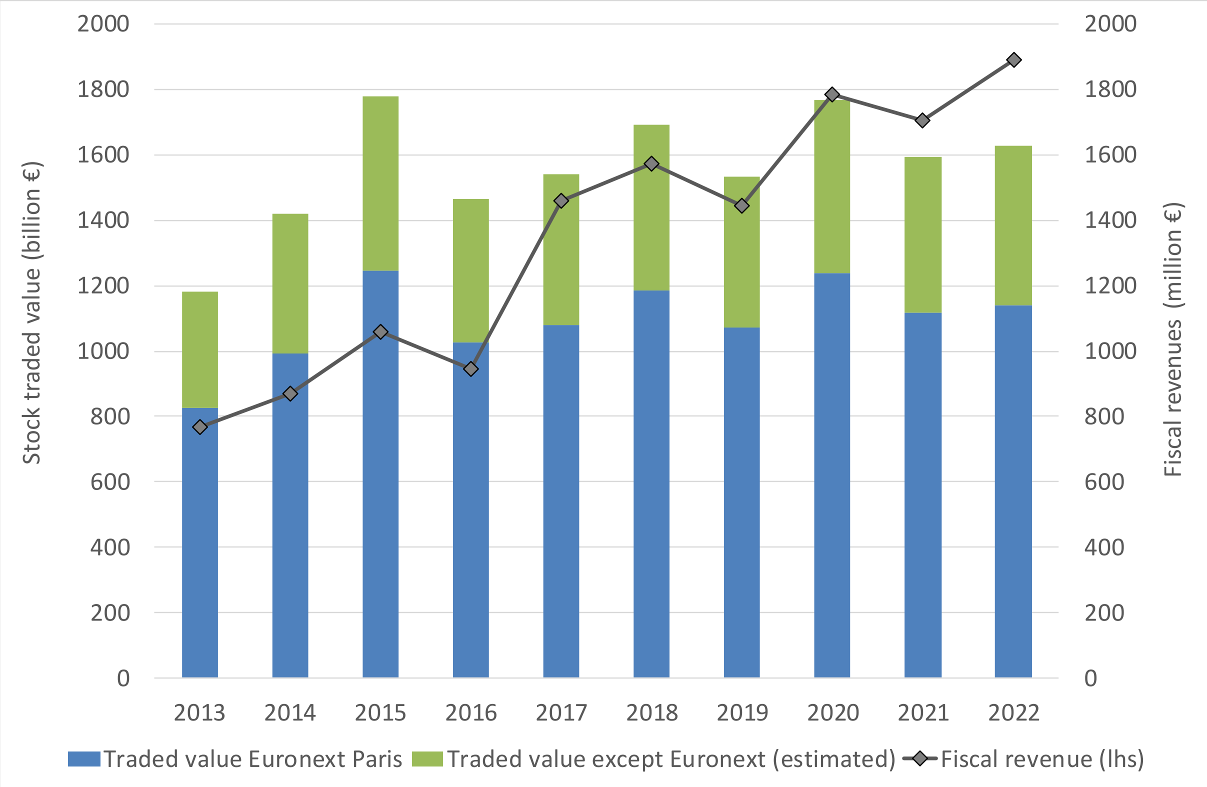
[11] Neither the AMF nor the Banque de France provides this information. At the international level, the World Bank does provide some data, but it only concerns the main stock exchanges, and for France does not go beyond 2015.

[12] This estimate is deliberately very conservative. According to ESMA (TRV No.1 2023 Structural Market Indicators), the stock traded value in France in 2021 is 2,646 billion euros, i.e. a market share for Euronext of 42%. According to Refinitiv, if we take into account OTC trades, it is over 4,300 billion in 2022.

[13] We can make a similar calculation for the other taxes, both past and present. For the UK, we also come close to an implicit rate of 0.1%, for a nominal rate of 0.5%. Until the 1990s, the implicit rates were, in fact, very close to the nominal rates. This was the case in France, for instance, with the tax on stock exchange operations, or in Sweden. The nominal rate applied in the 1980s in Sweden (2%) was already much higher than that applied today

The main reason that the effective rate is so low is due to intraday transactions which are, de facto, exempt. Today, with the question of the geographical scope, this is one of the key issues concerning the FTT.

Figure 3. Stock traded value and FTT revenues in France



Left vertical axis: stock traded value (in billion euros); Right vertical axis: Fiscal revenue (in million euros). Blue bar: Euronext Paris; Green bar: Estimated, excluding Euronext; Gray line: Fiscal revenue of the FTT

Sources: Tax revenue according to the Situation mensuelle de l'Etat *(calculated as the sum of revenue in the general budget and the amount allocated to the FSD). Total traded value according to Euronext Paris (it is assumed that the share of Euronext Paris is 70%).*

3.4. FTT and HFT

The FTTs currently in effect are nearly all equivalents of "stamp duties," payable in the event of transfers of ownership of securities. However, these transfers of ownership have traditionally been recorded at the close of markets, which inevitably excludes transactions settled during a session. Experience confirms that this simple strategy ensures solid legal guarantees. As long as intraday transactions represented only a small part of the volumes exchanged, this did not pose problems. But with the explosion of intraday trading, this de facto exemption severely reduces the income generated from the

in France (0.2%); but there is also a relatively narrower taxable base today. By comparison, it thus appears that the FTT rate in France today is 20 times lower than that which prevailed in Sweden in the mid-1980s. This is not to suggest that the FTT rate should be higher – in fact, it is hardly possible to calculate the optimal rate. On the other hand, this comparison of implicit rates suggests great caution when comparing the situation in France (or the European project) to the situation that prevailed in Sweden 40 years ago.

FTT. But above all, it is incompatible with one of the objectives often put forward by the FTT, which is supposed to curb short-term speculation.

In France, the system provided for a tax not only on daily transfers but also on high-frequency trading.[14] However, in practice, the tax was not effective, so much so that tax revenue was nil. Furthermore, the extension of the FTT to intraday transactions has been subject to debate in Parliament year after year. All of these amendments were unsuccessful: from lack of support to full rejection, or adoption only to be followed by government intervention and withdrawal a few weeks later; or even censorship by the Constitutional Council for a "formal defect" [*vice de forme*]. In December 2016, Parliament finally voted for an extension of the FTT to the execution of purchase orders, irrespective of delivery of the security. The taxation of intraday transactions was initially postponed from January 1, 2017, to January 1, 2018; ultimately, the government resulting from the 2017 presidential elections chose to abandon the extension, as much, it seems, to promote the competitiveness of the Paris financial center post-Brexit as to avoid legal risk.[15]

Taxing intraday transactions requires a thorough revision of the tax collection system, which is currently based on the transfer of ownership. With regard to the French FTT, most collections are managed by the central securities depository Euroclear, which centralizes information concerning the balance of purchases and sales at the end of the day.[16] Thus in addition to political opposition, there is also a technical obstacle – that of obtaining reliable information on stock market transactions, including high-frequency transactions and/or those carried out on alternative trading platforms. This obstacle is not insurmountable. Any time a new tax is levied, measuring the base becomes a concern (in a completely different field, see the recent debates on the taxation of bandwidth). This could be a further reason to expand the FTT: it might finally result in reliable, accurate information on the colossal volume of stock market transactions.

An alternative would be to consider a tax on cancelled orders rather than transactions. While the ratio between the number of orders transmitted to the market and the actual number of transactions was stable and slightly above 1 until the early 2000s, it has since then risen sharply to more than 30 today. This obviously raises serious concerns about possible manipulation of stock prices.

4. The FTT: a trade-off

Why tax financial transactions? Is it to raise new tax revenue or for regulatory purposes? Some hope to achieve both goals simultaneously through the idea of the "double dividend" or "win-win" strategy. However, in practice, these objectives can be contradictory. To effectively limit speculation, assuming it is a desirable objective, the tax rate would need to be much higher than what is currently in place or expected. If this goal were achieved, tax revenues would necessarily be low. Pursuing more than one objective without utilizing more than one instrument is futile.

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[14] High-frequency trading (HFT) consists of a multitude of orders in fractions of time (orders at the speed of a millisecond) using powerful algorithms and computers. In Europe, HFT would represent almost half of the total amount of transactions and more than two thirds of the number of orders.

[15] In an interview with Ouest France, President E. Macron expresses his clear reluctance: "The French tax was voted by the former majority, in a demagogic way with regard to 'intraday' transactions, knowing that it was infeasible. When you're the only one doing it, the trades go elsewhere! No more listed companies in France! At the European level, I said that I will go all the way. I'm not backing down on this. At the same time, there needs to be an articulation with regards to British access to our financial markets in the context of Brexit. Otherwise, if all your companies can go and operate from London, which will engage in fiscal tax dumping, with the same rights as in Paris or Frankfurt, they will all leave. I want the FTT. I want a FTT that applies in a coherent space, that makes sense, and that is effective."

[16] See also the summary judgement n°82017-1860 of the "Cour des Comptes" which points notably to the lack of administrative controls.

4.1. One FTT, or several?

If the aim is to limit financial instability, there are likely more effective instruments available than the FTT. These may include regulating high-frequency trading, restricting access to certain markets or market participants, shifting from a continuous to a fixing system, strengthening the prudential requirements of financial intermediaries, combating moral hazard, and implicit guarantees to "too big to fail" banks, maintaining the separation of distinct financial activities, and so on. It may also be possible to regulate or tax only certain transactions, such as those deemed to be least useful for the proper functioning of the markets.

According to the Tinbergen rule, a fundamental principle of economic policy, there should be at least as many policy instruments as there are policy objectives. If the aim is both to collect significant funds and to combat specific practices in the financial markets, a single tax may not be sufficient. However, there is no need to choose between the two. We could consider a global FTT in conjunction with more targeted taxes, such as those on cancelled orders or investments made using technologies that increase the speed at which orders are placed.

4.2. Expanded globally, the FTT could bring in between €162 billion and €405 billion each year

The FTT is a significant source of revenue for many countries, including approximately £4 billion for the United Kingdom, more than €7 billion for South Korea, Hong Kong, or Taiwan, and 1.5 billion Swiss francs for Switzerland. In France, tax revenue is nearly €2 billion. How much revenue could an FTT generate at the level of the Eurozone, Europe, or even the world? [17] Of course, these estimated amounts will depend on the input data used. In the following scenarios, we will only consider shares (bonds, derivatives, and currency transactions are excluded).

The first scenario considers an FTT applied only to transfers of ownership (like the French FTT or the UK stamp duty), while the second involves an FTT applied to all transactions. For both scenarios, we apply two rates: 0.3% (as in France) and 0.5% (as in the UK). We assume that two-thirds of transactions are intraday and that if the FTT is extended to intraday transactions, the transaction volume will be halved. Trading volume data is according to the Monthly Market Share published by Refinitiv (Thomson-Reuters). The data and results for the world's main financial centers, country by country, are presented in the appendix. These data are approximate as it is challenging today, with the multiplication of exchange venues, to know precisely the amount of transactions.[18] Table 1 summarizes the expected tax revenues if the FTT is extended to the EU27, Europe, the G7, the BRICS, the G20, and the world.

Scenario 1. *If the French FTT is generalized (with a rate of 0.3%), the annual tax revenue would be €17 billion for the EU27, €26 billion for Europe, €86 billion for North America, and €48 billion for Asia-Pacific. At the global level, the tax revenue could be €162 billion, with 66% for the G7, 22% for the BRICS, and 96% for the G20. If the UK stamp duty is generalized (with a rate of 0.5%), the annual*

[17] There are many estimates of the potential revenue from the FTT, which of course depends very much on the type of tax, exemptions, and assumption about the reaction of investors (elasticity). At EU27 level, the Commission initially estimated tax revenue at €57 billion, two-thirds coming from the taxation of derivatives. If we limit to the enhanced cooperation (EU11), the revenue would be around €30 to €35 billion, or 0.5% of the GDP of the countries concerned. For the United States, the think tank CEPR estimated in 2009 that tax revenues could rise from $177 to $354 billion. Finally, according to the summary report published by the *Institute of Development Studies*, on a global scale, for a tax on all spot or futures financial markets, revenues could amount to more than $1,000 billion.

[18] According to ESMA, in the EU27 for instance, there are 116 regulated markets (RMs), 144 multilateral trading facilities (MTFs), 29 organised trading facilities (OTFs), 179 systematic internalisers (SIs), 15 approved publication arrangements (APAs) et 19 approved reporting mechanisms (ARMs).

tax revenue would be €29 billion for the EU27, €44 billion for Europe, €143 billion for North America, and €80 billion for Asia-Pacific, with a total of €270 billion at the global level. The estimates here are conservative and relatively precise, as we only need to input the amount of transactions, with the other parameters being well known.

Scenario 2. *If the FTT were extended to intraday transactions, assuming a decrease of 50% of the transaction volume, tax revenues could rise between €243 and €405 billion per year (for a rate of 0.3% and 0.5%, respectively).* The estimate here is more challenging to predict as we do not know what the effect of a tax on the volume of high-frequency trading would be.

Table 1. Estimated tax revenue from FTT

This table shows the expected tax revenues from FTT, at the global level. All figures are in billions of euros. Transaction volumes are estimates based on Refinitiv data for 2022. We consider two bases (only daily transfers - like the stamp duty - or all transactions) and two nominal rates (0.3% or 0.5%). For the calculation of the effective rate, we assume that two thirds of the transactions are intraday and that the extension of the FTT to intraday transactions will lead to a 50% decrease in volumes.

Scenario	**Stamp duty**		**TFF extended to intraday**	
Nominal rate	**0.3%**	**0.5%**	**0.3%**	**0.5%**
Effective rate	0.100%	0.166%	0.3%	0.5%
Transactions (billion €) - Source: Refinitiv (Monthly Market Share) for 2022				
North America	86,000		43,000	
Europe	26,000		13,000	
EU27	17,000		8,500	
Japan	7,000		3,500	
Asia-Pacific	48,000		24,000	
G7	107,000		53,500	
BRICS	35,000		17,500	
G20	156,000		78,000	
World	162,000		81,000	
Estimated tax revenues (mds €)				
North America	86	143	128	214
Europe	26	44	40	66
EU27	17	29	26	43
Japan	7	12	10	17
Asia-Pacific	48	80	72	120

G7	107	178	160	266
BRICS	35	58	52	87
G20	156	260	234	390
World	**162**	**270**	**243**	**405**

5. Conclusion

The proposal to tax financial transactions, while appealing to a large part of the public, is controversial. It has been rejected by most experts who believe such an initiative would be difficult to implement. Even if it were possible, there are concerns that the increase in transaction costs could reduce liquidity and increase market volatility. However, the situation has changed since the successive financial crises, and the debate is now underway.

Discussions around the FTT inevitably focus on its impact. Some hope to reduce market instability by discouraging speculation, while others oppose it, fearing an increase in volatility due to a lack of liquidity. However, empirical studies have shown that both of these concerns are unfounded. As currently practiced, the FTT has very little impact on the markets. It is neither the apocalypse feared by some, nor the panacea hoped for by others.

The FTT is an advantageous, modern, and efficient tax. It is not about punishing bankers or the markets. A tax with a broad base and a low rate does not generate distortions, brings in high revenues at a low collection cost, and has a strong redistributive effect. The UK stamp duty extended to G20 countries could bring in around 200 billion euros per year, with two-thirds financed by G7 countries and a quarter by emerging countries. This revenue could be used to finance development and the fight against climate change. It is also possible to extend the FTT to derivatives and intraday transactions, which would increase the revenue collected and promote transparency in financial markets.

There are two options on the table. On the one hand, there is an ambitious project that would apply to all instruments, including the most speculative and short-term operations. On the other hand, there is a generalization of existing systems to a large number of countries. The second option is more modest, but it has a greater chance of arousing support from numerous European (but not only) countries. This is the apparent project of President Emmanuel Macron, as per his speech on September 26, 2017: "There are two countries in Europe that have an FTT, the UK and France. I propose that all 28 countries adopt one or the other." This integration would be a significant step towards the possibility of a more ambitious mechanism in the not-so-distant future.

The FTT is a strong symbol, and it is far from trivial. The willingness to pay taxes is one of the bases of democracy. At the European level, if the European Commission's project is approved, it would be a significant breakthrough in international tax cooperation. France has been one of the main architects of the European FTT project from the beginning. It is a carefully elaborated project designed to avoid major pitfalls, and recent experiences inspire an optimistic outlook. This is an opportunity to affirm both its desire to reform the financial sector and its commitment to international collaboration.

Appendix. Main financial transaction tax schemes

Tax systems vary greatly from one country to another and make comparisons particularly difficult, notably because of the many exemptions. The information provided below should therefore be interpreted with caution.

Europe

- **United Kingdom**: Created in 1694, stamp duty is the oldest tax still in force in the United Kingdom. The system mainly concerns shares purchased by electronic means (Stamp Duty Reserve Tax, SDRT), regardless of the nationality or residence of the counterparties. The rate is 0.5% for tax revenues of over £4 billion per year, or 0.5% of total tax revenues.
- **France:** The French FTT was introduced in 2012, but a tax on stock market transactions existed between 1893 and 2018. Shares of companies headquartered in France with a market capitalization of more than €1 billion are taxed. The rate is 0.3%, but the tax only applies to transfers of ownership, which excludes intraday transactions. In addition, there is a tax on canceled stock market orders, but only for financial intermediaries operating in France. 1,891 million in 2022, or about 0.4% of total tax revenues.
- **Switzerland:** The Swiss stamp duty (Umsatzabgabe) was introduced in 1918 and reformed in 1973. It applies to the transfer of ownership of securities for valuable consideration by an authorized Swiss financial intermediary, the "securities dealer". The rates are 0.15% for Swiss securities and 0.3% for foreign securities. This tax brings in approximately 1.5 billion Swiss francs per year, or 0.8% of total tax revenues.
- **Italy:** The Italian FTT was introduced in 2013, modeled on the French FTT. However, a tax existed until 1998. The tax is on the shares of Italian companies with a capitalization of more than 500 million. The rate is 0.1% for trades made on regulated markets and 0.2% otherwise. There is also a 0.02% tax on high-frequency trading and a tax on derivatives. The tax brings in €500 million per year, or about 0.5% of total tax revenues.
- **Spain:** The Spanish FTT was introduced in 2021; however, an FTT existed until 1988. It is close to the British, French or Italian model.
- **Belgium:** A tax on stock exchange transactions (TOB) has existed since 1913. The FTT was reformed in 2017 to include transactions by non-resident financial intermediaries. The rate is 0.35% for stocks, and 0.12% for bonds.
- **Ireland:** Created in 1937 on the model of the British stamp duty. Its rate is 1% and tax revenues are around EUR 500 million per year, or about 0.5% of total tax revenues.

Asia

- **China:** Share transactions for Chinese A-shares are taxed at a rate of 0.1%. The tax brings in nearly 180 billion yuan a year, or almost 1% of total tax revenue.
- **South Korea:** The FTT imposes a rate of 0.15% on equity transactions on the Korea Stock Exchange, 0.3% on Kosdaq or Konex, and 0.5% on OTC transactions.
- **Hong Kong:** An FTT exists for equity transactions at a rate of 0.1%. 7 billion per year, or about 18% of total tax revenue.
- **Taiwan:** The FTT imposes a rate of 0.15% on equity transactions and 0.1 for bonds. There is also a tax on derivatives. 7 billion per year, or 10% of total tax revenues.

- **India:** An FTT was introduced in 2004 with a broad base. The rate is 0.1% on equities, 0.025% on intraday transactions, 0.01% on futures, 0.05% on options and 0.0001% on mutual fund shares.
- **Singapore:** An FTT, in the form of a stamp duty, is levied on equity transactions at a rate of 0.2%. The revenue is about 1% of total tax revenue.
- **Malaysia:** An FTT, in the form of a stamp duty, is levied on share transactions of large Malaysian companies at a rate of 0.3%.
- **Pakistan:** The FTT, in the form of a stamp duty, dates back to 1899.

Rest of the world

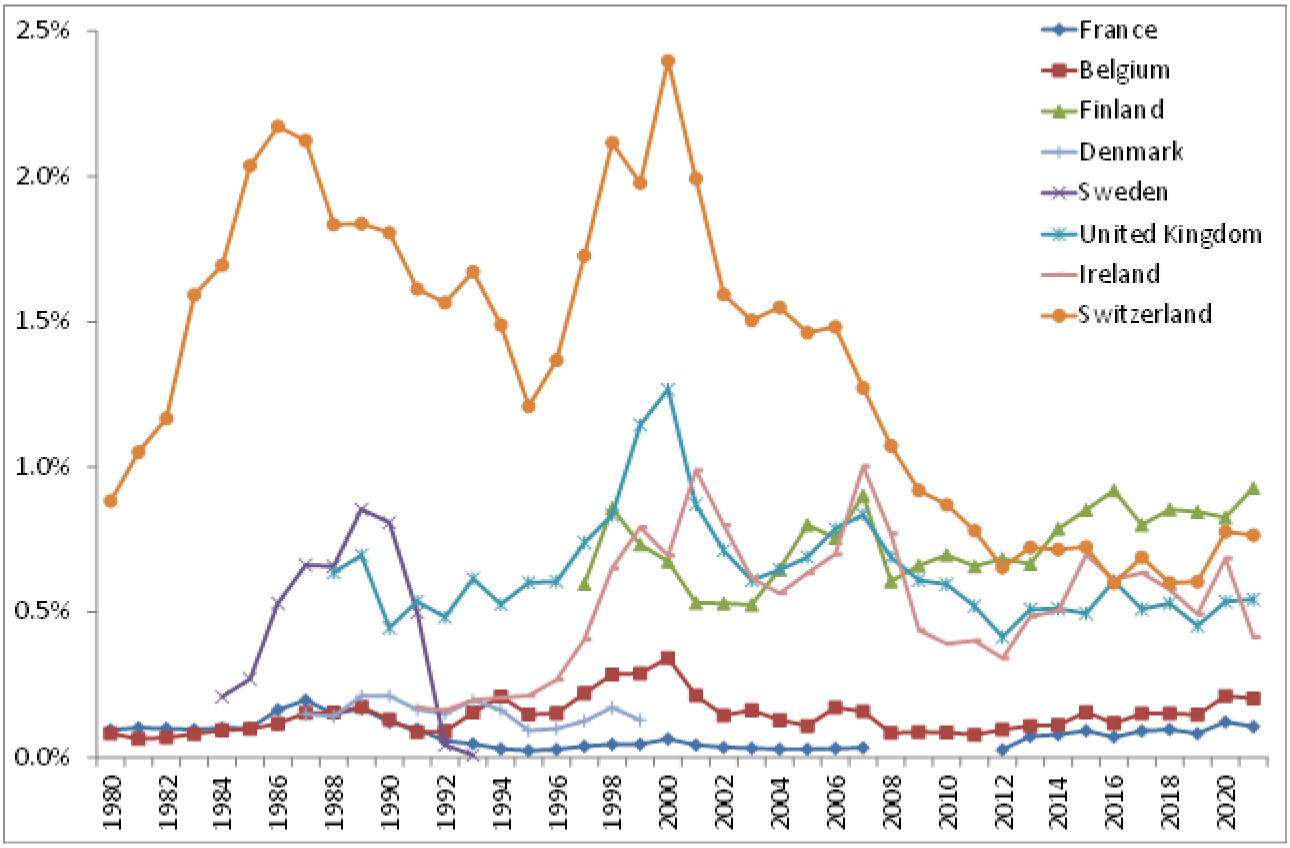
- **South Africa:** Since 2007, the FTT is 0.25% on equity transactions.
- **Brazil:** Created in 2007 (*Imposto sobre Operacoes Financeiras*, IOF) following the Provisional Contribution on Financial Transactions. It is levied on securities transactions at a rate of 1.5%. In theory, the base is very broad: shares, debt securities, foreign exchange, derivatives.

Other measures (abolished or planned)

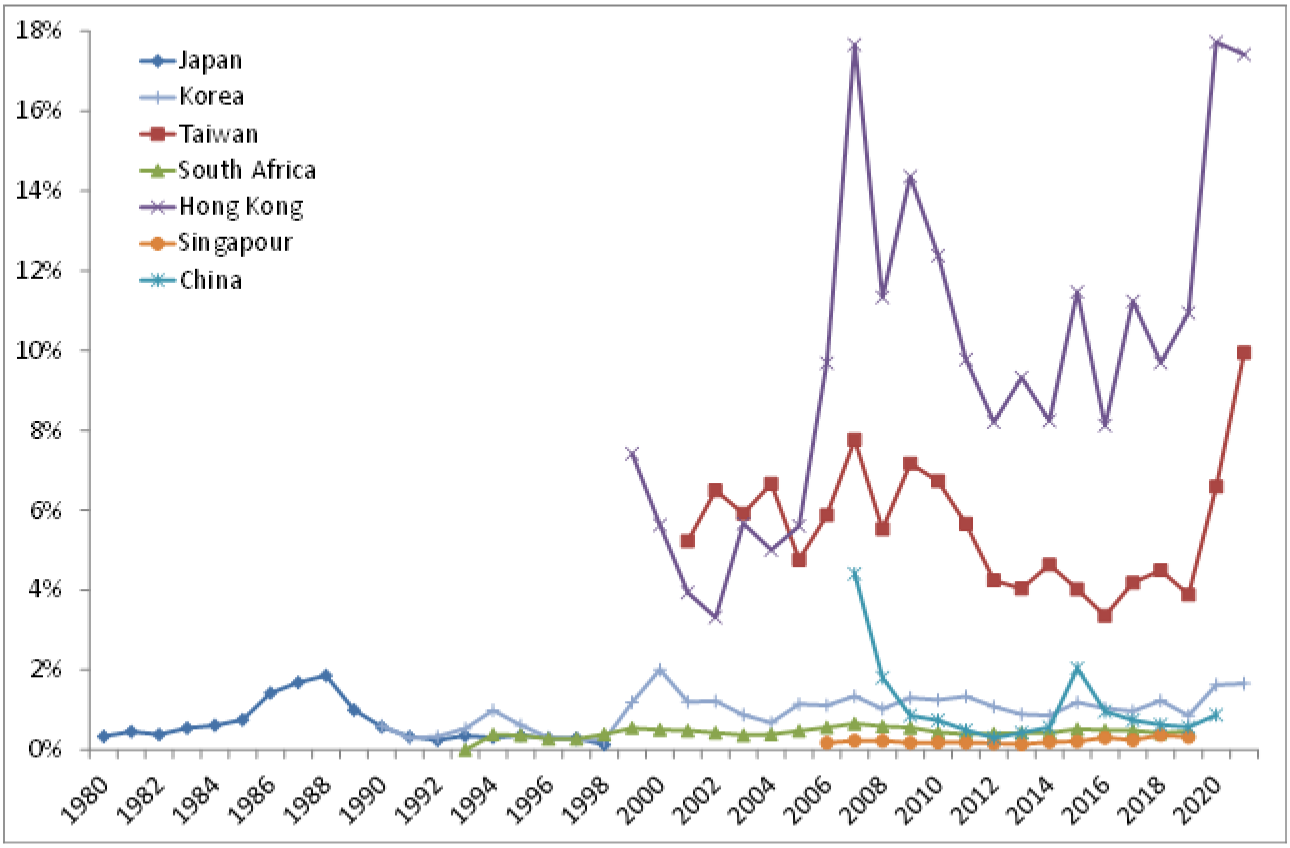
- **United States:** The FTT was introduced in the United States from at least the beginning of the 20th century, at the federal level and for certain states. The federal tax was abolished in 1966 and that of New York in 1981. However, there is still a micro-tax on stock transactions created in 1934 for the benefit of the SEC. In 2023, the tax is $8 for a $1 million transaction (previously $22.9).
- **Sweden:** An FTT existed in Sweden between 1984 and 1991. This tax covered shares and debt securities. In contrast to the British stamp duty, this FTT only applied to transactions carried out by Swedish intermediaries, and caused a flight of activity to London.
- **Europe:** The European Commission proposed an FTT in 2013 as part of an enhanced cooperation procedure with 10 eurozone countries. The tax was to cover equities, debt securities and derivatives.
- **Germany:** FTT abolished in 1991.
- **Austria:** FTT abolished in 2000.
- **Denmark:** FTT abolished in 1999.
- **Norway:** FTT abolished in 1993.
- **Netherlands:** FTT abolished in 1990.
- **Japan:** FTT abolished in 1998.

Figure 4. FTT revenues since 1980

A. Europe



B. Asia



Sources: OECD and national statistics.

Table 2. Estimated tax revenue for TTF, country-by-country

This table shows the expected tax revenues for FTT at the global level, by country. All figures are in billions of euros. The first and second columns show, respectively, the trading volume on regulated markets (Lit-On book) and the total volume across all platforms, as reported by Refinitiv for 2022. The following columns present the tax revenue estimates. We consider two bases (only daily transactions - like the stamp duty - or all transactions) and two nominal rates (0.3% or 0.5%). We assume that two thirds of transactions are intraday and that the extension of the FTT to intraday will lead to a 50% decrease in volumes.

	Volume of transactions		**Stamp duty**		**TTF extended to intraday**	
	Lit	**All**	**0.3%**	**0.5%**	**0.3%**	**0.5%**
Europe	**8,206**	**26,344**	**26.3**	**43.9**	**39.5**	**65.9**
UE27	**5,071**	**17,268**	**17.3**	**28.8**	**25.9**	**43.2**
France	1,057	4,300	4.3	7.2	6.4	10.7
Germany	1,168	4,018	4.0	6.7	6.0	10.0
Austria, Belgium, Luxembourg, Netherlands	991	3,286	3.3	5.5	4.9	8.2
Denmark, Finland, Sweden	879	2,828	2.8	4.7	4.2	7.1
Italy, Spain, Portugal, Greece	803	2,221	1.4	2.3	2.1	3.4
Other UE	173	614	0.6	1.0	0.9	1.5
UK	1,165	4,886	4.9	8.1	7.3	12.2
Switzerland	676	2,193	2.2	3.7	3.3	5.5
Turkey	949	986	1.0	1.6	1.5	2.5
Russia	185	468	0.5	0.8	0.7	1.2
Other Europe	160	544	2.0	3.3	3.0	5.0
North America		**85,496**	**85.5**	**142.5**	**128.2**	**213.7**
USA		80,931	80.9	134.9	121.4	202.3
Canada		4,566	4.6	7.6	6.8	11.4
Africa, Latin America, Middle-East	**1,943**	**2,151**	**2.2**	**3.6**	**3.2**	**5.4**
Brazil	1,102	1,205	1.2	2.0	1.8	3.0
India	412	415	0.4	0.7	0.6	1.0
South Africa	158	241	0.2	0.4	0.4	0.6
Saudi Arabia	194	194	0.2	0.3	0.3	0.5

Mexico	74	93	0.1	0.2	0.1	0.2
Argentina	3	3	0.0	0.0	0.0	0.0
Asia-Pacific	**45,476**	**47,982**	**48.0**	**80.0**	**72.0**	**120.0**
China	32,227	32,311	32.3	53.9	48.5	80.8
Japan	5,302	6,933	6.9	11.6	10.4	17.3
Korea	3,868	4,095	4.1	6.8	6.1	10.2
Taiwan	2,064	2,223	2.2	3.7	3.3	5.6
Australia		1,000	1.0	1.7	1.5	2.5
Hong Kong	370	442	0.4	0.7	0.7	1.1
Indonesia	194	232	0.2	0.4	0.3	0.6
Singapore	12	15	0.0	0.0	0.0	0.0
World		**161,974**	**162.0**	**270.0**	**243.0**	**404.9**
G7		**106,480**	**106.5**	**177.5**	**159.7**	**266.2**
BRICS		**34,640**	**34.6**	**57.7**	**52.0**	**86.6**
G20		**155,825**	**155.8**	**259.7**	**233.7**	**389.6**
Other countries		**6,149**	**6.1**	**10.2**	**9.2**	**15.4**

Source: Refinitiv (Monthly Market Share) data for trading volumes (2022), except for Australia. Data is for the "ordinary" asset class only; filtered by country/region of domicile; all venues (On Book - Lit & LIS, Auction, Dark RFPT, Periodic Auctions, On Exchange Immediate & Non Immediate, On Exchange NTW Immediate & Non Immediate, On Exchange LIS Deferred, On Exchange NPFT/TNCP, OTC Immediate & Non Immediate, OTC LIS Deferred, OTC NPFT/TNCP, SI Immediate & Non Immediate, SI LIS Deferred, SI NPFT/TNCP), domestic or foreign ("country/region of venue"), are considered. Calculations: author.