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**THE FINANCIAL TRANSACTION  
TAX: A REALLY GOOD IDEA**

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## Summary

The idea of a financial transaction tax (FTT) is both popular and controversial. It raises complex technical concerns (financial, economic and legal) and is highly symbolic.

FTT is often presented as either a fanciful utopia that is impossible to implement, or as an insurmountable handicap for financial marketplaces. It is therefore worth remembering that stock traded have been taxed in the United Kingdom since the 17th century, in the form of a stamp duty that brings in nearly €4 billion each year, and has not impeded the City's development. Nearly every developed country has adopted such a tax at some stage and more than thirty countries worldwide currently impose a tax on financial transactions, including Switzerland, Hong Kong and Taiwan. The European FTT proposal is more ambitious than the existing taxes, especially as it expands the base to cover derivatives and high-frequency trading. There is no reason to believe that FTT is necessarily a handicap, however.

If FTT is so popular, this is no doubt a response to the explosion in transaction volumes consecutive to the financial deregulation since the end of the 1970s. This has long been applauded by the majority of economists, who see it as a powerful growth driver. Between 1975 and 2015, whereas global GDP increased 15-fold, stock market capitalisation increased 50 times over and total financial transactions rose by a factor of 300. The question now is whether or not the growth in financial transactions is excessive. The potential benefits in terms of liquidity are minimal and come at the price of less transparency and increased distrust of the financial markets.

In practice, the impact of FTTs is modest. Overall, empirical research shows a fall in short-term transaction volumes. With regard to the introduction of the FTT in France in 2012, for example, the fall is estimated at between 10% and 20%. This decrease is significant, but is limited compared with the upward trend in stock traded: in 2015 alone, for example, transactions in French shares rose by nearly 30%. This therefore implies that, in practice, FTTs limit the growth of the financial markets very little; they delayed this expansion by a few quarters at the most. There are also very few signs of a significant impact on the liquidity of securities. FTTs, at least as they stand today, also do not seem to increase or decrease market volatility. In other words, they are neither the catastrophe feared by some, nor the panacea hoped for by others.

FTT's design is of course of fundamental importance. Concerns about the possible relocation of financial activity would appear overdone, however. The dual principle of place of issue and place of residence creates the conditions for a broadly applicable tax, regardless of the transaction's origin. FTTs currently only apply to transfer of ownership, which therefore excludes intra-day transactions. As a result, between 80% and 90% of stock traded are exempt from FTT in France or the United Kingdom. Taxing intra-day transactions requires the thorough revision of the collect system to obtain reliable information about transactions, including high-frequency trades and/or trades on alternative trading platforms.

Ultimately, it seems that FTT has the attributes that make a good tax: its distorting effects are slight, tax receipts are potentially high and collection costs are minimal; it also has a redistributive effect. An equivalent of the UK Stamp duty, extended to the world's main countries, would raise \$100 billion a year, despite its many exemptions. Its extension to derivative instruments and intra-day transactions would bring in additional revenue, while improving transparency.

## INTRODUCTION

In 2011, the European Commission officially presented its financial transaction tax proposal. This highly ambitious proposal received an enthusiastic response but, after six years of discussions, it has still not come to fruition. The negotiations have been drawn out from meeting to meeting.<sup>1</sup> In the meantime, in 2012 France, followed by Italy in 2013, unilaterally decided to tax stock market transactions. In each case, there was an outcry, but there were no notable negative impacts on the functioning of these markets. In the United States, it became a campaign theme during the presidential elections. The issue was then raised at the COP 21 in Paris, before being dropped.

The idea has therefore been hotly debated for six years now. The debates have proved far from fruitful, but empirical evidence is stacking up and arguments for and against are more clear-cut. The financial transaction tax will continue to be the matter of much discussion in the years to come, and not without reason. Fundamentally, taxes currently in force have negligible impact on market liquidity or stability, as will be demonstrated hereafter, and this is also likely to apply to future initiatives. Nonetheless, this type of tax is highly symbolic, since it shows a will to reform the financial system, abandon the dogma of market efficiency, and breathe new life into the issue of taxation in a globalised world.

### FTT: a very popular idea...

Whether it is referred to as the "Tobin Tax", the "Robin Hood Tax" or "FTT", the idea of taxing financial transactions is most popular. In the autumn of 2015, François Hollande received a petition, with more than a million signatories, in support of such an initiative.<sup>2</sup> The opinion polls are also unanimous: the vast majority of the public opinion is in favour of a mandatory, very low rate of tax on financial transactions. This is the case for two-thirds of Europeans, including three-quarters of French, Germans and Italians.<sup>3</sup> The same degree of support can be found in most wealthy countries, from Canada to the United States or Japan.<sup>4</sup>

FTT's underlying principle is as simple as it is appealing: given the huge number of financial transactions, only an extremely low rate of tax would need to be applied to raise substantial tax receipts, without any undesired effects on the functioning of the markets or the economy. A broad tax base and a low tax rate are generally two attractive components. This explains why such taxes were first introduced so long ago (shortly after stock markets were created) and have since been introduced in so many countries (including leading financial marketplaces).

FTT's Proponents argue that it could be used to put a brake on the expansion of the capital markets, slow short-term speculation and contain high-frequency trading.<sup>5</sup> The objective takes various forms, but the ultimate aim is always the same: trying to reduce the financial markets' toll imposed by certain non-productive activities of doubtful social utility.

FTTs can also be effective instruments for raising new tax receipts. Taxes currently in force go straight into the state budget, but FTT's most ardent defenders, which include NGOs such as Attac, Oxfam and Stamp-out-Poverty, argue in favour of a specific allocation to development aid or to combat climate change.

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<sup>1</sup> See Schulmeister, S., 2015, "The struggle over the Financial Transactions Tax. A politico-economic farce", *Revue de l'OFCE* 5(141), 15-55.

<sup>2</sup> [http://www.oxfamfrance.org/communiqué-presse/taxe-sur-transactions-financieres/1-million-soutiens-taxe-ambitieuse-sur?utm\\_source=oxf.am&utm\\_medium=ZWHn&utm\\_content=redirect](http://www.oxfamfrance.org/communiqué-presse/taxe-sur-transactions-financieres/1-million-soutiens-taxe-ambitieuse-sur?utm_source=oxf.am&utm_medium=ZWHn&utm_content=redirect)

<sup>3</sup> Eurobaromètre Standard No. 74 (Dec. 2010) to 81 (June 2014).

<sup>4</sup> ITUC Global Poll 2012. TNS Opinion.

<sup>5</sup> High-frequency trading (or HFT) consists of placing a multitude of orders in record time (around a millisecond) using algorithms and high-powered computers. High-frequency traders also often use colocation services offered by stock exchanges to install their IT servers as closely as possible and further increase the speed with which their orders are executed. According to a report published by the European Securities and Markets Authority (ESMA) in 2014, high-frequency trading accounted for nearly half of total transactions in Europe and for more than two-thirds of the number of orders.

### ... but controversial

FTT is therefore, without doubt, the most popular tax in the world. However, despite its popularity, it is also particularly controversial. FTT's opponents claim that it would be counter-productive: far from reducing market instability, the tax would in fact feed volatility by reducing liquidity. Criticisms are also often hackneyed. It is described as nothing less than "*madness*"<sup>6</sup>, "*suicide*"<sup>7</sup>, a "*grave mistake*"<sup>8</sup>, etc. by its opponents; and those who defend it are often considered to be naive, or even incompetent or populist. This exaggeration is a curious phenomenon, as it completely ignores past experience.<sup>9</sup>

In any case, certain fears should of course be taken seriously, but with measure. As with any tax, FTT creates distortions, but these costs should be compared with the tax's benefits. Above all, everything depends on how an FTT is designed, whereas most of its opponents completely reject the idea in principle, with little or no consideration for its design.

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This paper argues firmly in favour of the taxation of financial transactions, and is in support for the European Commission's proposal. Nonetheless, the discussion is intended to be thorough, objective and measured. It is set out in five parts.

- Part two reminds that the taxation of financial transactions is not a new idea, has been adopted in many countries and is still in force today in several leading financial marketplaces. There is therefore no reason to believe that FTTs are fundamentally incompatible with the development of the financial markets, which, furthermore, have grown considerably. Total stock market transactions have risen twenty times faster than global GDP in forty years; in France, the number of trades has multiplied by 25 in so many years. The fact that trades are now initiated within the space of a millisecond raises legitimate questions about the social usefulness of such volumes of activity in financial markets.
- Part three examines the impact on the markets' liquidity and volatility of adopting FTT. It has emerged from academic research that such a tax reduces transaction volumes, by around 20%, without significant effect on stock market liquidity and volatility. FTTs – at least in their current form – are not particularly effective as an instrument of financial regulation, however they neither hinder the financing of companies, nor do they make them less competitive.
- Part four looks in detail at FTT design, and particularly the issues of the tax scope and base, and shows how the European Commission's proposal has been designed to effectively adapt to financial globalisation and limit relocation phenomena. The implementation of an international financial transaction tax above all comes up against the lack of cooperation between countries in fiscal matters. Technical debate is currently mainly focused on the taxation of derivatives and the inclusion of intra-day transactions, which these days make up the very large majority of volumes, but are effectively exempt from the taxes in force.
- Part five explores the issue of FTT from a fiscal viewpoint. The FTT, with its broad base and low rate, offers many advantages: it is a tax with a limited distorting effect, which potentially generates high revenue with minimum collection costs. A UK-style Stamp duty would bring in around \$100 billion a year if it were extended to the main countries in the world, despite its many exemptions. This amount

<sup>6</sup> David Cameron, the former British Prime Minister, *The Telegraph*, 26 January 2012.

<sup>7</sup> Lorenzo Bini Smaghi, chairman of Société générale, *Les Echos*, 19 October 2015.

<sup>8</sup> Open letter signed by seven leading experts from the banking and financial sector, including Jacques de Larosière (former managing director of the IMF) and Jean-Claude Trichet (former president of the European Central Bank).  
<http://www.paris-europlace.net/files/file5716477.pdf>

<sup>9</sup> For the case put by the banks, see J. Couppey-Soubeyran, "Blablabanque : Le discours de l'inaction", Ed. Michalon, Sept. 2015.

could be considerably increased by adapting the FTT collect system to include intra-day transactions in derivative instruments, which would also result in improved transparency.

## 1. FTT: A SIMPLE AND WIDESPREAD TAX

FTT has a long history, dating back almost to the creation of the stock markets themselves. It has already been applied continuously in the United Kingdom for more than three centuries, and nearly every country has at some point introduced FTT, in some form or another. Until the end of the 20th century, FTT was common to the main financial marketplaces, but with the globalisation and deregulation of markets, many industrialised countries repealed this tax: the United-States in 1966, Germany in 1991, Japan in 1999, and so on. At the same time, most of emerging countries in Latin America and Asia introduced FTT.

Although it seemed to be slowly disappearing, at least in the West, the crisis created renewed interest in FTTs. More than thirty countries now have adopted FTT and a dozen others are considering introducing one.

### 1.1. A BRIEF OVERVIEW

#### ■ In the United Kingdom, stamp duty is the oldest form of tax

The most well-known example of FTT is perhaps British stamp duty. This was introduced in 1694 and has never been discontinued since. It would appear to be the oldest tax to still be in force in the United Kingdom.

More than three centuries after its creation, stamp duty serves as a model. In practice, the UK Treasury levies a 0.5% tax on purchases of shares issued by British companies. This tax is payable regardless of the counterparties' nationality or place of residence, in other words, whether or not they are British. Share issues are not taxed, however, and nor are market-making activities that contribute to the liquidity of securities. Since 2014, the shares of small companies with high growth potential have also been exempt.<sup>10</sup>

The taxation of financial transactions in the UK brings the country between £2.5 billion and £4 billion in tax revenues each year. The collection costs are also modest, at around only 0.02 pence per pound sterling collected, i.e. a cost that is 75 times lower than for income tax.<sup>11</sup>

Stamp duty's success is due to the application of the place of issuance principle. In other words, it is the nationality of the company that issues the shares that geographically determines the tax's scope, rather than the nationality of the counterparties or intermediaries that carry out the transaction. Its status as a stamp duty also offers a strong and enforceable legal framework. The tax is relatively difficult to avoid, which limits tax evasion. No precise data is available on this issue, but more than half of receipts are apparently paid by foreigners.

Many countries, including the British Empire's former colonies and protectorates, such as Ireland, South Africa, Hong Kong and Zimbabwe, have inherited this stamp duty system and therefore still have FTT.

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<sup>10</sup> Practically speaking, tax collection is based on two distinct mechanisms depending on whether the shares are bought electronically (Stamp Duty Reserve Tax, SDRT) or not (Stamp Duty on Shares). <https://www.gov.uk/topic/business-tax/stamp-duty-on-shares>

<sup>11</sup> M. Hawkins and J. McCrae, 2002, "Stamp duty on share transactions: Is there a case for change?", *Institute for fiscal studies*.

#### ■ Sweden: a poorly designed tax

In January 1984, Sweden decided to introduce a 0.5% tax on the purchase or sale of shares. In July 1986, the rate was doubled, and in January 1989 another tax was created for debt securities (negotiable debt securities and bonds) with a rate from 0.002% to 0.003% depending on the maturity. This tax was abolished in April 1990 and the tax on shares at the end of 1991, after the rate was lowered to its initial rate of 0.5% at the start of the year.

This FTT was a failure: transaction volumes on the Stockholm Stock Exchange fell after 1986, whereas they were on the rise in other countries. The tax receipts were fairly modest, amounting to around 6 billion Swedish kronor (i.e. around 0.8% of total tax receipts).

The failure of Swedish FTT was due mainly to the resulting relocation, particularly to The City. The tax in fact only applied to transactions carried out by Swedish intermediaries, which made it very easy to avoid. According to Umlauf (1993), more than half of the trades in shares in Swedish large cap listed companies migrated to London at the end of the 1980s. This FTT did not cause an increase in instability, however. The transactions simply migrated from one marketplace to another, but there was no significant impact on volatility, contrary to what is often reported.

Opinions are unanimous. The Swedish FTT was poorly designed given financial deregulation; it is an example of what not to do. It is only one of many examples, however.

#### ■ In France: from IOB to FTT

France introduced the *Impôt sur les opérations de bourse* (IOB) in 1893, following several financial scandals.<sup>12</sup> IOB was amended many times, but remained in force for more than a century, before being abandoned in 2008. The year before its repeal, in 2007, the rate was 0.3% for transactions of less than €153,000 and 0.15% for larger trades.<sup>13</sup>

Conversely to the United Kingdom, but similarly to Sweden, IOB applied to transactions carried out by financial intermediaries established in France, whether or not these transactions involved the securities of French companies.<sup>14</sup> With the deregulation of capital flows in the 1980s, the tax became easy to avoid. Starting from the 2000s, IOB only brought in between €200 million and €300 million a year, despite a very sharp increase in transaction volumes. Given the above factors, IOB was repealed in 2008<sup>15</sup>, the main aim being to make the Paris financial marketplace more competitive.<sup>16</sup>

Like Swedish FTT, IOB was poorly designed in an environment of financial deregulation. Its repeal in 2008 did not have the hoped for positive effects, however: there was no significant impact either on the liquidity of the securities listed on Euronext Paris, or on their volatility.<sup>17</sup>

Four years (and a global financial crisis) after the repeal of the IOB, France introduced a new FTT in August 2012. This tax covers trades in shares, or similar securities, issued by companies whose registered office is in France

<sup>12</sup> [http://www.lemonde.fr/idees/article/2012/01/16/les-enjeux-de-la-taxe-tobin\\_1630126\\_3232.html](http://www.lemonde.fr/idees/article/2012/01/16/les-enjeux-de-la-taxe-tobin_1630126_3232.html)

<sup>13</sup> IOB was combined with a tax allowance of €23 (i.e. a tax exemption on transactions below €7,667) and capped to €610. There were some exemptions, however. *Code général des impôts*, Articles 978, 979 and 980bis.

<sup>14</sup> *Code général des impôts*, Article 982 and DB7 N12.

<sup>15</sup> Loi n°2007-1822, Article 11, 24 décembre, 2007.

<sup>16</sup> See, for instance, Ph. Marini : "le Haut Comité de place (...) a pu constater que cet impôt était un frein au développement de la place de Paris. L'impôt sur les opérations de bourse pèse en effet sur les frais de transaction et incite les investisseurs à réaliser depuis l'étranger leurs transactions sur des valeurs cotées sur Euronext via des intermédiaires financiers non établis en France, ce qui est très aisé." ("the Haut Comité de place (...) could observe that this tax was weighing on the development of the Paris marketplace. The IOB indeed increases the transaction fees and incentivizes investors to realize their transactions on securities listed on Euronext from abroad via financial intermediaries not registered in France, which is most straightforward.") Débats Sénat première lecture, séance du vendredi 23 novembre 2007. [http://www.senat.fr/commission/fin/pjlf2008/06\\_bisa/06\\_bisa0.html](http://www.senat.fr/commission/fin/pjlf2008/06_bisa/06_bisa0.html)

<sup>17</sup> Capelle-Blancard G., 2017, "The abolition of the 'impôt sur les opérations de bourse' did not foster the French stock market", *Finance Research Letters*, 17, 257-266.

and whose stock market capitalisation exceeds €1 billion.<sup>18</sup> Its rate is 0.3% (the rate was initially 0.1%, but was doubled before its implementation in 2012, before being increased again in 2017). A hundred or so companies are liable. This FTT resembles British stamp duty much more closely than IOB or Swedish FTT and applies the place of issuance principle. It is payable by all participants, regardless of nationality or location.

This tax only applies to transactions that result in an effective transfer of ownership, and so it excludes purchases and sales carried out within the same day, and therefore high-frequency trades in particular.

FTT Tax revenues in France are modest, at less than €1 billion. This represents around 0.2% of the country's total tax receipts (and, incidentally, more or less the same amount levied on the proceeds of gambling in casinos). As a comparison, this is three to four times less than the tax receipts from British stamp duty.

The final assessment is therefore somewhat mixed. French FTT is clearly better adapted than IOB, as the application of the place of issuance principle gives it a solid base. One year after FTT was adopted in France, Italy also adopted a largely similar tax. In the next section, we will show that these taxes had no significant negative effects on market liquidity, and even less so on volatility. The many exemptions, and the exemption of intra-day transactions, greatly limit its yield, however. This point is covered in the section dedicated to FTT design.

#### ■ Switzerland, Hong Kong and Taiwan: leading financial marketplaces

Almost every European country abandoned FTT starting from the 1990s (Spain in 1988, the Netherlands in 1990, Germany and Sweden in 1991, Norway in 1993, Portugal in 1996, Italy in 1998, Denmark in 1999 and Austria in 2000). Counter-examples include the United Kingdom, Belgium<sup>19</sup>, Ireland<sup>20</sup> and Switzerland<sup>21</sup>, although these are all countries that are not known for heavy tax regimes.

At the same time, many emerging countries introduced FTT, mainly in Latin America and Asia. Japan admittedly scrapped FTT in 1999, but South Korea, Hong Kong, Taiwan and Singapore have retained their taxes. Again, these countries are known for having a fairly low overall rate of mandatory taxation. They are also some of the most buoyant emerging financial marketplaces.

Figure 1 shows the revenue generated since 1980 by various financial transaction taxes, as a percentage of total tax receipts. Switzerland, Ireland and the United Kingdom proportionally collect the most revenue from the taxation of financial transactions in Europe (Figure 1a). In Asia (Figure 1b), Hong Kong and Taiwan collect between 5% and 10% of their overall tax receipts from such a tax.

<sup>18</sup> Article 5 of the amendment to budget act for 2012 (*Loi de finances rectificative pour 2012*, loi n°2012-354).

<sup>19</sup> In Belgium, the *Taxe sur les opérations de bourse* (TOB) exists since 1913. It is similar to the former French 'Impôt sur les opérations de bourse' (Articles 120 du Code des taxes et droits divers). In the aftermath of the financial crisis, the tax rate was increased, temporarily first, and then permanently. It is currently set at 0.27% for share transactions on the secondary market, with a cap at €2,000, at 1.32% for funds, and at 0.09% for bonds. The tax receipts are below €100 million.

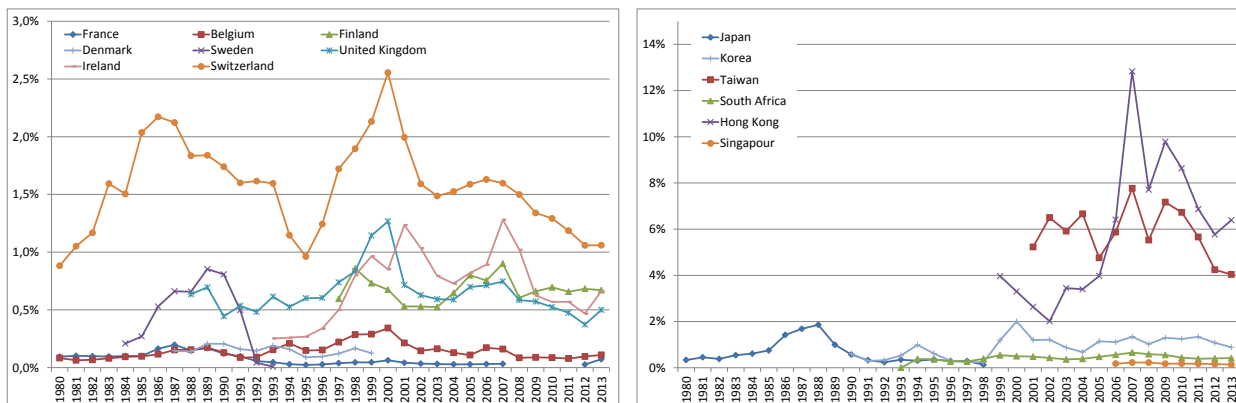
<sup>20</sup> This tax was introduced in 1937 and is similar to the UK *stamp duty*. Its rate is 1% (*Stamp Duties Consolidation Act 1999*). In 2013, the tax revenue amounted to €250 million. [www.revenue.ie/en/about/publications/statistical-reports.html](http://www.revenue.ie/en/about/publications/statistical-reports.html)

<sup>21</sup> The *Umsatzabgabe* was created in 1918, and reformed in 1973. It concerns the transactions on securities operated by a licensed Swiss financial intermediary (the *commerçant de titres*). The tax rates are 0.15% for Swiss securities, and 0.3% for foreign securities. This tax generates a revenue of around CHF 3 billion.

<https://www.admin.ch/opc/fr/classified-compilation/19730173/index.html>.



**Figure 1: Comparison of FTT-related revenue in different countries**  
(as a % of total tax receipts)



Sources: OECD (DOI: 10.1787/tax-data-fr) except for the United Kingdom (HM Revenue and Customs, European Commission (SEC(2011) 1102 final, Vol. 9). Calculation: author.

What conclusions can be drawn from this overview?

- **FTTs exist in a wide variety of different countries and are far from being new. This clearly has not prevented the development of marketplaces such as London, Switzerland and Hong Kong, which rank among the largest in the world. At the least, the idea that FTTs are utopian, unrealistic and impractical is invalid.**
- **Financial crises occur no more or less frequently in countries that have FTT than in other places. Also note that FTTs have never really acted as a brake on stock markets: the two most well-known speculative bubbles of the 20th century, in the United States before the major stock market crash of 1929 and in Japan in the 1980s, happened in countries that have FTT. FTTs cannot effectively limit the overheating of markets.**
- **The outcome of FTTs varies greatly from one country to the next. For most countries that adopt one, it is a relatively stable tax resource that creates few distortions. The experiment failed in Sweden, on the other hand. Close attention must therefore be paid to the conditions of taxation.**

#### **Box: Controversies surrounding the European FTT**

On 28 September 2011, the European Commission adopted a draft directive on a proposal for a FTT covering the whole of the European Union. This was the first time that such an initiative had been launched at a supranational level. One year later, it was clear that the unanimous approval required for anything to do with taxation would not be reached. The discussions nevertheless opened the door to the possibility of enhanced cooperation between member states in favour of the proposal. The decision authorising eleven member states to establish a common FTT system, by means of enhanced cooperation, was adopted on 12 December 2012 by the European Parliament and 22 January 2013 by the Council of the EU. The eleven countries involved were Germany, Austria, Belgium, Spain, Estonia, France, Greece, Italy, Portugal, Slovakia and Slovenia. Independently of the issues related to FTT, the use of enhanced cooperation would be a first in tax matters and would open the way to better tax harmonisation in Europe.

The European Commission published its proposal on 14 February 2013. The initial proposal was ambitious: it provided for a 0.1% tax on share and bond transactions and a 0.01% tax on derivative transactions. According to the European Commission's proposal, the tax would apply if at least one of the participants in a transaction was established in one of the countries that had adopted it ("place of residence principle") or if the transaction involved a financial instrument issued in one of these countries ("place of issuance principle"), regardless of where the transaction took place. There was also apparently no question of exempting either transactions between financial institutions (banks, insurance companies, investment funds, hedge funds, etc.) or intra-day transactions. The estimated revenue would be around €30 billion to €35 billion a year.

This proposal sparked a number of heated debates. The tax was first announced for 2014, then promised for 2015, then postponed until 2016. In the meantime, the idea of taxing bond transactions seems to have been abandoned and market-makers will probably be exempted. Estonia has also thrown in the towel, bearing in mind that at least nine countries are needed for an enhanced cooperation arrangement. The discussions are therefore endless and we still do not know whether the proposal will come to fruition...

## 1.2. TOO MUCH FINANCE?

If FTT is so popular, this is clearly a reaction to the explosion in transaction volumes seen with financial deregulation since the end of the 1970s. This has long been lauded by the majority of economists, who see it as a powerful growth driver. The question that is now being asked, however, is whether the financial markets have expanded "beyond a socially reasonable size".<sup>22</sup>

### ■ The development of financial transactions in figures

**Between 1975 and 2015, worldwide:**

- **GDP was multiplied by 15<sup>23</sup>;**
- **The stock market capitalisation increased 50 times over<sup>24</sup>;**
- **Total stock market transactions rose 300-fold<sup>25</sup>.**

In forty years, the total financial transactions to GDP ratio rose from 5% to between 125% and 180%.<sup>26</sup> Over the same period, the total stock market transactions to stock market capitalisation ratio, i.e. the turnover rate, rose from 25% to between approximately 150% and 300%.

As Figure 2 shows, there are three distinct periods.

- The first period, between 1975 and 1995, when total stock market transactions increased very quickly (+20% per year on average), but stayed below 20% of GDP.
- The second period, between 1995 and 2005, when transaction growth was a little less high (+17% per year on average), but volumes reached more than 100% of GDP, peaking at nearly 150% in 2000.
- The third period, between 2005 and 2015, when transaction growth further slowed (+7% per year on average), but very unsteadily, and was very difficult to assess because of the increase in the number of trading platforms.

<sup>22</sup> This quotation refers to a 2009 speech by Lord Adair Turner, then president of the British Financial Conduct Authority (FSA), who declared that the financial sector in the United Kingdom was "beyond a socially reasonable size". See infra.

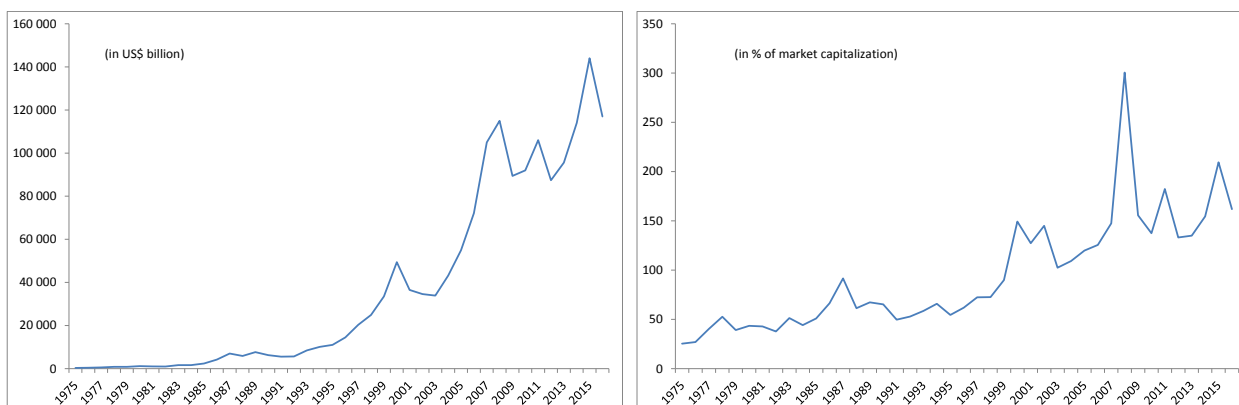
<sup>23</sup> The world GDP was below US\$ 6,000 billion in 1974, and about US\$ 80,000 billion in 2014. Source: World Bank.

<sup>24</sup> The world market capitalization was lower than US\$ 1,300 billion in 1974, and about US\$ 64,000 billion in 2014. Source: World Federation of Exchanges.

<sup>25</sup> The total value of share trading was US\$ 300 billion in 1974, and more than US\$ 100,000 billion in 2014. Source: World Federation of Exchanges & Thomson Reuters (Monthly Market Share Reports).

<sup>26</sup> The ratios presented here are orders of magnitude because: 1) amounts can vary greatly from one year to the next depending on the valuation of the shares; 2) sources are sometimes difficult to reconcile; 3) today, with the development of alternative trading platforms, it has become very difficult to assess the total amount of transactions. See Capelle-Blancard, G., 2018, "What is the point of (the hundreds of thousands of billions of) stock transactions?", *Comparative Economic Studies*, forthcoming.

**Figure 2. Total value of stock traded worldwide (in USD and in %)**



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

The trend was similar in France. The total transactions on the Paris Stock Exchange came to €3.5 billion in 1970, €9 billion in 1980, more than €100 billion in 1990, more than €1,000 billion in 2000, and €1,250 billion in 2015, to which the same again must be added to take into account trades carried out on alternative platforms, making a total of around €2,500 billion. In France, total stock market transactions have risen 25 times over in the last 25 years.

The increase in transaction volumes does not apply solely to stock market transactions of course. The same trend can be seen for forex and derivative transactions (see Figure 3). In April 2013<sup>27</sup>, more than \$5,000 billion a day were traded on the forex market, according to a BIS survey.<sup>28</sup> This forex transaction volume is out of all proportion with GDP or with total international exchanges of goods and services. In the mid-1970s, volumes on the forex market amounted to around 20% of global GDP. Within ten years, the ratio had reversed. Volumes on the forex market are equivalent to more than fifteen times global GDP and sixty-five times global trade, although their only main purpose is the settlement of trades and the covering of the associated risks. This growth in the forex market is largely due to the development of arbitrages<sup>29</sup> and hedging techniques based on the use of derivatives<sup>30</sup>. These transactions explain why the total financial transactions exceed the total goods traded. There are strong grounds to believe that the development of forex transactions is excessive, however.

Derivatives have developed even more spectacularly, for all underlying assets. These contracts are not new (they have existed since Antiquity), but they didn't really start to grow until the 1970s-1980s.<sup>31</sup> According to the BIS, in 2015, the notional amount outstanding for derivatives totalled more than \$500,000 billion (after peaking at nearly \$800,000 billion in 2013). This amount was no more than \$1,000 billion in the 1980s. Admittedly, the notional amount outstanding is not necessarily representative of the amounts in play. The replacement cost for existing contracts (gross market values) nevertheless came to more than \$15,000 billion in 2015.

<sup>27</sup> The results from the next triennial analysis will be published in Fall 2016.

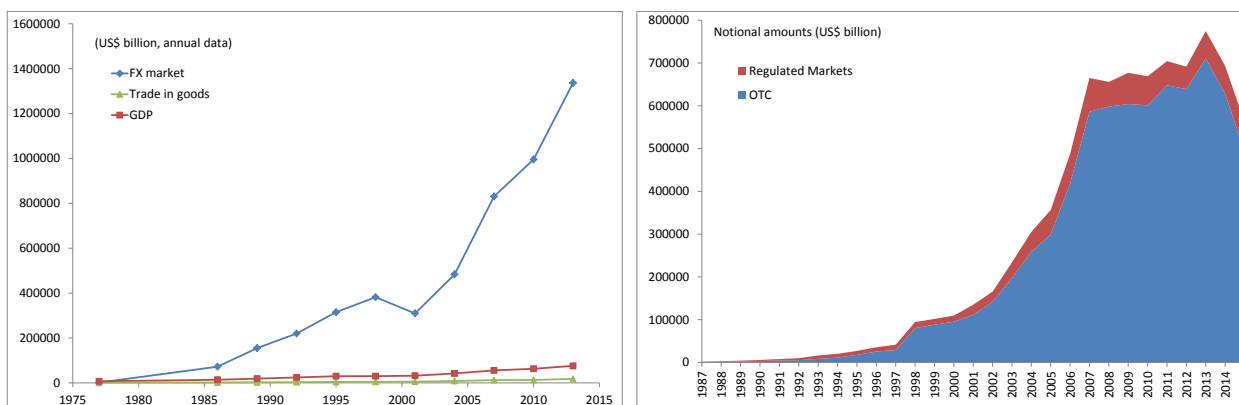
<sup>28</sup> King M. R. and Rime D., 2010, "The \$4 trillion question: what explains FX growth since the 2007 survey?", *BIS Quarterly Review*, December.

<sup>29</sup> Arbitrages consist in taking advantage of price differences that can emerge between otherwise similar assets. By doing so, arbitrageurs contribute to market efficiency. Unit gains are generally very small, yet the nominal amounts on which the transactions are done are often very large.

<sup>30</sup> An exchange rate hedge operation for an exporting company generally results in a large number of operations on the currency market. Financial institutions that offer exchange rate risk management instruments to their clients (futures, options, etc.) hedge their own position by carrying out multiple market operations, following the principles set out by Fisher Black, Myron Sholes and Robert C. Merton in the 1970's (their work was recognized and rewarded by the Nobel Foundation in 1997). In theory, to obtain a perfect hedge, an infinity of operations would be needed. Practically speaking, this would be obviously costly, yet banks still manage their risk exposure through very frequent interventions.

<sup>31</sup> G. Capelle-Blancard, 2010, "Are Derivatives Dangerous?", *International Economics*, 123, 65-88.

**Figure 3: Development of transactions on the forex and derivative markets**



Sources: forex markets: BIS triennial surveys (pre-1989 estimates based on the data for the United States); GDP: IMF; trades: World Bank. ISDA Market Survey until 1997, then the BIS (semi-annual OTC derivatives statistics) for the OTC markets; BIS (exchange-traded derivatives) for organised markets. Compilation: author.

Technological advances and the deregulation of the markets have contributed to this explosion in transaction volumes by lowering transaction costs.

The fall in transaction costs on the stock markets is not very well documented in fact. The first difficulty is that estimates are based on proprietary data, whose availability is limited, and which are difficult to compare over time and between countries. The second problem lies in defining transaction costs: implicit costs, namely the bid-ask spread, the timing difference between prices posted ex ante and the price realised ex post (market impact), and the opportunity costs relating to the order processing time and orders that are not executed, must be calculated in addition to explicit costs, such as fees.

According to Greenwich Associates, fees amounted to around fifteen cents per share in the 1970s for institutional investors, and steadily fell to less than 5 cents per share in the mid-2000s. These fees are only the tip of the iceberg, however. According to Robert Schwartz<sup>32</sup>, in the mid-2000s, the total cost was equal to 1.57%, i.e. approximately 47 cents per \$30 share. Fees account for only 17 basis points of this total, in other words 5 cents, whereas the implicit costs are eight times higher (market impact: 34 basis points, 10 cents; opportunity costs: 106 basis points, 32 cents).<sup>33</sup>

Ultimately, transaction costs have indeed fallen, and especially the explicit fee-based portion. They stand at around 20 to 100 basis points for institutional investors. Note that 20 basis points is also the nominal rate of FTT in France, for example.

#### ■ What about social usefulness?

For a long time, economists were most enthusiastic about the development of transaction volumes. Academic works on macroeconomics described financial development, of which the increase in stock market transactions was a key indicator, as a vital driver of economic growth.<sup>34</sup> Likewise, at microeconomic level, the utmost was done to boost the stock market's liquidity, based on the idea that this could only improve information efficiency and market resilience.

<sup>32</sup> Schwartz, R., 2004, "Equity Markets in Action: The Fundamentals of Liquidity, Market Structure & Trading", John Wiley & Sons, p. 66.

<sup>33</sup> For international comparison, see Domowitz, I., J. Glen and A. Madhavan, 2001, "Liquidity, Volatility, and Equity Trading Costs", *International Finance*, 4(2), 221-255; For the UK, Brogaard, J., T. Hendershott, S. Hunt and C. Ysusi, 2014, "High-Frequency Trading and the Execution Costs of Institutional Investors", *The Financial Review*, 49, 345-369.

<sup>34</sup> See Boucher, Ch., G. Capelle-Blancard, J. Couppey-Soubeyran and O. Havrylchuk, 2012, Quand la finance ne sert plus la croissance, dans « L'économie mondiale 2013 », *La découverte*; and the special issue *Revue d'Economie Financière*, 127, 2017.

Abundant financing (high quality as well as large quantities) is of course a boon for development and growth. An increase in the number of stock market transactions does not necessarily mean more financing, however, or even greater market liquidity. The truth is that no one is able to state where the “right” volume of transaction might lie. This is a difficult question and one that is not wholly answered by financial theory. According to the models, the optimum level may range from zero (in rational expectation models) to an infinite number (if traders adopt dynamic hedging strategies in the absence of transaction costs).

The positive relationship between finance and growth is in fact being increasingly criticised, especially since the financial crisis, of course. Back in 2009, Lord Adair Turner, the chairman of the FSA (Financial Services Authority), willingly stated that the financial sector in the United Kingdom had grown “beyond a socially reasonable size”. In 2011, Arcand, Berkes and Panizza<sup>35</sup> published a paper with the provocative title (“*too much finance?*”) in which they demonstrated that the relationship between the volume of loans granted to the private sector and growth was not necessarily positive (i.e. it doesn't follow a straight line), but forms an inverted U shape above a threshold estimated at 100% of GDP, as the expansion of credit becomes harmful to the economy. Other papers<sup>36</sup> that point to the inefficient allocation of talent due to the growth of the financial industry also show that the relationship between the size of the financial system and economic growth is not straightforward.

There isn't really any similar research into a potentially excessive increase in financial transactions, but many factors suggest that this could be the case.<sup>37</sup> In particular, it has been clearly established that investors tend to carry out too many transactions<sup>38</sup>. Modern financial theory also calls for a moderation of financial transactions, because of the great difficulty in outperforming the market. In addition, numerous studies show that the shortening of the investment horizon affects listed companies (reduction in R&D<sup>39</sup>, poor valuation of investments<sup>40</sup>, etc.), while the presence of long-term investors seems favorable to them. Finally, there are many concerns about high-frequency trading (involving orders placed at the speed of a millisecond), which accounts for nearly 70% of share transactions and seems liable to cause sharp price fluctuations. Here again, there is a lack of research on this subject. The important issue is also perhaps not so much their impact on the markets (which is a highly controversial debate), but the social usefulness of these activities, which is very much open to debate. It seems, in fact, that the potential benefits in terms of liquidity are minimal, and high-frequency traders' gains are equivalent to rent extraction at the expense of longer term investors and at the cost of over-investment in technology<sup>41</sup>, less transparency and increased mistrust of the markets.

## 2. FTT: A TAX THAT CREATES FEW DISTORTIONS

There has been precious little interest, and even less enthusiasm, from academics on this matter. This said, FTT has a few ardent supporters, such as Keynes and Tobin, Nobel Prize winners Paul Krugman and Joseph Stiglitz, and Lawrence Summers (former president of Harvard, Treasury department secretary under the Clinton administration and director of the National Economic Council under Obama), Jeffrey Sachs (special advisor to Ban Ki-Moon and Kofi Annan at the UN), Jeffrey Frankel (Harvard professor) and Rudi Dornbusch (MIT professor). On the whole, however, economists are not keen on the idea of imposing a transaction tax on either forex or share

<sup>35</sup> Arcand J.-L., E. Berkes, and U. Panizza, 2015, “Too much finance?”, *Journal of Economic Growth*, 20(2), 105-148.

<sup>36</sup> Philippon, Th., and A. Reshef, 2012, “Wages and Human Capital in the U.S. Financial Industry: 1909-2006”, *Quarterly Journal of Economics*, 127(4), 1551-1609. See also Capelle-Blancard G. and C. Labonne, 2016, “More bankers, more growth?”, *Evidence from OECD countries, Economic Notes*, 45(1), 37-51.

<sup>37</sup> For more details, Capelle-Blancard, G., 2018, “What is the point of (the hundreds of thousands of billions of) stock transactions?”, *Comparative Economic Studies*, forthcoming.

<sup>38</sup> See in particular T. Odean, 1999, “Do Investors Trade Too Much?”, *American Economic Review*, 89(5), 1279-1298.

<sup>39</sup> Cremers, M., A. Pareek and Z. Sautner, 2017, “Short-Term Investors, Long-Term Investments, and Firm Value”, SSRN Working paper. Aghion, Ph., J. Van Reenen and L. Zingales, 2013, “Innovation and Institutional Ownership”, *American Economic Review*, 103(1), 277-304.

<sup>40</sup> Derrien, F., A. Kecskés and D. Thesmar, 2013, “Investor Horizons and Corporate Policies”, *Journal of Financial and Quantitative Analysis*, 48(6), 1755-1780.

<sup>41</sup> Biais B., Th. Foucault, and S. Moinas, 2015, “Equilibrium fast trading”, *Journal of Financial Economics*, 116(2), 292-313.

transactions, considering it to often be counter-productive.<sup>42</sup> The most common argument is that, by increasing transaction costs, FTT could reduce market liquidity, and hence increase volatility. However this argument is not supported by the empirical research, which shows that FTTs have no harmful effects on markets.

## *2.1. THE THEORETICAL EFFECTS OF FTT MOSTLY DEPEND ON UNDERLYING ASSUMPTIONS REGARDING THE RATIONALITY OF INVESTORS*

Standard financial theory relies on a modelling of the markets in which it is assumed that agents be completely rational and the financial markets efficient. In these models, speculation has a stabilising effect and prices reflect the fundamental value of assets. This should be enough to prevent a bubble or a crash. In such a scenario, FTT would increase transaction costs, distort prices, reduce liquidity and make the markets less efficient, which would ultimately lead to greater instability.

That illiquid markets are very volatile is a proven fact. This does not mean though that any increase in transaction volumes makes the markets more stable or, conversely, that reducing volumes necessarily implies higher volatility. In the theoretical models that examine this link, everything depends on the assumptions regarding the rationality of investors.<sup>43</sup> If they are assumed to be completely rational, it follows that any increase in transaction costs will automatically make the markets less efficient. If it is assumed that investors are rational to a limited degree, however (if only in their dealings with each other), reducing volumes can indeed produce positive outcomes.

Recent theoretical models therefore arrive at very different conclusions. The assumptions and approaches of course differ from one study to the next, but it appears from these studies that the effect on market volatility depends mainly on the rate and the market's liquidity: if the rate is too high or the market is not very liquid, a rise in volatility can be expected; if the tax rate is relatively high and the market sufficiently liquid, on the other hand, volatility may fall. The virtuous relationship between the transaction volume and volatility is therefore above all important for markets that lack liquidity and soon disappears, or is even reversed, above a certain threshold.

## *2.2. IMPACT STUDIES: FALLING VOLUMES, BUT NO REAL EFFECT ON LIQUIDITY OR VOLATILITY*

The effect of FTTs emerges as an eminently empirical issue. The impact studies conducted in countries where there is FTT (or there used to be) reveal a negative effect on volumes. It appears above all, however, that such a tax has no impact on the liquidity of shares or volatility; at best the effects are not robust. Even in the case of Sweden, and contrary to what is often argued, the results are not conclusive: if we look in detail at the Umlauf study (1993)<sup>44</sup>, which is often used as a case study, the effect of having FTT is at times positive, sometimes nil and sometimes negative, depending on whether volatility is measured daily or weekly, on whether or not the crash of 1987 is taken into account, and whether or not a comparison is made with the trend on the US and UK markets.

Note that current studies often merely compare transaction volumes or volatility before and after the introduction of FTT (or, more generally, a change in its rate). It is therefore impossible to isolate the effect that is specifically attributable to the tax from the impact of all the other events occurring during the period that were likely to affect the market. To deal with this methodological problem, a sample of securities that are not subject to a FTT, but whose characteristics are as similar as possible to taxed securities, is required. The introduction of the FTT in France in August 2012 offers this possibility because of its conditions of application.

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<sup>42</sup> See, for instance, K. Rogoff, 2011, "The Wrong Tax for Europe", October 3. K. Rogoff is a Harvard professor and a former chief economist at the IMF.

<sup>43</sup> For surveys, see McCulloch, N., and 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.

<sup>44</sup> Umlauf S., 1993, "Transaction Taxes and the Behavior of the Swedish Stock Market", *Journal of Financial Economics*, 33, 227-240.

### 2.3. THE CASE OF THE FRENCH FTT IN FORCE SINCE 2012

The financial transaction tax came into force in France on 1 August 2012. This tax mainly covers trades in shares, or similar securities, issued by companies whose registered office is in France and whose stock market capitalisation exceeds €1 billion (see box). Its rate should have been 0.1%, according to the initial proposal supported by Nicolas Sarkozy. The rate was doubled after François Hollande was elected. The tax was therefore introduced at a rate of 0.2%. Since 2017, the rate has been 0.3% (see the next section). FTT is payable by all participants, regardless of their nationality and their location.

#### Box: The FTT in France

The French FTT has three components:

- A tax on share transfers (Article 235 ter ZD), calculated based on the total net purchases of securities at day's end.<sup>a)</sup> This tax, which only applies to transactions resulting in an effective transfer of ownership, excludes purchases and sales carried out on the same day and hence high-frequency trades in particular.<sup>b)</sup>
- A tax applicable to high-frequency trades (Article 235 ter ZD bis). Stock market orders cancelled or amended within half a second, above an 80% threshold, are taxed at a rate of 0.01%. This tax covers all companies, in France and elsewhere, but only applies to financial intermediaries operating in France; branches, established abroad, of French companies, are therefore exempt.<sup>c)</sup>
- A tax (Article 235 ter ZD ter) on purchases of naked CDSs (Credit Default Swaps), used to speculate on sovereign debt.

In practice, only the first component is effective. The other two have a zero return: the tax on high-frequency trades is not at all enforceable (see section 5), while trades in naked CDSs are now prohibited by the European Union.<sup>d)</sup>

To properly understand the case of the tax on HFT, let us take the example of an investor identified as a high-frequency trader, in other words who carries out proprietary transactions using an automated order processing system. If this investor has transmitted a purchase order for 100,000 securities, and within the next tenth of a second they cancel part of their order to only buy 25,000, they are exempt from the tax. Similarly, if they wait for half a second before this time cancelling the whole of the order initially placed, they are also exempt. The same applies if the order is placed from a foreign branch, regardless of the time taken to cancel the orders or the percentage cancelled. This means that the tax on high-frequency trades is so easy to avoid that it has no effect. It is therefore unsurprising to learn, from the French National Assembly's information report of 25 July 2013, that in 2012 "the tax on high-frequency trades produced almost no return".<sup>e)</sup>

- a) For spot transactions, otherwise the end of the month for purchases carried out through a deferred settlement service.
- b) The following are also exempt from this tax: i) the purchase of bonds exchangeable for, or convertible into, shares, ii) purchases of securities in connection with an initial public offering, iii) transactions carried out by a clearing house or a central depository, and market-making activities by an investment firm or credit institution, including establishments outside France, iv) market-making activities for the benefit of a security's issuer in order to ensure its liquidity, v) intra-group purchases, vi) temporary sales of securities (used particularly for short sales), vii) purchases of securities in connection with employee savings plans, either by an employee savings UCITS (FCPE (company mutual fund) or SICAVAS (employee shareholder open-ended investment company)), or by the company or a group company, viii) the buying back of securities by a company in order to assign them to employees who belong to a company savings plan.
- c) <http://bofip.impots.gouv.fr/bofip/7581-PGP>.
- d) There are some exemptions from this prohibition, however.  
See <http://www.ofce.sciences-po.fr/blog/entree-en-vigueur-de-linterdiction-des-cds-a-nu/>
- e) Information report filed by the finance, general economics and fiscal control committee on the application of the tax measures contained in finance bills. Registered with the Office of the President of the French National Assembly on 25 July 2013.  
<http://www.assemblee-nationale.fr/14/rap-info/i1328.asp>

This tax is particularly suitable for an impact study, as its base, and the attributes of the French equity market, mean that control groups are easy to identify. In a study conducted in 2013<sup>45</sup>, we measured the change in liquidity and volatility over a one-year period (February 2012-January 2013), centred on 1 August 2012, when the tax was introduced. The idea was to compare the trend for the samples composed of securities subject to the tax

<sup>45</sup> Capelle-Blancard, G., and O. Havrylchuk, 2016, "The impact of the French securities transaction tax on market liquidity and volatility", *International Review of Financial Analysis*, 47, 166-178.

with the trend for the control samples. This method was based on the double-difference approach (before/after and taxed/untaxed).<sup>46</sup>

Let's start by looking at the development of transaction volumes (see Figure 4). If we take French large cap companies, an average of €40 million of shares were traded during the six months following the introduction of FTT, versus a volume of €50 million during the previous six months. It would be incorrect to assume that this 20% fall was due solely to the tax, however. Other factors may also have played a role (activity is often lower in August and December, for example), which is why it is important to have a control sample. Over the same period, shares in non-French large cap companies traded on the same market, under the same conditions, which probably underwent similar shocks, saw their transaction volume decrease by 10%.<sup>47</sup> This means that, overall, French large caps experienced a decrease in their transaction volume of 10% compared with shares not subject to FTT. Given the variability of the volumes over this period, the relative fall may be viewed as significant. Note that this is a similar rate to the one used by the European Commission in its estimates of the revenue that the FTT could generate, as it assumes a 15% fall in transaction volumes.

These results therefore confirm previous studies that show that FTTs have a negative effect on traded volumes. This does not, however, mean that the securities become less liquid. The academic literature is in fact unanimous on this point; liquidity is a multi-dimensional concept and transaction volumes are a poor way to measure it. We therefore applied the same approach to other, less crude indicators of liquidity. For instance, we looked at the bid-ask spread, i.e. the difference between the prices offered by buyers and sellers as a percentage of the average price, and the liquidity ratio, which is calculated by dividing the daily volumes by the absolute value of the daily return, and represents the volume required for prices to change by 1%: the more liquid the market, the more able it is to absorb a large order without causing too much of a price swing, and the higher this ratio is. The results suggest a widening of the bid-ask spread for the shares of French large cap companies (but nothing robust for small and medium-sized companies). Despite this, FTT does not seem to have affected the market's capacity for resilience, as there is no significant impact on the liquidity ratio.

We also measured the effect of FTT on market volatility. Like liquidity, volatility is a concept that cannot be unambiguously measured. We therefore selected several indicators, including the absolute value of the daily returns and the spread between the highest and the lowest prices observed during trading, expressed as a percentage of the average price.<sup>48</sup> Whatever the measurement used, we did not identify any effects on market volatility that were both significant and robust.

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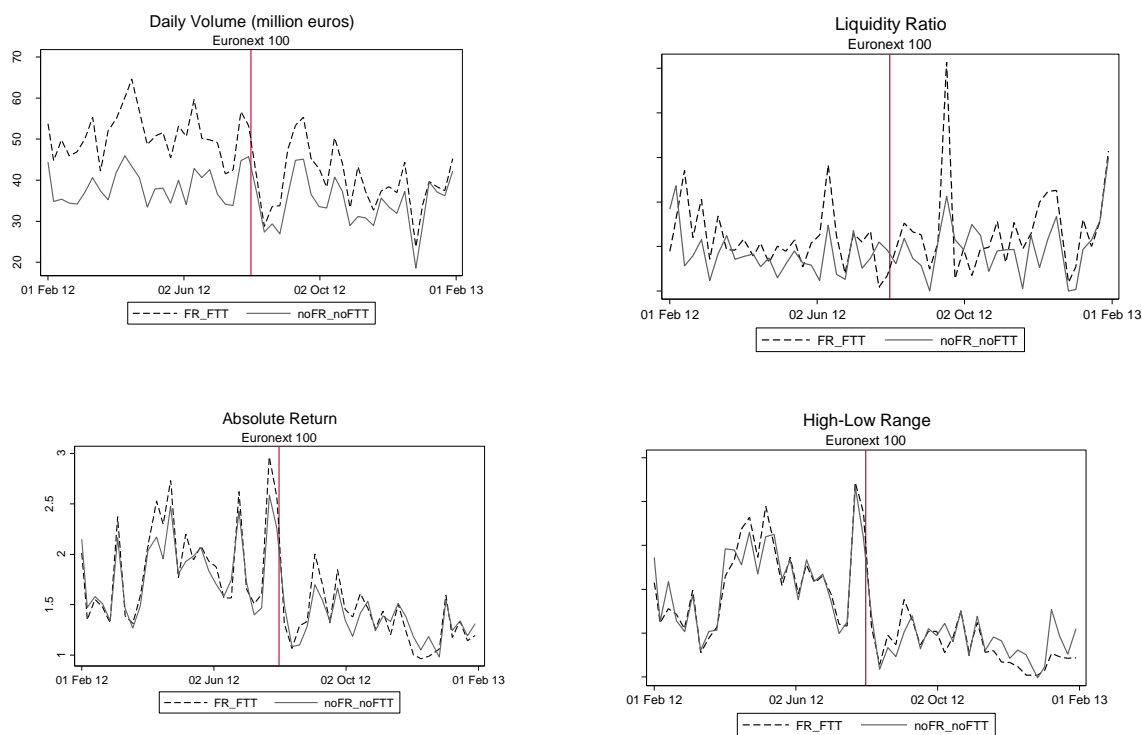
<sup>46</sup> If we were to call  $V_t^A$  and  $V_t^B$  the average volume of transaction over period  $t$  (before or after the introduction of TTF) for samples A (taxed) and B (untaxed) respectively. The specific effect of the tax on volumes is measured as:  $(V_{après}^A - V_{avant}^A) - (V_{après}^B - V_{avant}^B)$ . A standard statistical test for equality of the means then would allow us to conclude whether or not the effect is actually significant. An alternative approach consists in econometrically regressing, for all securities, the daily volumes (or any other variable of interest) over a dummy variable equal to one if the security has been subject to the tax from August 1st 2012 as well as a series of fixed effects and control variables. The latter approach is favored in the aforementioned study.

<sup>47</sup> This aggregate rate follows the point of view of an index fund manager. For this estimate, the larger companies of each sample have a larger weight than the smaller ones. If we equally weight each security (which is possible with the econometric approach), the decrease in transaction volumes specifically attributable to the tax is around 20% on average. The difference between the aggregate rate of 10% and the average rate of 20% is due to the fact that the impact is larger for the securities with lower trade volumes.

<sup>48</sup> Other types of indicators are used in Capelle-Blancard, G., and O. Havrylychuk, 2016, *op. cit.* Specifically, they build on several measures of conditional variances obtained with a GARCH(1,1) model.



**Figure 4: Change in the liquidity and volatility of shares listed on Euronext before and after the introduction of FTT**



*Interpretation: the difference between the curves shows the effect of FTT: when the dotted curve approaches the solid curve (as is the case in the top-left), for example, this reflects a fall in transaction volumes for shares subject to the tax compared with shares that aren't. Calculations: Capelle-Blancard and Havrylych (2016).*

No fewer than five studies have been carried out on French FTT.<sup>49</sup> The samples differ but the approaches are similar and highly comparable. They all identify a negative impact on transactions of a comparable scope: between  $-10\%$  and  $-20\%$ .<sup>50</sup> This is a significant fall, but should be put into perspective with the considerable increase in the number of transactions, which rose by a factor of 25 in France in the last 25 years as we saw above. In 2014 and 2015 alone, the number of trades in French shares increased by 24% and 29%. In short, it is as though the introduction of FTT only delayed the upwards trend in transaction volumes by a few quarters.

Four of these studies also found no significant effect on the bid-ask spread, regardless of the time period or sample involved. The market's depth seems to have decreased slightly since the FTT was introduced, but with no real negative impact on the other components of liquidity. There is also no evidence of a transfer of activity to untaxable investment vehicles, such as CFDs (contracts for difference), contrary to claims in the press. Finally, when it comes to the consequences for volatility, the results converge overall: the market does not seem to be either more or less volatile since the introduction of this tax.

<sup>49</sup> Becchetti, Ferrari and Trenta, 2014, "The impact of the French Tobin tax", *Journal of Financial Stability*, 15, 127-148; Colliard and Hoffman, 2016, "Financial Transaction Taxes, Market Composition, and Liquidity", *Journal of Finance*, à paraître; Gomber, Haferkorn and Zimmermann, 2016, "Securities Transaction Tax and Market Quality: The Case of France", *European Financial Management*, 22(2), 313-337; Meyer, Wagener and Weinhardt, 2015, "Politically Motivated Taxes in Financial Markets: The Case of the French Financial Transaction Tax", *Journal of Financial Services Research*, 47(2), 177-202.

<sup>50</sup> The decline of 20% is mainly observed in the first weeks, with a very sharp decline in the activity of high-frequency traders during the first few days, but the effect was only temporary. See also Flandrin, Megarbane & Romey, 2013, « Enjeux de la TTF européenne et retour d'expérience sur la TTF française », Document AMF.

### What conclusions can be drawn from the academic studies?

The theoretical effect of FTT on the volatility of the financial markets is fundamentally linked to assumptions regarding the rationality of market participants. In practice, the impact of FTT depends on its design and market conditions: the more liquid the market, the more likely it is that the effects will be limited.

**Econometric studies conducted in many countries, using fairly diverse methods, produce quite clear results:**

- **Introducing FTT reduces transaction volumes, by 10% to 20%.**
- **This fall in volumes does not appear to have an impact on market liquidity.**
- **FTTs also have no significant (upward or downward) impact on financial volatility.**

## 3. FTT: A QUESTION OF DESIGN

Discussions about the FTT are more of a political nature, taking place between countries, the banking and financial lobbies and NGOs, than based upon evidence and rational arguments.<sup>51</sup> Its critics have a whole range of views on FTT, including that it would be detrimental to the financing of the economy, would result in massive relocation, cause job losses and ruin savers, while making the country poorer. And why not a plague of locusts? In reality, as is often the case, everything depends on the design.

### 3.1. SCOPE: PLACE OF ISSUANCE AND RESIDENCE

The first key factor is scope. The main argument against FTT is of the potential avoidance. According to its detractors, nothing can be done to prevent this at national, or even European level, and the only solution would be a worldwide tax. In other words, the tax should be indefinitely postponed.<sup>52</sup> It is true that capital is very mobile these days and financial innovation is particularly prolific, especially when it comes to getting around regulations or tax rules. This does not, however, mean that FTT is doomed to fail. The fact that such a tax exists in many countries, and especially in London, as mentioned above, is the best proof of this.

The argument that there would inevitably be avoidance of FTT is usually based on the example of Sweden, which decided to introduce such a tax in 1984 (see above). This effectively failed and was repealed at the start of the 1990s. The problem with Swedish FTT was that it only applied to transactions carried out by Swedish brokers, however. The British system, for example, is better designed, as all operators are liable for the tax if they trade in shares issued by UK companies (place of issuance principle). Nearly half of all stamp duty revenue is also collected from foreign operators. The FTT introduced in France in 2012, like its equivalent introduced in Italy in 2013, are similar from this point of view and have not caused a massive relocation of transactions.

In the case of European FTT, the "place of issuance principle" is combined with a "place of residence principle", which provides that all transactions completed by financial intermediaries from the eleven participating European countries are taxed, regardless of where they took place. Again, this is likely to reduce the risks of avoidance.

The fear of unfair competition from foreign operators established in countries that will not adopt FTT is therefore largely exaggerated, as they themselves will also be subject to the tax and will therefore be denied the benefit of

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<sup>51</sup> Cf. Schulmeister S., *op. cit.*

<sup>52</sup> « Rien n'est plus facilement délocalisable qu'une transaction financière. (...) Les transactions fuiront vers des cieux fiscaux plus cléments, à Londres, Luxembourg ou Singapour. Les centres financiers perdront quelques milliers d'emplois supplémentaires. Et ce sont les entreprises et les épargnants qui paieront la facture finale. Bref, les coûts l'emporteront largement sur les bénéfices attendus, les milliards ne seront jamais au rendez-vous. » ("There is nothing easier than to relocate a financial transaction. (...) Transactions will take flight to find more lenient fiscal havens, to London, Luxembourg or Singapore. Financial centres will lose further thousands of jobs. And in the end, those penalized will be the companies and the savers. In short, costs will largely outweigh the expected benefits; the billions that are expected will never be collected"). <http://www.lesechos.fr/idees-debats/editos-analyses/021542654304-la-taxe-qui-pollue-la-cop21-1182892.php?g45PxlMWHsWQueYk.99>

a windfall effect: the dual place of issuance and place of residence principles create the conditions for a very widely applicable tax no matter the transaction's origin.

Collection will of course raise practical problems with application and compliance, particularly if the FTT is extended to derivatives and intra-day transactions. It is also likely that some investors will manage to avoid the tax. But this will also offer an opportunity to gather reliable and precise information able to shed light on the scope of financial transactions. And if we were going to scrap all taxes because it's possible to avoid them, then why not do away with corporate tax (and many other forms of tax)?

### 3.2. A BROAD BASE AND A LOW RATE

Which transactions should be taxed? Shares, as suggested by Keynes? Forex transactions, as proposed by Tobin? Bonds, to reduce incentives to load up on debt? Derivatives, which are often described as weapons of mass destruction?

The vast majority of FTTs currently in force apply solely to trades in shares. Forex transactions are only taxed in a few countries in Latin America, derivative transactions in Taiwan and Italy, and bond transactions mainly in Thailand and Belgium. There is a certain logic to seek as broad a base as possible, however, especially to avoid distortions in securities selection by investors. If the base is so often restricted to shares this is mainly for practical reasons.

There are in fact two opposing strategies in the context of the European proposal. The first consists of adopting FTT restricted to shares, at least initially, but ensuring that it is quickly adopted by as large a group of countries as possible.<sup>53</sup> The second consists, conversely, of taking a more ambitious approach, with a broad base and a low rate.<sup>54</sup>

#### ■ Shares

Trades in shares are traditionally the main transactions targeted by FTTs. John Maynard Keynes saw this as "the most serviceable reform available, with a view to mitigating (...) the predominance of speculation over enterprise".<sup>55</sup> On the opposite side of the debate, opponents of FTT describe it as a major hindrance to the financing of the entire French economy.<sup>56</sup>

Every kind of tax has an effect on activity, of course; in the case of the FTT, this is even one of the effects sought. It is worth repeating, however, that a fall in transaction volumes does not automatically mean that liquidity will deteriorate, and it means even less that the cost of financing will rise. This is all the truer as financial markets are already highly liquid. FTT introduced in France in 2012, for instance, was accompanied by a 20% fall in transaction volumes, but with no effect on the market's liquidity.<sup>57</sup> No studies have found any effect on the competitiveness of the French economy. If there are problems with the competitiveness and financing of companies in France, it is unlikely that the blame lies with the market's liquidity or FTT.

It is also possible to exempt small caps to protect the companies whose securities are the least liquid. In France, for example, only transfers of shares in companies whose stock market capitalisation is greater than €1 billion are

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<sup>53</sup> In February 2014, François Hollande promised an agreement on the FTT before the European elections in May, but with less ambition: « *Je préfère une taxe imparfaite à pas de taxe du tout* » ("I prefer an imperfect tax to no tax at all"). In the Fall of the very same year, Michel Sapin (then Finance minister) also adopted a pragmatic stance: « *Je préfère une TTF qui aurait un produit limité au-delà des actions mais qui soit efficace et effective et qui progressera, plutôt qu'une très belle idée, mais qui restera dans les nuages* ». ("I prefer an FTT that would have limited impact over and above shares, but that would be efficient and feasible to implement, and that will move forward, rather than a super idea but left up in the clouds").

<sup>54</sup> This seems to be the current position of the French government. On January 5<sup>th</sup> 2015, François Hollande indeed indicated that he wanted the FTT to have « *l'assiette la plus large possible* » ("the broadest base possible").

<sup>55</sup> The concept of FTT is developed in the 12<sup>th</sup> chapter of his famous book *The General Theory of Employment, Interest and Money*.

<sup>56</sup> <http://www.fbf.fr/fr/contexte-reglementaire-international/systeme-financier-international/une-taxe-unilaterale-sur-les-transactions-financieres-serait-inefficace-et-contre-productive-pour-l%27economie-francaise>

<sup>57</sup> Cf. Capelle-Blancard, G., and O. Havrylchuk, 2016, *op. cit.*

taxed. Out of the approximately 600 companies listed in Paris, less than a quarter are subject to the tax.<sup>58</sup> A threshold has also been set in Italy, but at €500 million. In the United Kingdom, shares listed on the Alternative Investment Market (AIM), the market for small companies with high growth potential, were exempted in April 2014.

In each case, the aim has been to avoid harming small companies whose shares are not very liquid. The cost of this exemption is minimal in terms of tax receipts, as stock market transaction volume is highly concentrated on large caps, or blue chips, as they are known. In France, for example, companies whose capitalisation does not exceed €1 billion account for 2% of the total stock market capitalisation; on the London Stock Exchange, the thousand companies listed on the AIM represent scarcely 1% of the total stock market capitalisation.

#### ■ Derivatives

Derivatives can be used to take highly speculative positions with a relatively modest outlay. As we have seen, the amounts exchanged are very large (see Figure 3). Derivative transactions are more difficult to tax than spot transactions, on the other hand, as i) most activity takes place over the counter rather than on regulated markets; ii) these products are complex and the taxable base is difficult to identify. Derivatives are contracts that commit counterparties to financial transactions in the future, and usually no money exchanges hands when the contract is signed. If there is no premium, which is most often the case, the simplest path to go down is to tax the notional amount. This is not representative of the amounts effectively in play, however, which is why the tax rate is much lower for derivatives than for spot transactions.<sup>59</sup>

Opponents of FTT often suggest that taxing derivatives would seriously damage companies as it would increase the cost of hedge transactions. This position would seem somewhat far-fetched, since the tax would have little impact on hedging costs. The main impact would be on the banking and financial sector in fact. The most affected transactions are actually those which take place between financial intermediaries, which account for most derivative activity according to the BIS.<sup>60</sup>

#### ■ Bonds

In theory, the bond market is far less speculative than the stock market or derivative markets. Although there is a considerable number of bond issues, bond transaction volumes are also much lower than equity volumes. Discussions on FTT often overlook bonds. There is a certain paradox, however, in only taxing trades in shares while trying, on the contrary, to rebalance tax incentives to favour equity over debt. This is the main argument for expanding the FTT's base to bonds. One tricky question remains, however: should sovereign bonds be included? Countries are reluctant to do this, fearing that this would raise the cost of public debt.<sup>61</sup>

#### ■ Foreign exchange

To "throw sand in the cogs of the excessively well-oiled machinery of international finance" was James Tobin's aim when he suggested taxing forex transactions in the 1970s. The well-known and highly popular Tobin tax was never introduced, despite the vertiginous and almost continuous rise in the number of forex transactions (see Figure 3). Given the amounts involved, even with a very low rate the tax receipts could amount to several hundreds of billions of dollars, however. Above all, the obstacle remains more of a political nature.

The tax is now supported especially by NGOs (Attac, Oxfam, Stamp-out-Poverty, One, etc.), who would like the proceeds from it to be allocated to development aid or measures to combat climate change. This proposal,

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<sup>58</sup> The list is updated each year by the fiscal administration (based on the market capitalization as measured on Dec. 1<sup>st</sup> the previous year), and published in the Bulletin officiel des finances publiques (BOFiP). The number of companies in the list was 109 in 2012 and 135 in 2016.

<sup>59</sup> See also A. Persaud, 2014, "Taxing transactions in financial derivatives: problems and solutions", *Intelligence Capital*, September. [www.stampoutpoverty.org/wp-content/uploads/2014/09/Taxing\\_Derivatives\\_Transactions\\_Persaud\\_120914.pdf](http://www.stampoutpoverty.org/wp-content/uploads/2014/09/Taxing_Derivatives_Transactions_Persaud_120914.pdf)

<sup>60</sup> Note that the off-balance-sheet exposure of the four largest French banks in terms of derivatives (aggregate notional amounts) represents almost 50 times the French GDP. Cf. <http://www.lenouveleconomiste.fr/le-talon-dachille-des-banques-francaises-21860/>

<sup>61</sup> This is especially the case if FTT applies to repo operations. See D. Gabor, 2016, "A step too far? The European financial transactions tax on shadow banking", *Journal of European Public Policy*, 23(6).

whose logic is quite similar to the tax on plane tickets to help combat aids, is therefore part of a drive to find "innovative financing".<sup>62</sup>

The criticism often made of the Tobin tax is based on the idea that, to be efficient, the Tobin tax should be introduced by a large number of countries at the same time, or even all of the 180 or so countries participating in the international monetary system, to avoid possible free rider behaviour by certain countries, and especially tax havens. As such a consensus currently seems completely unrealistic, the Tobin tax is compromised. The issue of political feasibility is not as daunting as it might appear, however. The forex market is concentrated in a few financial marketplaces (more than half of all transactions are carried out in the top three global hubs, namely London, New York and Tokyo) and it would only take an agreement between the OECD countries on the principle of such a tax for its impact to be significant.

The trickiest political problem is in fact deciding on the body that will be responsible for establishing the tax's rate and the collection arrangements and for deciding how to allocate the proceeds of the tax. The large majority of countries are opposed to introducing supranational taxation and wish to retain control over tax collection, and above all the use of tax revenue, all the more so since there are diverging interests between countries. Furthermore, the IMF, which is one of the only international institutions that could credibly manage a Tobin tax, refuses to do so, as it is yet to be convinced that such an initiative would be a good idea.<sup>63</sup>

Another short-term solution would be to take the "voluntary agreement" route. Voluntary agreements are arrangements whereby a company, or a group of companies, voluntarily undertakes to introduce enforceable measures over and above the regulatory requirements.<sup>64</sup> The main advantage of a voluntary agreement on the Tobin tax is that it would not require cooperation between countries, or at least not at first. The proposal could be initiated by a small group of countries, international organisations (public authorities or NGOs) or a few financial establishments, on a unilateral basis. In 2011, for example, Crédit Coopératif introduced an original voluntary contribution on forex transactions (CVTC, for "*Contribution volontaire sur les opérations de change*"). Such an approach, adopted on a large scale, would stimulate international collaboration, enable the identification of the most efficient arrangements, demonstrate the tax's feasibility, and increase the acceptability of subsequent regulatory measures. In short, it could be a first step forward.

#### ■ Over-the-counter markets *versus* regulated markets

In the past, when stock exchanges were still (regional or national) monopolies, FTTs mainly targeted domestic markets. Market fragmentation and the development of alternative trading platforms have made the system more complex, but the application of the place of issuance principle requires that shares are taxed wherever transactions take place. This does not prevent the taxation of platforms at different rates according to whether or not they are regulated, however.

This was the original choice made by Italy, by setting a 0.1% rate for transactions carried out on a regulated market and a 0.2% rate for transactions completed over the counter. Transaction volumes slightly decreased overall, as in France, but there was no significant impact on the liquidity or volatility of Italian shares. The share of equity traded over-the-counter plummeted, on the other hand, from around 30% before the tax was

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<sup>62</sup> See the works by the Leading Group on Innovative Financing for Development, which was created in 2006 and gathers about 60 countries together with most international organisations.

<sup>63</sup> In 2010, the IMF published a very thorough report on the taxation of financial activities. Rather than a FTT, the IMF was considering a tax directly collected from the financial intermediaries, and labeled *Financial Activities Tax (FAT)*. As its acronym suggests, this tax would aim at recovering part of the financial sector's "position revenue". Its base would be linked to banks' profits and salaries. About FTT, as part of the work conducted by the IMF, see also Matheson, Th., 2010, "Taxing Financial Transactions: Issues and Evidence", *IMF Working Paper*. IMF, 2010, "A fair and substantial contribution by the financial sector", Final Report for the G20.

<sup>64</sup> See for instance Fleckinger, P., and M. Glachant, 2009 « La Responsabilité Sociale de l'Entreprise et les Accords Volontaires sont-ils complémentaires ? » *Economie et Prévision*, 4-5 (190-191), . 95-105.

introduced to less than 10% just afterwards (whereas the market share for German shares, for example, remained stable).<sup>65</sup>

The idea of differentiated rates has apparently not been included in the European proposal. The Italian experiment suggests, however, that this can be a good idea as it provides an incentive for transactions to migrate to regulated markets, in the interests of transparency in particular. This argument is still more relevant for FTT extended to derivatives; as Avinash Persaud suggests, derivative transactions that do not undergo central clearing could be taxed at twice the rate of other transactions, for example.<sup>66</sup>

#### ■ The rate

The European proposal provides for a 0.1% rate for spot transactions. This may seem low compared with the rate applied in France (0.2% until 2017 and 0.3% since) or the United Kingdom (0.5%). As is often the case with taxation, however, nominal rates are misleading and poorly reflect the tax burden. Everything depends on the base chosen or, more precisely, the exemptions granted: in practice, determining the rate and the base are intimately linked.

#### **Box: The increase in the French FTT tax rate from 0.2% to 0.3%**

In December 2016, the French Parliament voted an increase in the tax rate of the FTT from 0.2% to 0.3%, with entry into force on January 2017.

*What was the impact of this rate change on activity?* Without repeating the econometric study presented in Section 3, we can get a fairly accurate picture of this impact by examining how the amount of transactions varied on Euronext Paris (where most of the transactions are subject to this reform), compared to that observed at the same time on Euronext Amsterdam and Euronext Brussels (which are subject to similar uncertainties, but are not affected by the FTT).

- Compared to December 2016, the volume of transactions in January 2017 decreased by 2.5% on Euronext Paris, while there was a 9% decrease on Euronext Amsterdam and a 20% decrease on Euronext Brussels.
- Compared to the first quarter of 2016, the volume of transactions in the first quarter of 2017 decreased by 14% on Euronext Paris, whereas it remained stable on Euronext Amsterdam and decreased by 24% on Euronext Brussels.

A more detailed analysis can be carried out using more granular data, but this primary analysis on aggregated data strongly suggests that stock market activity on Euronext Paris was not significantly affected by the change from 0.2% to 0.3%.

*What was the impact of this rate change on tax revenues?* The tax revenues for January 2017 (the only ones available at the time of publication of this document) amount to 83.5 million euros. Compared to the situation in January the previous year, taking into account the differences in activity, tax revenue is 60% higher.

To better assess the effective tax rate, we might perform few simple calculations. In 2014, French FTT generated €771 million. As the nominal rate of the FTT was 0.2%, this implies a tax base of €385 billion. Given that the total volume of trades in French shares in 2014 was between €1,500 billion and €2,700 billion<sup>67</sup>, only 15% to 25% of transactions were effectively subject to FTT. The remaining 75% to 85% (a very large share of which were composed of intra-day transactions) were quite simply exempt. In other words, the "implied" rate of taxation for FTT in France is only from 0.03% to 0.05%. At this rate, FTT is quite painless (see above).

<sup>65</sup> 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; Coelho, M., "Dodging Robin Hood: Responses to France and Italy's Financial Transaction Taxes", SSRN Working paper, 2016.

<sup>66</sup> This is what is meant by Avinash Persaud in his recommendation n°6 (op. cit.)

<sup>67</sup> Transactions on Euronext Paris amounted to almost €1,000 billion. Shares of French companies are also traded on other platforms, the activity of which is particularly difficult to measure. Given that, depending on the sources, Euronext Paris' market share is estimated between 35% and 65%, the total volume could be estimated between €1,500 billion and €2,700 billion.

A similar calculation can be made for other taxes, past and present. In 2013, for instance, the total volume of trades in British shares was £3,600 billion according to the European Market Share Report (Thomson Reuters), while tax receipts from stamp duty on shares amounted to £3.1 billion. This is therefore close to an implied rate of 0.1%, remembering the nominal rate of 0.5%. We can see that the relative difference is around the same order of magnitude in France and the United Kingdom: the effective rate is four to five times lower than the nominal rate, i.e. there is an 80% to 90% exemption rate in both countries.

It is also worthwhile comparing the situation today to the situation in the past. Until the 1990s, the implied rates were in fact very close to the nominal rates. This was the case in France, for example, with the IOB, and in Sweden. The nominal rate applied in the 1980s in Sweden (2%) was already much higher than the rate applied now in France (0.2%); but this is combined with a taxable base that is currently relatively narrow. In comparative terms, it therefore seems that FTT in France is presently 40 to 50 times higher than the tax imposed in Sweden in the mid-1980s. That is not to say that we are suggesting here that the FTT's rate should be higher; if the truth be told, it is not really possible to determine the optimum rate. This comparison of implied rates should be taken with a big pinch of salt, on the other hand, given that the situation in France (or the European proposal) is being compared with the situation in Sweden 30 years ago.

The main reason why the effective rate is now so low is the increase in intra-day transactions, which are effectively exempt. Along with the geographic scope, this is now one of FTT pivotal points.

### 3.3. FTT AND HFT

FTTs currently in force are almost all comparable to stamp duties, which are payable when ownership of securities is transferred. Traditionally, transfers of ownership are recorded when the markets close, which inevitably excludes transactions carried out during one and the same session. As experience has shown, this simple system offers good legal guarantees. As long as these transfers back and forth accounted for only a small percentage of the volumes traded, this was not really a problem. But with the explosion of intra-day trading, of course, this effective exemption considerably limits the revenue from FTTs. Above all, this seems to be completely at odds with one of the often stated objects of FTT, which is supposed to mainly target short-term speculation.

In France, the proposed system introduced a tax on HFT on top of the tax on daily transfers. However, practically speaking, as already mentioned, this HFT tax was not binding, to the point that it generated no fiscal revenue. The extension of FTT to intra-day transactions is regularly debated in Parliament. Within a four-year period, there have been several attempts to amend this point; these attempts were all unsuccessful, as they were not supported, rejected, adopted then withdrawn a few weeks later following government action, or rejected by the Constitutional Council on a technicality. The wording of the amendment has barely changed in the meantime. The stated aim is still to increase tax receipts. The presentation of its grounds also refers to the future European tax, which could include intra-day transactions.

Finally, in December 2016, the Parliament approved an extension of the FTT to the execution of a purchase order, irrespective of whether the security was delivered. The entry into force of this extension to intra-day transactions has been postponed to 1 January 2018. However, the new government, consecutive to the 2017 presidential elections, has decided to withdraw this extension to promote the competitiveness post-Brexit of Paris financial center, and to avoid any legal risk.<sup>68</sup>

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<sup>68</sup> According to President E. Macron: « La taxe française a été votée par la majorité précédente, de manière démagogique s'agissant des transactions "intraday", en sachant que c'était infaisable. Si vous la faites seul, il n'y a plus de transactions chez vous ! Il n'y a plus une entreprise française cotée en France ! Au niveau européen, j'ai dit que j'irai au bout. Je ne recule en rien sur ce sujet. Il faut en même temps, une articulation avec l'accès des Britanniques à nos marchés financiers dans le cadre du Brexit. Sinon, si toutes vos entreprises peuvent aller opérer depuis Londres, qui se lancera dans le dumping fiscal, avec les mêmes droits qu'à Paris ou à Francfort, elles vont toutes partir. Je veux la TTF. Je veux une TTF qui s'applique dans un espace cohérent, qui ait un sens et qui soit efficace. » ("The French tax was voted by the former majority, demagogically aimed at intraday transactions, knowing that it was unfeasible. If you are the only one to implement it, then no

### Box: The extending of the French FTT to intra-day transactions

- Draft finance bill for 2017 (No. 4016)
  - ↗ 16 Dec. 2016, Amendment 665 adopted on its last reading by the French National Assembly<sup>69</sup>
  - ↗ 13 Dec. 2016, Article 11bis withdrawn by the Finance Committee<sup>70</sup>
  - ↗ 13 Oct. 2016, Amendment I-239 adopted on its first reading by the French National Assembly<sup>71</sup>
  - ↗ 12 Oct. 2016, Amendment I-83 adopted by the French National Assembly<sup>72</sup>
- Draft finance bill for 2016 (No. 3096)
  - ↗ 29 Dec. 2015, Rejection by the French Constitutional Council
  - ↗ 11 Dec. 2015, Article 8 quarter adopted on its last reading by the French National Assembly
  - ↗ 23 Nov. 2015, Article 8 quarter withdrawn by the Senate
  - ↗ 16 Oct. 2015, Amendment adopted on its first reading by the French National Assembly
  - ↗ 7 Oct. 2015, Amendment CF284A adopted by the French National Assembly's Finance Committee<sup>73</sup>
- Amending draft finance bill for 2014 (No. 2353)
  - ↗ 26 Nov. 2014, Amendment CF228, not supported<sup>74</sup>
- Amending draft finance bill for 2014 (No. 2024)
  - ↗ 23 June 2014, Amendment No. 286 rejected by the French National Assembly<sup>75</sup>
- Draft finance bill for 2014 (No. 1395)
  - ↗ 27 Nov. 2013, Amendment withdrawn by the Senate
  - ↗ 8 Oct. 2013, Amendment I-CF503 adopted by the French National Assembly<sup>76</sup>

**The taxation of intra-day transactions requires an in-depth revision of the collection system, which is currently based on the transfer of ownership.** In the case of French FTT, collection is mostly managed by Euroclear, the central depository, which centralises the information about the balance of the purchases and sales at day's end, but not the transfers back and forth that took place in the course of the day.<sup>77</sup> In addition to political will, or lack of it, there is therefore a technical obstacle: having access to reliable information about stock market transactions, including high-frequency trades and/or trades on alternative trading platforms. This obstacle is not insurmountable. The problem of measurement always arises whenever a new tax is raised (in a completely different field, see the recent debate on the taxation of bandwidth). This is even another reason to extend FTT, as it would finally provide reliable and precise information about the massive volume of stock market transactions.

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transactions are done at home anymore! There are no more French companies listed in France! At the European level, I said I would push the issue forward. I am not backing down on this matter. At the same time, we need to articulate this with the UK access to our financial markets in the Brexit context. Otherwise, if all your companies can operate from London (which will implement a fiscal dumping strategy) with the same rights as they would have if in Paris or Frankfurt, they will all leave. I want FTT. I want an FTT that would be applied in a coherent geographical space, that would have a meaning and that would be efficient.”)

<sup>69</sup> <http://www.assemblee-nationale.fr/14/amendements/4271/AN/665.asp>

<sup>70</sup> [http://www.assemblee-nationale.fr/14/amendements/4271/CIION\\_FIN/CF14.asp](http://www.assemblee-nationale.fr/14/amendements/4271/CIION_FIN/CF14.asp)

<sup>71</sup> <http://www.assemblee-nationale.fr/14/amendements/4061A/AN/239.asp>

<sup>72</sup> <http://www.assemblee-nationale.fr/14/amendements/4061A/AN/83.asp>

<sup>73</sup> <http://www.nosdeputes.fr/14/amendement/3096/CF284A>. To see the actual debate in the Commission (between the 23<sup>rd</sup> and the 40<sup>th</sup> minute, in French): [http://videos.assemblee-nationale.fr/Datas/an/portail/video.3199408\\_56156cb9b44d7.commission-des-finances--loi-de-finances-pour-2016-apres-article-8-adt-305-a-fin-7-octobre-2015](http://videos.assemblee-nationale.fr/Datas/an/portail/video.3199408_56156cb9b44d7.commission-des-finances--loi-de-finances-pour-2016-apres-article-8-adt-305-a-fin-7-octobre-2015).

<sup>74</sup> <http://www.nosdeputes.fr/14/amendement/2353/CF228>

<sup>75</sup> <http://www.nosdeputes.fr/14/amendement/2024/286>

<sup>76</sup> [http://www.assemblee-nationale.fr/14/amendements/1395A/CIION\\_FIN/CF503.asp](http://www.assemblee-nationale.fr/14/amendements/1395A/CIION_FIN/CF503.asp)

<sup>77</sup> See also : Référé n°82017-1860 - Cour des Comptes, which points to the lack of administrative controls.



## 4. FTT: A GOOD TAX

Why tax financial transactions? To raise new tax revenue or for regulatory purposes? Some hope, in fact, to achieve both aims at the same time; this is the idea of a "double dividend" or a "win-win" strategy. In practice, these aims are somewhat of an antithesis, however. To effectively limit speculation (assuming that this is the desired goal), the rate must be much higher than the rate currently implemented or planned. But if the aim was achieved then the tax receipts would automatically be low. There is no point trying to pursue several objectives at once, unless several instruments are used.

**From a fiscal viewpoint, FTT, with its broad base and its low rate, has many advantages:**

- **FTT is a tax that creates little distortion;**
- **FTTs potentially generate high revenue;**
- **collection costs are minimal for FTTs;**
- **FTT is a tax with redistributive effects;**

### 4.1. THE TINBERGEN RULE

If the goal is to contain the development of the financial markets, slow capital movements, or combat short-term speculation and market volatility, FTT must be enforceable. Economists describe taxes as Pigouvian<sup>78</sup> if their aim is to correct externalities but generate little revenue if effective.

**In practice, FTT as it is currently applied is not a Pigouvian tax.** As we have seen, it has very little market impact. It is therefore possible, of course, to consider drastically increasing its rate, but in this case the effect on the financial markets would be most uncertain.

Is it such a bad thing that FTT, as applied or planned, does not bear much regulatory value? Not really, actually, as this lack of effect is particularly valuable if we wish to introduce a "conventional" tax designed to not create distortions.

If the objective is to limit financial instability, there are probably other instruments that are better suited to this purpose, such as regulating high-frequency trading, limiting access to certain markets and/or market participants, switching from a continuous pricing system to a fixing system<sup>79</sup>, strengthening financial intermediaries' prudential standards, combating moral hazard and implicit guarantees granted by countries to banks that are too big to fail, and separating activities.

Another option is to specifically tax certain transactions considered to be the least useful to the efficient functioning of the markets. This is the idea that prevailed when FTT was introduced in France in 2012, furthermore: a tax on transfers of ownership as an instrument for tax collection, along with a tax on cancelled orders and a tax on naked CDS transactions (see section 2.2). Except that these latter two taxes were poorly calibrated and completely ineffective.

According to a simple rule of economic policy, formulated by Jan Tinbergen (winner of the first Nobel Prize for economics), as many instruments are required as there are targeted aims. A single tax is not enough to both raise large amounts of funds and combat certain practices on the financial markets. This does not necessarily mean that one of these aims needs to be discarded, however. It would be entirely possible to have a global FTT

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<sup>78</sup> Named after British economist Arthur Cecil Pigou (1877-1959), who introduced the concept;

<sup>79</sup> Budish, E., P. Cramton, and J. Shim, 2015, "The high-frequency trading arms race: frequent batch auctions as a market design response", *The Quarterly Journal of Economics*, 130(4).

alongside more targeted taxes<sup>80</sup>, for example on cancelled orders or investments in technologies that increase the speed with which orders are placed.<sup>81</sup>

## 4.2. A FINANCIAL WINDFALL?

- If British stamp duty were to be extended to the rest of the world, it would bring in \$100 billion each year

We have seen that FTTs are a not insignificant source of revenue for many countries (see Figure 1): between €3 billion and €4 billion for the United Kingdom, more than €2 billion for South Korea, Hong Kong and Taiwan, €1.5 billion for Switzerland, and so on. In France, the tax receipts are less than €1 billion.<sup>82</sup> Although this is half as much as was initially envisaged, it is five times the budget of Paris 1 Panthéon-Sorbonne University<sup>83</sup> and ten times the AMF's budget, for example.

If FTTs were more widely applied, how much could they generate? There are many estimates of the potential receipts and they are always substantial.

- The European Commission<sup>84</sup> initially estimated tax receipts from across the European Union (EU27) at €57 billion, with two-thirds coming from the taxation of derivatives.<sup>85</sup> This is a huge amount given that the EU's total budget came to €145 billion in 2015. The tax receipts from a Europe-wide FTT would therefore double the sums earmarked for "social, economic and territorial cohesion" or "sustainable growth", for example.
- The receipts from the enhanced cooperation member countries (EU11) alone would be around €30 - 35 billion, or the equivalent of around 0.5% of the GDP of the countries in question.
- For the United States, the CEPR think tank estimated, in 2009, that tax receipts could amount to between \$177 billion and \$354 billion.
- Finally, according to the summary report published by the Institute of Development Studies<sup>86</sup>, a tax covering all the spot and futures markets worldwide would raise between \$147 billion and \$1,631 billion, depending on whether or not over-the-counter markets are included.

These estimates are of course highly sensitive to the assumptions made regarding the type of tax and therefore investors' reaction (measured by the elasticity of volumes to the tax). They also depend greatly on the exemptions and the potential for avoidance.

The estimates made to date arrive at an exemption and tax avoidance rate of around 20%. As we have seen, however, this rate is now much higher in practice, particularly because of the explosion of high-frequency trading, which is effectively exempt.

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<sup>80</sup> Colliard J.-E. and Ph. Hoffman, 2015, « Taxes sur les transactions financières : Théorie, expériences et implémentation », *Opinions & débats*, n°9.

<sup>81</sup> Biais, B., Th. Foucault and S. Moinas, 2013, "Equilibrium Fast Trading", *TSE Working Paper*, n°13-387. See also *Les Echos*, 23 mars 2016. <http://www.lesechos.fr/finance-marches/marches-financiers/021787525221-bruno-biais-il-faudrait-une-taxe-sur-les-investissements-technologiques-realises-par-ces-traders-1209069.php>

<sup>82</sup> This represents about a quarter of the Contribution to public broadcasting (*Contribution à l'audiovisuel public*) and to one fifth of the wealth tax (*Impôt de solidarité sur la fortune*).

<sup>83</sup> Paris 1 Panthéon-Sorbonne University hosts more than 40,000 students. It ranks first in France in the Arts and Humanities section, and holds the 33<sup>rd</sup> position in the *Times Higher Education* 2015-2016 worldwide ranking

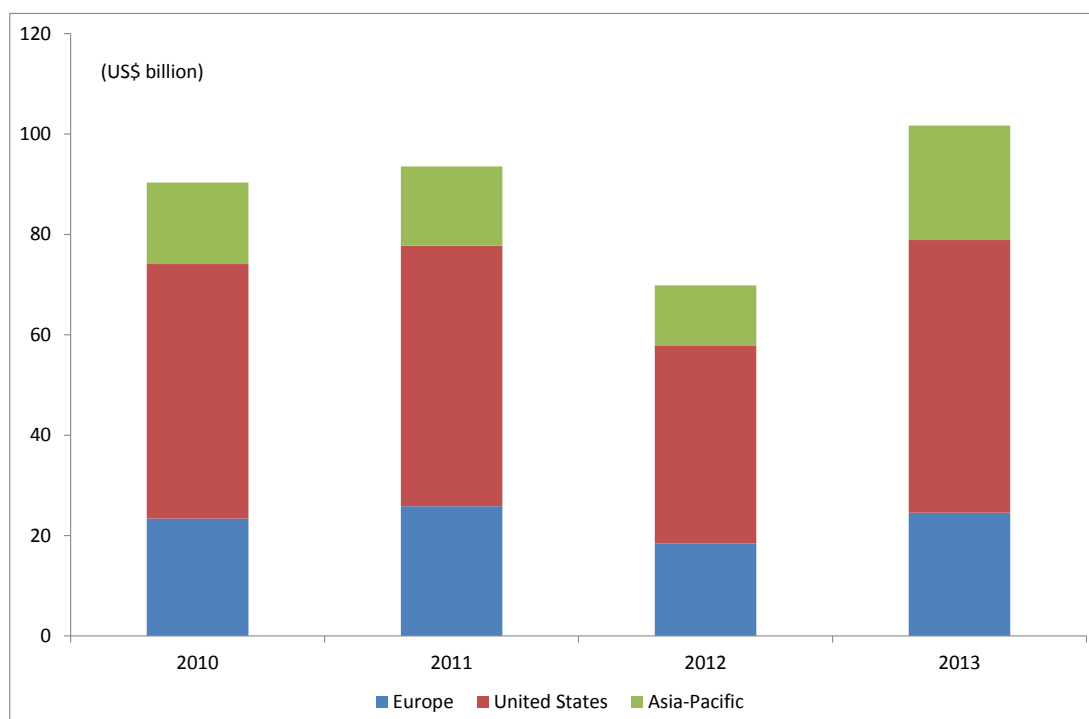
<sup>84</sup> European Commission, 2011, "Revenue Estimations and Executive Summary of The Impact Assessment", Technical Fiche to IA.

<sup>85</sup> Other estimates are even larger. For instance, a WIFO study estimates annual revenues of €310 billion for Europe (including Norway and Switzerland). See Schulmeister S., 2011, "Implementation of a General Financial Transactions Tax", WIFO.

<sup>86</sup> McCulloch, N. and G. Pacillo, 2011, "The Tobin Tax: A Review of the Evidence", IDS Research Report, n°68, Institute of Development Studies. This study lists all the estimates that have been provided to assess the potential revenues of a Tobin tax (mostly applied to exchange rate operations). These estimates span a wide range, and lie between \$10 billion and \$376 billion a year. See also Tax Research LLP, 2010, "Taxing Banks. A Report Submitted to the International Monetary Fund", Norfolk: Tax Research LLP. The differences are explained by the hypotheses on the tax base (spot markets and/or regulated derivative markets and/or OTC derivative markets and/or currency markets, etc.), on the volumes of transaction on these markets segments to compute the estimate, as well as on the tax rate to be applied.

Another approach consists of extrapolating global revenue from existing taxes. If we look at the case of British stamp duty, this FTT, with a nominal rate of 0.5%, applies to transfers of ownership and brought in £3.1 billion in 2013, while the total volume of trades in UK shares was £3,600 billion, i.e. an implied rate of 0.1%. In the same year, stock market transactions worldwide (Europe, North America and the Asia-Pacific region – Thomson Reuters data) totalled more than \$100,000 billion. **Based on a very conservative estimate, if British stamp duty, despite its many exemptions, were applied in the majority of the world's main countries, tax receipts would be around \$100 billion a year** (see Figure 5). Trades in US shares would provide half of this sum, compared with a quarter for European shares and another quarter for shares in the Asia-Pacific region. To get an idea of the scale involved, these \$100 billion represent the equivalent of the amount required to fund measures to combat climate change, with reference to COP 21.

**Figure 5: Estimated tax receipts from a worldwide FTT extrapolated from the UK Stamp duty**



Source: Thomson-Reuters data for transaction volumes. Calculation: author.

#### ■ A modest collection cost

In fiscal terms, FTTs also offer a huge advantage: their particularly low collection cost.<sup>87</sup> This comes to around 0.02% of the sums collected from British stamp duty, a rate which is 75 times lower than for income tax.<sup>88</sup> For French FTT, collection is mostly managed by Euroclear the central depository, which is also responsible for conducting a series of checks (checks on receipt, ex-post checks and consistency checks).<sup>89</sup> In exchange, Euroclear has around twenty days to pay the French tax authorities the tax that it collects from its participants.<sup>90</sup> The collection cost in France is therefore equal to the interest from the retention of the tax by Euroclear.

<sup>87</sup> EY, 2014, "FTT – Collection methods and data requirements", Specific Contract No 3 TAXUD/2013/DE/314.

<sup>88</sup> Hawkins, M., and J. McCrae, 2002, "Stamp duty on share transactions: Is there a case for change?", *Institute for fiscal studies*.

<sup>89</sup> Cf. Décret n° 2012-956 du 6 août 2012.

<sup>90</sup> The timeline for collection is the following: FTT must be paid at least on the 4<sup>th</sup> calendar day of the month following the corresponding transaction (04/M+1), then Euroclear pays the French Treasury on the 24<sup>th</sup> day (24/M+1). Euroclear has yet another month (24/M+2) to send the results of its control operations to the fiscal authority.

Also note, in the interests of thoroughness, that there is also a cost for financial intermediaries relating to the development and management of the FTT payment system. The fact that FTT is collected by the central depository minimises this cost (and particularly its variable portion), however, by pooling it with the other costs relating to the settlement/delivery and custody of securities. This cost is also probably minuscule compared with the billions spent by financial intermediaries in their race to constantly increase their order transmission speed.<sup>91</sup>

#### ■ A tax with redistributive effects

The rate of share ownership by households is traditionally quite low, especially in France, and share-owning households usually have a high income. In 2015, for example, whereas 85% of households living in France had a savings passbook, only 16% owned securities (down from 24% in 2010, moreover).<sup>92</sup> The ownership rate differs greatly between socio-professional categories. In 2015, it stood at 30% for managers and executives and more than 40% for members of the freelance professions, *versus* less than 10% for office and manual workers. Leaving the ownership rate aside, the wealth held in the form of shares is of course much greater for households with the highest income and net worth.

**FTTs have redistributive effects because of the large disparities in share ownership.**

#### ■ How should tax receipts from FTTs be allocated?

The question remains what to do with FTT tax receipts: should the receipts be paid into the countries' overall budgets or be allocated to specific expenditure (such as development aid)?

It is worth recalling one of the major principles that governs public finances, namely the principle of budget universality, which imposes the rule of non-allocation. This rule prohibits the allocation of tax revenue to the financing of specific expenditure. There are now many exceptions to this rule (the contribution to public broadcasting, for example), which dates back to Restoration France, but it is still one of the main budgetary principles.

Non-allocation is therefore the default principle, but there are several arguments in favour of allocation. The main argument is transparency; allocation facilitates support for and consent to taxation. It is also an effective solution when receipts are linked to international activities that it is difficult to attribute to a given country (case of the tax on plane tickets or the Tobin tax, for example) or when it comes to financing global public goods. Finally, for NGOs the argument is more political, and the allocation of the proceeds of FTT would make resources related to development aid sacrosanct.

Part of the receipts from the FTT in France (10% initially, increased to 25% in 2016) are specifically allocated to development aid. This revenue is added to the receipts from plane tickets to raise funds for the *Fonds de Solidarité pour le Développement* (Solidarity Fund for Development), managed by the *Agences Française de Développement* or AFD (French Development Agency).

## CONCLUSION

Although the taxation of financial transactions is a very popular proposal, it has also long been viewed as an outrageous idea. It was rejected by most experts who believed that such an initiative was impossible to implement. And if it were possible, they feared that, by increasing transaction costs, this tax would reduce liquidity and increase market volatility. The 2007-2010 crisis has transformed the landscape. Although there are still major obstacles and the proposals are controversial, the debate is clearly now under way.

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<sup>91</sup> In 2010, Spread Networks spent \$300 million to install a fiber optic cable linking New York to Chicago with the sole goal of reducing the order transmission delay between the stock exchanges of the two cities from 16 to 13 milliseconds...

<sup>92</sup> Source: Insee, "enquêtes Patrimoine" 2009-10 et 2014-15.

Discussions about FTT invariably focus on its effect: some hope that it would reduce market instability by discouraging speculation, while others are opposed to it, fearing greater volatility because of a lack of liquidity. Empirical studies disprove both sides. FTT, as it is applied today, is not a Pigouvian tax: it has very little impact on the markets. It is neither the catastrophe feared by some, nor the panacea hoped for by others.

FTT is a good tax that is both modern and efficient. A tax with a broad base and a low rate which does not create distortions and generates considerable revenue for a modest collection cost. If the British stamp duty were extended to the world's main countries, it would raise at least around \$100 billion a year, which would be enough to fund anti-climate change measures, for example. FTT might also be extended to derivatives and intra-day transactions, which would increase receipts collected. This admittedly requires adapting the collection system, but this can only improve financial markets transparency.

FTT is also a strong symbol and this matters when it comes to tax. The tax is often viewed as symbolic rather than efficient. This overlooks the fact that "consent to taxation" is a founding principle of democracy. FTT would therefore demonstrate a willingness to reform the financial sector. At European level, if the European Commission's proposal were to be (finally) enshrined in law, this would be an important first for tax cooperation.

Ultimately, this is not about punishing bankers or the markets, or even really reducing instability. Regulatory instruments are more suited to these purposes. The primary objective of FTT should be to raise funds. It is of course important to design it properly to limit the negative effects. The European proposal has been carefully thought out to avoid the main pitfalls and recent experience provides for optimism.