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# IMPROVING RESILIENCE, INCREASING REVENUE

**The case for modernising the UK's  
Stamp Duty on shares**

PROFESSOR AVINASH PERSAUD

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*Avinash Persaud's career spans finance, academia and public policy. He was a senior executive at J. P. Morgan, Union Bank of Switzerland and GAM London Limited and routinely ranked in the top three, worldwide, of debt and currency analysts. He currently holds a number of senior board appointments including non-executive chairman of Elara Capital, an emerging market specialist, and Intelligence Capital Limited, a financial advisory firm to institutional investors. He is Emeritus Professor of Gresham College, a former Governor of the London School of Economics, past President of the British Association for the Advancement of Science (Economics) past Member of Council of the Royal Economics Society, past director of the Global Association of Risk Professionals, Executive Fellow of the London Business School and winner of a number of research awards including the Jacques de Larosiere Award in Global Finance. He was a Member of the UN Commission on Financial Reform and chair of its regulatory sub committee. He was chairman of the Warwick Commission and a Member of the Pew Task Force to the US Senate Banking Committee. He was an Expert Member of the UK Treasury's Audit and Risk Committee and was voted one of the top three public intellectuals in the world on the financial crisis by an expert panel for Prospect Magazine.*

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## 1. INTRODUCTION AND EXECUTIVE SUMMARY

Much has been written about the benefits and revenue potential of Financial Transactions Taxes (FTTs) in general. In response a lot has been said about a potential relocation of trades, business and finance jobs from tax jurisdictions to non-tax jurisdictions. The purpose of this paper is to explain how the UK stamp duty can be extended in a way that captures most of the benefits and additional revenues, without causing relocation from London to New York. This depends on the basis of taxation, the selection of instruments and activities and the choice of tax rates. Limiting any potential for relocation reduces the potential revenues, however, our recommended extensions to the UK Stamp Duty will raise an additional £4.7bn per annum or £23.5bn during the life of a parliament. These revenues are significant. Few sustainable tax initiatives would raise more. But perhaps more importantly, extending the stamp tax will reduce systemically dangerous behaviour in financial markets. This will likely be even more important in a post-Brexit environment. It will also compliment future efforts to shift the focus of the UK economy towards more sustainable and long-term growth and development outside of the EU. It will also have the positive benefit of shining a torch on the off-shore assets of UK residents wherever they may be held or traded.

The UK's FTT, a 0.5% stamp duty on the purchase of shares issued by UK companies, is one of the oldest UK taxes. Despite being around for 322 years and not benefitting from any modernisation over the past 30 years when substantial innovations were taking place in finance, it remains one of the least evaded of taxes. Without a (now digital) stamp on the record of the transfer of ownership of shares that the purchaser has paid the duty, the transfer of title is not legally enforceable in the

UK. Ensuring that their ownership of shares is not in doubt, overseas investors in UK stocks account for approximately half of the tax paid. This is one of the highest proportion of foreign payers of any major UK tax. Despite its long pedigree, stamp duty has the hallmarks of a 21st century tax. It is, for instance, collected digitally at settlement by an international company headquartered outside of the UK and is one of the cheapest, if not the cheapest of all UK taxes to collect.

Today, stamp taxes on share transactions are not just about revenues, but like taxes on carbon emissions or capital requirements for banks, they also act to curb socially dangerous behaviour. The stamp duty is a tax on the excessive churning of the investments of ordinary savers by their asset managers. Churning has been shown to cause considerable losses to pensioners and savers – over the life of some UK pension plans, fees and commissions take out the equivalent of 80% of money originally paid in.<sup>1</sup> It is a tax on the kind of high-frequency trading behaviour that undermines market liquidity and integrity. It taxes and records transactions in UK shares by those off-shore. Most importantly of all from an economic perspective, it is a tax on the buildup of systemic risks. By reducing systemic risks and the excessive churning of savers' portfolios; by raising revenues from off-shore held assets and by improving market integrity, this tax will have a significantly positive impact on economic welfare. It can also play a critical part in guiding the UK financial sector towards a more sustainable business model in the UK's post-Brexit future.

Those that derive benefits from the churning of investment portfolios like brokers and banks are steadfastly against the tax. They argue that a transactions tax is not feasible

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<sup>1</sup> This was the conclusion of BBC's Panorama investigation using figures provided by the Consumer Financial Education Body. See, [http://www.bbc.co.uk/pressoffice/pressreleases/stories/2010/10\\_october/04/panorama.shtml](http://www.bbc.co.uk/pressoffice/pressreleases/stories/2010/10_october/04/panorama.shtml)

unless it is levied across the world, that it would be easily avoided by canny investors, that it would lead to a relocation of jobs and income out of the country and that it would curb liquidity and increase the cost of firms raising funds. In large part the arguments used against stamp duties are meant to obfuscate and confuse. They have gained credence from their repetition by those who should know, but they boldly fly in the face of the facts. A failed Swedish tax is the favourite pet of anti-tax advocates, but this was a local brokerage tax that investors avoided by using foreign brokers. It is not comparable to a stamp duty. Some of the largest, fastest growing, most liquid, less volatile stock markets in the world have long had Financial Transaction Taxes and they have raised considerable sums every year from them.

The trading industry is very noisy about the prospect of job or GDP losses from small transactions taxes. Yet any adverse impact of the costs of a tax must be similar to the effect of other transaction costs. Recent research has shown that the average cost of financial intermediation services for the non-financial sector is just under 2.0% and is the same as it was a hundred years ago.<sup>2</sup> All of the efficiency gains since then, as a result of the new information technologies, globalisation, and other developments, have been captured by those who run the industry and not shared with consumers. This has been one of the single largest contributors to worsening income inequality. An extension of the stamp duty will disrupt this and the question that the industry protagonists need to answer is if a 0.5% tax would cause strife, what is the 2.0% cost of finance charged by the industry to the non-financial sector doing?

Recently some countries have reintroduced or added new FTTs including France, India and Italy. Others have announced that they intend to introduce FTTs such as China and eight other countries in the EU. One of the reasons for increased interest in FTTs is that recent developments in the exchange of information between tax administrators allows the scope of FTTs to widen beyond the basis of the current stamp duty – the domicile of the issuer of a security – to include the residence of the beneficial owner of the security. All taxes create incentives for avoidance and evasion in proportion to the size of the tax. The new transparency on beneficial ownership, along with anti-money laundering rules make it significantly easier for tax authorities to tax transactions by residents in securities which are domiciled anywhere, like derivatives. In the past the authorities had a relaxed attitude to attempts by the financial sector to avoid local taxes through the use of international subsidiaries, but in recent years this has changed. Fines on banks for avoiding or evading anti-money laundering rules or for flouting other financial rules have amounted to £252bn since the Global Financial Crisis.<sup>3</sup> The size of these fines, has concentrated the minds of shareholders and managers on behaviour that runs the risk of incurring more fines.

The new FTTs introduced by France (2012) and Italy (2013) are intended to be forerunners to a wider European Financial Transactions Tax of 0.1% of the value on both the purchase and sale of all securities such as shares and bonds (except for sovereign bonds) and a 0.01% tax on the face value of their derivatives. Under the enhanced co-operation procedure, ten countries in the EU representing over 80% of Eurozone GDP, are negotiating the adoption of a European FTT by 2017. This

<sup>2</sup> See, “Has the US Finance Industry Become Less Efficient? On the Theory and Measurement of Financial Intermediation”, Thomas Philippon, NBER and CEPR, 2014. An earlier version of this paper was presented at a conference organised by the Banque de France in 2012.

<sup>3</sup> See, “CCP Research 2015”, CCP Research Foundation, 2016: <http://foreigners.textovirtual.com/ccp-research-conduct-costs/274/202565/conduct-costs-project-report-2015-final.pdf>

grouping includes the EU's largest economies, Germany, France, Italy and Spain. Compared to the UK stamp duty, the proposed European FTT is lower in tax rate, wider in incidence across financial instruments and narrower in exemptions. Under the European FTT, there is currently no exemption for intermediaries except for illiquid stocks. In the UK, this exemption from the stamp duty covers more than 50% of the daily turnover on the London Stock Exchange.

An examination of the UK and international experience with FTTs, including the Swedish

experience and new developments in the field of tax information exchanges suggest that it would be possible to largely remove the market maker exemption and broaden the incidence of the tax to cover transactions in corporate bonds and cash flows arising from equity and credit derivative transactions. In addition to significantly improving the resilience and sustainability of the financial system, these changes would lead to an additional £4.7bn per annum of tax revenues. This figure could be larger if UK Government Bonds (Gilts) were included and our proposed tax rates were raised.<sup>4</sup>

## 2. ONE OF THE OLDEST TAXES, CHEAPEST TO COLLECT AND HARDEST TO EVADE

Stamp duty was introduced in England on 28 June 1694, during the reign of William and Mary, to help finance the war against France.<sup>5</sup> It pre-dates the introduction of income tax (1698). The revenue raised from more than 3 million stamps proved critical in prolonging the war until the French Treasury was exhausted and Louis XIV accepted William III as the King of England over the claim of James II. Just over a hundred years later the stamp duty on share transactions became an ad valorem tax. Much of today's law on stamp duties follow from the 1891 Stamp Act. In addition to the duty on transfers of shares, a stamp tax was also charged on the settling of cheques. Lloyd George's government raised this tax on cheques from 1 to 2 pence in 1918 to help pay for the First World War and it was only removed 53 years later by the Heath Government.

Stamp duty was the winning entry in a public competition in the Netherlands held sometime

before 1624. The competition was for a new tax that would be hard to avoid or evade and cheap to collect. It is these characteristics that make it the oldest tax HMRC and many other tax authorities still receive. Unless the legal transfer of title has been stamped by the Stamp Office, indicating that the new owner has paid their taxes, the transfer of ownership of shares cannot be legally enforced. No investor will purchase an asset where their legal title to that asset is in question. Relocating where the trade takes place or where the new owners or their intermediaries are domiciled does not allow someone to avoid the tax if they wish to have legal title to UK property or shares. This is why more than £1.5bn or 50 percent of revenues from stamp duties on share transactions are paid by non-residents, giving it one of the most international footprints of any major UK tax.<sup>6</sup>

<sup>4</sup> Very short term Treasury bills and gilts, which are effectively forms of cash as opposed to an investment, would be excluded.

<sup>5</sup> See, "Creating a Good Impression: three hundred years of The Stamp Office and stamp duties", by H. Dagnall, London, HMSO, 1994.

<sup>6</sup> See House of Lords, European Union Committee, "Towards a Financial Transaction Tax?" (HL Paper 287, London: Authority of the House of Lords, 2012), [www.publications.parliament.uk/pa/ld201012/ldselect/ldcom/287/287.pdf](http://www.publications.parliament.uk/pa/ld201012/ldselect/ldcom/287/287.pdf).

The oft-repeated notion that FTTs are only possible if the whole world, without the smallest exception, adopts them is evidently false. The IMF's Report to the G20 on Financial Sector Taxes<sup>7</sup> identified over 20 major countries with "unilateral" FTTs. Outside of advanced economies like France, Italy, Singapore, South Korea, Switzerland and the UK the list includes countries with some of the fastest-growing economies such as China, Hong Kong, India, Indonesia, Taiwan and Turkey.

The United States has a small FTT established under Section 31 of the 1934 Securities Exchange Act to fund the US Securities and Exchange Commission (SEC), the primary non-bank regulator. Currently, the fees are \$0.0044 for every round trip transaction (buy and sell)<sup>8</sup> The tax has been so successful that over the years it has routinely produced more revenues than required and has been trimmed to reduce the tax take below the costs of the SEC. In hindsight, these extra funds, which reached a high point just before the Global Financial Crisis, may have been a useful indication of the need for more investment in financial regulation.

In the past "Bearer shares" could be used to avoid the tax. The owner of bearer shares, as the name suggests is whoever is holding them at the time not who they are registered to, allowing the real ownership of the shares to be kept secret. There are many benefits to being a registered owner of shares, including legal enforceability, and so bearer shares were little used. They were popular with those facilitating the flow of illicit funds and for that reason they

were progressively banned by many countries, including the UK Government in 2015.<sup>9</sup>

A company could move its residency to put its share registry in a non-tax jurisdiction. However, there are more important considerations that drive the residency of a company than saving a tax the companies themselves do not pay directly,<sup>10</sup> such as the level of corporation taxes, legal environment, public grants, patent and other legal protections and commercial advantages. To underscore the dominance of these other factors, the cost of raising equity capital is lower in the UK than in the US but this has not led to a switch of all Initial Public Offerings (IPOs) to the UK.<sup>11</sup> It is noteworthy that the stamp tax is not levied on companies or their profits but levied on investors in proportion to the amount they buy and sell their share portfolio. Companies may secretly like a tax that incentivises more long-term shareholdings.

## 2.1 The UK FTT raises £3.3bn, but exemptions cost £1.5bn

In the fiscal year to April 2016, the UK raised £3.3bn<sup>12</sup> through stamp duties on stocks, shares, and other liable securities, the vast majority collected in the form of the Stamp Duty Reserve Tax (SDRT) on paperless share transactions. This tax raises about the same as the insurance premium tax (£3bn) and the air passenger duty (£3bn). It is also less than it could be. In response to pressure from the financial sector, the tax has not been updated in thirty years. This is despite substantial

<sup>7</sup> See, <https://www.imf.org/external/np/seminars/eng/2010/paris/pdf/090110.pdf>.

<sup>8</sup> See, <https://www.sec.gov/news/pressrelease/2016-2.html>.

<sup>9</sup> See, section 84 of the 2015 Small Business, Enterprise and Employment Act.

<sup>10</sup> Buyers of the shares of a company pay the tax, not the company.

<sup>11</sup> See, "The Cost of Capital: An International Comparison", Oxera, June 2006.

<sup>12</sup> See, "Annual Stamp Tax Statistics 2015-16", p.6: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/556321/AnnualStampTaxes-Release-Sep16.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/556321/AnnualStampTaxes-Release-Sep16.pdf)

financial innovation which has necessitated major revisions in other financial regulation. Over the past thirty years, the international agreement on bank capital adequacy (the Basel Accords) has been completely overhauled on no less than three occasions. Amendments have often been needed as a result of financial participants' repeated attempts to "game" regulations over time.

One of the consequences of the neglect of the UK FTT is that the exemption from the tax by intermediaries – those buying or selling on behalf of others – has been increasingly abused. This exemption has not only impacted revenues but has also significantly reduced the effectiveness of the tax in reducing systemic risks that stem from the dominance of high frequency trading in the marketplace. Historically, market-making activity represented around 15% of turnover on an exchange, but today around 40–50% of turnover claims the market maker exemption. Even after assuming a significant reduction in this activity, if it was taxed, we estimate that this exemption needlessly costs the exchequer almost £1bn per annum, (see Appendix 1 for our calculations).

In recent years the incidence of the tax has also been chipped away. In 2008, share transactions with a value of less than £1,000 were exempted from stamp duty opening the possibility that trades could be divided up in sub-£1,000 parcels to avoid the tax. In 2014, transactions in securities listed on small or high growth exchanges such as the LSE's AIM and High Growth Segment became exempt. Trends in the tax take relative to trends in stock turnover suggests that these two

exemptions have cost the exchequer a further £500m per annum.<sup>13</sup>

## 2.2 Stamp duties are cheaper to collect than almost any other tax

In the case of the UK, 90% of the share transaction tax revenue (the Stamp Duty Reserve Tax or SDRT due on electronic 'paperless' transactions) is automatically collected via the central securities depository. This is managed by Euroclear, a company headquartered in Brussels, Belgium. It should be noted that for much of the existence of SDRT, Belgium did not itself have a Financial Transactions Tax and so contrary to many stories of how these taxes will be evaded by the relocation of trades overseas, this tax was for a long time seamlessly and cheaply collected abroad in a non-FTT jurisdiction. Euroclear also provides central clearing and settlement services for Belgium, Finland, France, Ireland, Netherlands, and Sweden.

Since 1986, there has been a digital stamp, making the stamp tax one of the first digital taxes, one of the most modern and one of the cheapest taxes to collect. According to a study by the Institute for Fiscal Studies, stamp taxes cost just 0.09 pence for every pound collected versus 1.56 pence (or 17 times more) for collecting income tax and 1.33 pence for collecting capital gains tax.<sup>14</sup>

<sup>13</sup> In 2007/8, prior to the most recent exemptions and the Global Financial Crisis (GFC) the tax collected had risen steadily to £4,168m per annum. However, the GFC and subsequent policy responses led to a decline in stock exchange turnover and only half of the reduction in revenues can be put down to the new exemptions. See Stijn Claessens, Michael Keen, and Ceyla Pazarbasioglu, "Financial Sector Taxation: The IMF's Report to the G-20 and Background Material", IMF, September 2010, <http://www.imf.org/external/np/seminars/eng/2010/paris/pdf/090110.pdf>.

<sup>14</sup> See, "Stamp duty on share transactions: is there a case for change", M. Hawkins and J. McCrae, IFS, (2002) <http://www.ifs.org.uk/comms/comm89.pdf>



### 3. FTTS CURB SYSTEMIC RISK AND IMPROVE RESILIENCE

If a small Financial Transactions Tax did not yield much revenue, there would still be strong economic reasons for having it. FTTS improve the systemic resilience of the financial system in a number of distinctive ways. By doing so transactions taxes reduce the economic, social and human costs of financial crises. In 2013, the US Government Accountability Office (GAO), put the cost of the 2008–2009 financial crisis in the US at \$22trn. Sixty percent of this loss came from a reduction in economic output. The GAO explains that it is hard to arrive at a fully comprehensive number of the cost of the crisis and so despite its size, \$22trn is likely to be an underestimate of the costs to the US economy of the crisis.

It would be reasonable to assume that the costs to the UK would be proportionally similar to those in the US. The decline in UK output was just as large, the size of the bank rescue operation was proportionally bigger, and the financial sector is a larger share of GDP in the UK than in the US. If costs were proportional on either side of the Atlantic, the overall bill from the financial crisis in the UK would be £3.4trn or 166% of GDP.<sup>15</sup> In presenting the increased capital adequacy requirements for banks, regulators argue that by raising such requirements they will reduce the likelihood of a crisis of this proportion by more than 2.5% justifying the costs to banks and the higher cost of raising finance. This section and the next show how FTTS reduce the build up of systemic risks in more comprehensive ways

than new bank regulations and so using a similar cost-benefit framework as used in assessing new bank regulation, there is a strong economic case for FTTS.

Apart from taxing social externalities that directly contribute to systemic risks, FTTS reduce other general distortions. There are inherent features of the financial sector that lead to it being undertaxed compared to other sectors of similar economic weight and compared to the cost of the Government guarantee to the financial system. Banking, for instance, is largely exempt from Valued Added Taxes, as are interest payments, because of the difficulty of separating value added services and payments for banking activity.<sup>16</sup> These implicit subsidies led to the over-production and consumption of financial services that represents costs and risks to the rest of the economy. The 2010–2015 Coalition Government in the UK accepted the general point that the financial sector was under taxed and introduced a bank levy on the size of bank balance sheets. In 2014 this raised approximately £2bn. However, in 2016, the Conservative Government announced it would reduce the levy over time.

There are a number of important qualitative reasons for why a financial tax should be based on transactions. These relate to integrity, transparency and equity. In a financial world inhabited by “dark pools”<sup>17</sup> and “internal crossing”,<sup>18</sup> small transaction taxes shine

<sup>15</sup> Measured by GDP, the UK economy is approximately 23% of the size of the US economy, see [www.IMF.org](http://www.IMF.org).

<sup>16</sup> See Chapter 8, “Tax by Design”, IFS. 2011.

<sup>17</sup> Dark pools are where financial firms create an anonymous space where clients can match their orders with other clients. Recently clients have raised concerns that banks have given High Frequency Traders access to these Dark Pools which they have used to the disadvantage of others.

<sup>18</sup> Internal crossing is where a bank with a client who wishes to buy a security is matched with another client who wishes to sell the same security without going through a public or broadcast exchange. The potential efficiency of these crosses comes with considerable opaqueness and concern that the bank may be making an unseen profit from the trade.

a torch on transactions that improve the integrity of the marketplace ensuring that all participants get a fair, comparable, transparent deal. Market integrity is critical to spreading the benefits of financial markets. Transaction taxes also force transparency onto whether asset managers are churning investment portfolios needlessly, or tax residents have undeclared off-shore assets.

### **3.1 FTTs tax the systemic risks behind the large discrepancies between gross and net exposures**

Systemic dangers lurk where there is no hindrance to circular activities that, through rapid velocity, give the impression of great citadels of value. When, transaction costs are low, banks are incentivised to engage in a large amount of offsetting transactions. This is because they earn commissions on the gross but are required to have capital against their net exposures. Two banks with the same net exposures would have the same capital requirement, but one may have much larger gross exposures and hence more fees than the other. In the derivatives market, for instance, gross exposures are approximately 70 to 100 times net exposures. In the case of Deutsche Bank, its total level of derivative exposures in 2016 was reported as approximately \$73trn while its net exposure was closer to \$1trn.<sup>19</sup>

Most of the time it is the net exposure that matters. However, in a crisis, when everyone tries to find the door at the same time, fear rages and many counterparties appear to be bust, it is the gross exposures that

overwhelm the system. In September 2008, when financial markets were in turmoil and credit counterparty risk was high, it was estimated that while Lehman's net exposures at risk were only \$6bn, if its counter-parties failed and it couldn't net out its exposures, it would face a \$400 billion loss on its credit derivative exposures.<sup>20</sup> Speculation of a potential \$400bn loss gripped the market and spread panic. Consequently, while it makes sense to require financial firms to finance part of their net exposures with capital, it also makes sense for their to be a cost to the size of gross transactions. A small tax on gross transactions would disincentivise banks from engaging in the systemically dangerous build up of large gross exposures fronted by small amounts of capital reflecting small net exposures. In the last crisis, the countries which suffered the most were those with the greatest levels of financialisation as measured by equity market capitalisation or private sector debt as a percent of GDP. FTTs internalise the systemic costs of excessive financialisation. This would improve the systemic resilience of an economy.

### **3.2 FTTs tax the systemic risks of a disproportionate amount of short-term trading versus long-term trading**

One of the most powerful ways to prevent financial crises is limiting the size of booms. Crashes follow booms. The bigger the boom; the deeper is the crash. Booms follow a deviation of the market from a fundamental path. Financial market participants like to

<sup>19</sup> See, "Don't always believe a balance sheet", John Kay, *Financial Times*, February 16, 2016.

<sup>20</sup> To understand counterparty credit risk, consider that you took out insurance against the default of a supplier. The market risk in this contract is the risk that the supplier defaults or not, the credit counterparty risk is the risk that given a default, the insurance company that promised to pay you if a default takes place, has gone bust, perhaps because it had insured too many people against the same risk. For a similar line of argument see also, SUMMERS, L., SUMMERS, V., 1989. "When financial markets work too well: A cautious case for a securities transaction tax", *Journal of Financial Services Research* 3, 261–286.

argue that the more turnover there is, the more liquid and stable markets become. In a seminal paper, Brad DeLong, Larry Summers and colleagues demonstrate that it is not just the size of markets that matters but their composition.<sup>21</sup> They show that asset market booms are more likely to be sustained and become large if there is a preponderance of short-term or “noise traders” in the market relative to long-term fundamental investors. This is what we have observed.

Share transactions by long-term investors such as pension funds and insurance companies used to represent over 70% of the turnover of the London Stock Exchange but today that figure has slumped to 40%. The trend of an increasing proportion of trading being carried out by high-frequency traders has coincided with an increase in episodes of short-lived but high market volatility. Most notably has been the advent of flash crashes. On 6 May 2010 the US stock markets fell over 600 points in 30 minutes. On 15 October 2014, ten-year US

Treasury yields fell by 29 basis points in just over an hour — a move equivalent to almost seven standard deviations of daily historical changes — before retracing most of the fall by the end of the day. On 15 January 2015, the Swiss franc appreciated by 28% against the euro in 20 minutes, before ending the day 19% below its intraday high. Between April and May 2015, there was a large and rapid rise in German bond yields. Mini flash crashes have become common. The number of days the market has moved by more than 2%, have increased steadily.

In Section 5 we explain why high-frequency trading only adds to market liquidity when liquidity is already abundant, but drains liquidity away when it is in short supply. Our point here is that a small tax on financial transactions intentionally falls disproportionately on short-term trading and rebalances the market towards a systemically healthier balance of short and long-term traders.

## 4. FTTS IMPROVE FINANCIAL SECTOR CONDUCT

Many providers of investment services, such as broker research, exchange, settlement and clearing houses get paid commissions on transactions. They make more money from customers who trade multiple times than customers with the same (or often many times greater) assets who trade infrequently. Investment service professionals are incentivised to try and churn the portfolios or attract the custom of those who trade at a higher frequency.<sup>22</sup> They do so by giving high frequency traders preferential access to information, research and trading services.

The business model of high frequency traders is dependent on these relationships. Many are sponsored, supported and become creatures of the banks and brokers. It was found that during the dotcom bubble (1997–2000) hedge funds were given preferential access to Initial Public Offerings over longer-term investors. In “IPO Pricing in the Dot-com Bubble”, Alexander Ljungqvist and William J. Wilhelm, Jr. show how bank brokers were incentivised through the promise of higher trading commissions to push long-term institutional investors behind the queue in awarding access

<sup>21</sup> J. Bradford DeLong, Andrei Shleifer, Lawrence H. Summers, and Robert J. Waldmann, “Positive Feedback Investment Strategies and Destabilizing Rational Speculation”, *Journal of Finance* 45, No. 2 (1990), pp379–95.

<sup>22</sup> Churning is the practice of executing trades for an investment account by a broker with the primary aim of generating commissions from the transactions.

to underpriced IPOs.<sup>23</sup> In turn, the hedge funds generated above normal returns from owning these IPOs. There have been a raft of legal disputes and fines surrounding allegations that banks have secretly given high frequency traders preferential access to dark pools of liquidity.<sup>24</sup>

#### 4.1 FTTs tax short-termism

Transaction based commissions create three significant distortions to the market. The first is that financial intermediaries are disproportionately biased in favour of short-term investors whose underlying purpose is to help the price-discovery process to the cost of long-term investors who grow an economy.

#### 4.2 FTTs tax the abuse of market integrity

The second distortion arises from the fact that a central part of the return strategies of some very high frequency traders is to spoof the market with a multitude of orders that are then cancelled. Once cancelled, price action and volumes can just disappear and in the process the market loses integrity. If ordinary investors begin to feel that the market is rigged against them, and as a result of the market's loss of integrity they limit or withdraw their interest and business, the wider economic consequences will be severe and multiple. To begin with the market will become genuinely less liquid and more volatile than it could be shifting activity elsewhere. The disproportionate amount of real estate assets in household savings compared to shares is

partly linked to their concern that the stock market is rigged against ordinary investors in favour of insiders. Market integrity may seem intangible but it is no less vital for it. This is why it's protection is one the three main stated objectives of financial regulation.<sup>25</sup> The UK's stamp duty ought to be extended to include cancelled trades so as to clamp down on "spoofing".

#### 4.3 FTTs tax churning

Asset managers and pension fund trustees have a fiduciary duty to maximise the interest of their clients and to refuse or disclose any payments from their bankers and brokers. However, financial intermediaries reward asset managers who turn over their portfolio more frequently with more attention, research, invitations to special events, internships for their kids, friendship and much else. The end result is that asset managers churn the investment portfolios of their clients excessively, incurring substantial brokerage fees that are seldom reported in a clear and transparent manner. While it is hard to prove deliberate churning one piece of evidence is that the performance that mutual fund managers deliver to their clients is almost always worse in the long-run than a passive investment strategy. The average mutual fund charges its clients transaction costs of approximately 1.0% per year on top of management fees while failing to beat the market average or benchmark index. None of the 2,862 mutual funds in the US managed to outperform the market for each year in the five years to April 2015. A small transaction tax is a countervailing force against commercial incentives that favour a level of transactions

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<sup>23</sup> "IPO Pricing in the Dot-com Bubble", Alexander Ljungqvist and William J. Wilhelm, Jr. *Journal of Finance*, Vol, LVIII, No. 2, 2003.

<sup>24</sup> See, "Dark Pool Settlements Bring Tangled Relationship to Light: Banks quietly catered to high-speed traders in dark pools", *Wall Street Journal*, February 1, 2016.

<sup>25</sup> The UK's Financial Conduct Authority has three objectives, one of which is to protect and enhance the integrity of the UK financial system.

that is good for trading businesses but bad for everybody else. The payment of this tax reveals the extent of churning.

In other areas of economic life, taxes based on the value of an activity are considered more efficient than taxes based on transactions. For instance, the IMF and others have proposed taxes on bank balance sheets to reduce the incentive to grow into a systemically important institution.<sup>26</sup> However, an important principle of economics is that if we are using a tax to

better reflect the wider, systemic, costs of an activity, the tax should be based on the activity that causes the systemic problems and if this activity is short-term trading and large gross transactions that largely net off in good times but not in bad, then the most appropriate tax is a transaction tax. A Pigouvian tax is a tax levied on any market activity that generates negative externalities which are costs not internalised in the market price. The FTT is a Pigouvian tax against the systemic risks and consumer costs of excessive churning.

## 5. THE REASON WHY THE FINANCIAL SECTOR IS SO STRONGLY OPPOSED TO FTTS

There has been no material, sustained, reduction in the cost of financial intermediation for non-financial customers for over 100 years. In 1880, it was just shy of 2.0% of a unit of financial intermediation – such as a loan, a bond or equity issue – and it was just shy of 2.0% in 2008.<sup>27</sup> The revenues of the financial sector reflect the cost of financial intermediation for the non-financial sector. What is striking is that while costs to customers of the financial sector have been stable as a percent of financial intermediation, the amount of intermediation has grown fourfold as a percent of GDP from 2.0% to 8.0%. Trading firms like to portray the high levels of turnover associated with this increased financial sector share of GDP as a sign of liquidity, efficiency and progress. But if it were so we should have seen a sharp reduction in the average cost of financial intermediation from the levels of the steam age.

What the exponential rise in trading reflects is a change in the business model of finance, partly in response to the regulation and implicit taxes on the old fashioned business of taking deposits and lending to businesses and earning the interest margin. Regulators require banks to support the loans on their balance sheets with capital such as their own cash or equity. Bankers consider this an implicit and costly constraint on their ability to make money. No capital is required, however, against fee-earning businesses, and little capital is required for the trading of liquid securities. Consequently, the financial sector in the 1980s in the US and the UK and other places later moved away from getting paid for holding loans on their balance sheets to getting paid for untaxed transactions, such as earning fees for originating a loan, for packaging a series of loans, for securitising them, for selling them, for buying them back and for managing them in investment portfolios. Today, banks write a lot of mortgages and hold a lot of mortgages,

<sup>26</sup> For a useful survey of alternatives, see “European Commission, Taxation Papers: Financial Sector Taxation” (Working Paper 25, Luxembourg: Publications Office of the European Union, 2010), [http://ec.europa.eu/taxation\\_customs/resources/documents/taxation/gen\\_info/economic\\_analysis/tax\\_papers/taxation\\_paper\\_25\\_en.pdf](http://ec.europa.eu/taxation_customs/resources/documents/taxation/gen_info/economic_analysis/tax_papers/taxation_paper_25_en.pdf). Also see the earlier reference to the IMF’s 2010 report to the G-20—Claessens, Keen, and Pazarbasiglu, “Financial Sector Taxation”.

<sup>27</sup> Philippon (2014).

but the mortgages they hold are no longer those they write themselves, but the packaged, securitised mortgages they bought in the marketplace after selling their packaged and securitised loans.

Banks (and, sadly, many regulators) have long argued that this ring around allows banks to be more diversified and therefore safer and brings down the cost of finance. This is taken for granted by many outside of the financial industry, but the evidence is to the contrary. Neither the cost of financial intermediation nor the cost of financial stabilisation measures has fallen as turnover has risen. Indeed, the systemic consequences of the new banking model where the objective of the individual players was to earn the same amount of income or more with less regulatory capital was always most likely to be one that was less safe and just as costly to consumers.

It is often argued that financial deregulation lowers the cost of finance, but while that should be so in specific instances, it has not proved so in aggregate. According to the analysis by Thomas Phillippon, the lowest point in the cost of financial intermediation to non-financial customers in the US occurred at the zenith of the old, regulated, banking model of the late 1960s.<sup>28</sup> The highest peaks in costs per unit of intermediation were in the late 1920s, just before the Depression-era regulation, and in the late 1990s soon after the 1933 Glass Steagal Act was dismantled. The data suggests that the repression of the regulated financial sector of the 1950s and 1960s contained financial costs and profits, and the deregulation in the 1980s and 1990s increased financial profits and risks, but did not reduce the cost of financial intermediation for the non-banking world – as was hoped. The implication is that there was a correlation in the rise of bankers' remuneration and the cost

to the nation of bailing out banks and this has been so. The relative pay of bankers has risen dramatically from the middle of the pack to the top. There was a £20bn increase in the share of income that went to the top decile of wage earners between 1998 and 2008 and £12bn of that went to the financial sector alone. Sixty percent of the increase in wage inequality in the UK from the 1980s is due to wage developments in the financial sector.<sup>29</sup>

At the heart of a model that delivered financial intermediation at the same cost as during the 19th century, but with substantially higher incomes for bankers, was one with a substantial amount of transactions between intermediaries. The FTT disrupts this transaction based model by taxing transactions. It will encourage a return to an economic structure where banks are less leveraged, make loans to their customers and where history suggests the cost of financial intermediation may be lower. It is hard to quantify this effect of the FTT but in my opinion it is likely to be even bigger than the systemic benefits identified in Section 4. One of the implications of this is that the financial sector will shrink relative to other sectors for whom financial intermediation is a cost. Economically, that must be a good thing and would be the best measure of efficiency in the financial sector. The analogy is legal costs. Lawyers and bankers represent transaction costs to the economy as a whole. Lower fees for lawyers may be bad for barristers and may lead to less lawyers, but lower legal costs of doing business is good for the economy as a whole. The FTT taxes a banking model that provides substantial private rewards to bankers. It is no surprise that raising the issue of a small tax on financial transactions is met with a forceful response from them.

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<sup>28</sup> See, Phillippon (2014).

<sup>29</sup> See, "Bankers' Pay and Extreme Wage Inequality in the UK", Brian Bell and John Van Reenen, Centre for Economic Performance, LSE, April 2010. <http://cep.lse.ac.uk/pubs/download/special/cepsp21.pdf>

## 6. ADDRESSING THE ARGUMENTS THE FINANCIAL INDUSTRY USE AGAINST FTTS

The industry uses a handful of strategies to try and silence proponents of Financial Transactions Taxes. The first is to ridicule those who support FTTs and allege that they do not understand finance. That is despite the illustrious pedigree of the idea from Lord Keynes to Nobel Laureates, Paul Krugman, Daniel McFadden and James Tobin, to successful investors, Warren Buffet, George Soros and John Bogle and many others.<sup>30</sup> The second strategy is to suggest that the tax would be completely avoided by the financial industry while the third is to argue that small transaction taxes would bring the entire financial system to its knees to the ultimate detriment of widows and orphans. These arguments do not stand up to scrutiny individually and are often contradictory.

Despite 300 years of opportunity to find ways of avoiding the tax the UK stamp duty still collects more revenues than customs duties and the London Stock Exchange is one of the largest stock markets in the world. Even without any international agreements, over 20 other countries in some of the fastest growing markets raise over \$30bn per year from transaction taxes. Markets with a preponderance of higher frequency trading suffer from flash crashes, shortages of liquidity when it is needed most and no cheaper cost of financial intermediation. The arguments against the FTT have fear but not facts on their side. Below we address the most common criticisms of the tax made by the industry.

### 6.1 The myth of relocation of financial business, particularly to the US

Financial sector lobbyists routinely threaten that banks will aggressively relocate if national governments impose any taxes on their activities or employees, not just the FTT. In 2008, Terry Smith, head of Tullett Prebon, a broker, grandly stated he would allow any of the company's 950 London-based staff to move overseas before the UK's 50 pence tax rate came into force. The Guardian reported six months later that so far "none ... have taken him up on the offer." Traders at a number of London-based hedge funds who moved to Switzerland have since returned to London, apparently claiming to be bored out of their minds. Boredom is an underused argument in the defence of higher income taxes. The essential point is that relocation involves a wider more complicated set of issues than the rate of one tax. In the case of FTTs, bankers have been making new threats of relocation that cling to the false idea that finance lives free in cyberspace. They say they will move their derivative trading operations from those European countries that are considering FTTs to London, New York or Singapore-based subsidiaries where there is currently no transaction tax on derivative transactions. However, this does not stand up to close examination especially from the perspective of the requirements of new financial regulation.

It is vital to recognise that the incidence of a Financial Transactions Tax is determined not by where the trade takes place but by the domicile of the instrument or in the case of recent FTTs in France and Italy additionally by the residency of the ultimate owner. FTTs are not a tax on trading venues, which would only

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<sup>30</sup> See, Tobin, J., 1984. "On the Efficiency of the Financial System", *Lloyds Bank Review*.

lead market participants to look towards other venues, but a tax based on the issuance of securities and the residency of their ultimate owners. Once this is understood it can be shown that there would be nothing to be gained from relocation of business. Those eligible for paying the tax because of their residency or where the instruments are issued will still end up paying it if they switched to a different trading venue.

If a US investor buying the share of a UK headquartered company decides to switch his intermediary broker from one based in London to one based in Hong Kong, the US investor would still pay the tax by virtue of the share being issued in the UK. They would have nothing to gain from relocation. Stamp duties are not brokerage taxes like Sweden's 1984 broker tax (see section 6.6).

If the UK company issued shares that it placed in an American Drawing Rights program so that US investors could buy them in the US, there is already in place a tax, paid at the higher rate (1.5%), for the sale of shares into the ADR program. The same applies to use of US based nominee accounts trading UK shares. The US investor still contributes to the tax and in the thirty years of operation of these arrangements there has been no hollowing out of UK listings in favour of ADR listings.

If the US investor were to trade an Australian share or a derivative issued by an Australian bank, using a London-based broker, they would not pay the tax because they are not UK tax resident and they are not trading a UK issued instrument. They would have no reason to switch their business elsewhere.

In the case of the recent French and Italian FTTs that also tax share transactions on the basis of residency, if a French resident decides to switch the purchase of a French share from those listed on the Euronext Paris exchange to those of the same company listed in New York, as long as she remains the beneficial owner of the shares, she will still need to report the purchase and pay the tax in her annual tax

return. Again, nothing is gained by her shifting the location of the trading venue.

It is worth reminding ourselves that while residents can buy or sell shares off-shore, the income and capital gains they receive are still reportable and taxable at home. In 2010, the United States passed the Foreign Account Tax Compliance Act (FATCA) to help enforce these responsibilities by imposing penalties and sanctions on non-US based financial firms with foreign accounts of US citizens that have not reported necessary details to the US tax authorities. This enforcement mechanism could be adopted by a post-Brexit UK and is being actively considered by the European Commission. The stamp duty also ensures that off-shore entities trading UK shares pay the tax, by virtue of the shares being issued in the UK and if the stamp duty were extended to other instruments such as corporate bonds this would significantly widen the amount of UK tax that off-shore entities would pay. Later we discuss the issues surrounding such extensions and the empirical evidence of the elasticity of their demand with respect to higher taxes.

If the trade is being conducted on behalf of a resident of a jurisdiction that taxes residents for transacting derivative securities, then the tax would still be due according to the tax residence principle. A substantial amount of derivatives are held by banks with many international subsidiaries and bankers often argue that they would just hold their derivatives in a foreign subsidiary. However, under the new regulations for capital adequacy and collateral requirements and their ring-fencing nationally, such switching between where instruments are held is far more expensive and complicated than some have suggested.

Where banks are transacting on their own account, they are required to put aside capital to protect themselves and their depositors against the riskiness of their exposures. Before the crisis this capital could be easily shifted between locations and therefore, derivative holdings could be distributed across jurisdictions to minimise tax and capital would



follow them. Following Lehman's collapse, capital is now ring-fenced within countries making this practice no longer profitable. Moreover, the vast majority of derivatives are now required to be centrally cleared and collateral placed against exposures. The collateral and the derivative exposure cannot be legally remote from each other. New and increased capital adequacy requirements on derivative instruments and increased capital and risk management issues would more than offset the saving of a small tax on the cash flows associated with the cash flow of derivative instruments. We shall return to the subject of derivatives below. In short, the new legislative and regulatory environment means that the UK stamp duty can now be extended to derivatives without causing relocation to NY and elsewhere.

## 6.2 The myth that strengthening and extending our current FTT on shares will hurt the City of London

The industry makes the claim that the entire edifice of finance is built on almost costless transactions and so higher transaction taxes will cause a significant proportion of financial transactions not to take place with consequential loss of jobs and GDP. This claim is not borne out by the empirical evidence and nor does it add up economically. Many in the finance industry appear to believe that taxes levied by governments are always evil, and private profits derived from fees are always good. Yet the impact of an increase in costs on the demand to carry out certain financial business is largely unrelated to whether that increase is to pay the Government or pay a private corporation.

Transaction costs come in many guises: broker commissions; trading spreads; the price

impact of trading, fees for clearing, settlement, and exchange; custodian ticket fees, transaction-related research; risk management costs; and other trade implementation costs. Market infrastructure costs alone, so not including the cost of market impact costs or brokerage fees, were \$95bn per annum worldwide in 2015 according to Oliver Wyman, a consultancy firm.<sup>31</sup> Recent regulatory requirements that mandate the central clearing of all standardised derivatives will significantly add to these costs. Many of these costs are often opaque, perhaps to make it easier to pass them on to underlying consumers either directly or indirectly through lower returns.<sup>32</sup>

Transaction costs (excluding taxes) for pension funds and savers are estimated to be approximately 59 basis points (0.59%) of the economic value of the transaction in the equity markets, 46 basis points in the corporate bond markets and 57 basis points in the credit and equity derivative markets, see Table 1 in the Appendix. Total transaction costs are greater than the UK's stamp duty on shares and sometimes more. If the extension of a 0.5 percent turnover tax will cause tumbleweeds to roll across the City of London, then the effect of these existing charges and fees must be even more devastating and demanding of further investigation.

Many of the arguments against FTTs suppose that any tax, no matter how small, would usher in a nuclear winter for financial markets because finance is instantly substitutable. This claim has no grounding in fact. It is also an odd claim for the industry to make. It would suggest that the value-added of our financial centres—their highly paid bankers and centuries of reputation—would be called into question and billions of dollars of business would instantly drain away were we to impose the tiniest of transaction taxes. Is that all the cleverness, expertise, connectivity and

<sup>31</sup> See, "2015 Wholesale and Investment Banking Review", Oliver Wyman and Morgan Stanley, March 19, 2015. [http://www.oliverwyman.com/content/dam/oliver-wyman/global/en/2015/mar/2015\\_Wholesale\\_Investment\\_Banking\\_Outlook.pdf](http://www.oliverwyman.com/content/dam/oliver-wyman/global/en/2015/mar/2015_Wholesale_Investment_Banking_Outlook.pdf)

<sup>32</sup> See, "Asset managers under fire over hidden pension fees", May 20, 2016. *Financial Times*.

history are worth – less than a fraction of a percentage point? If financial services are as internationally substitutable as the decision of whether to pull into this gas station or the one a street away, one wonders why the bankers are not also on the minimum wage. The reality is that, first, transaction costs are much higher than often described. The City of London study on the costs of an Initial Public Offering (IPO) around the world reveals a high and wide range of between 3% and 7%. Second, the bankers and businesses stay in places that have higher costs, such as New York in the IPO example above, because there is value in being where they are, being close to the right expertise, experience, clients, funding and networks and the value, protections, and guarantees that governments, central banks, market infrastructure and legal and fiscal systems provide.

The empirical evidence which we discuss in Appendix 1 is that the elasticity of demand on a rise in costs as a result of business not taking place or moving elsewhere ranges from approximately 0.75 to 1.67 and averages 1.0, which means that a 10% increase in total transaction costs will lead to a reduction in demand of 10%. This is consistent with what happened to turnover following the introduction of a 0.1% per transaction tax in France and Italy. While turnover reductions of this order are significant, it does not indicate that the current tax rate is close to the point of diminishing returns. Higher taxes would raise more. In the next section we address why this reduction in turnover will not adversely impact market liquidity.

### **6.3 The myth that liquidity will suffer if turnover is reduced**

In response to the earlier argument that a Financial Transactions Tax will reduce systemic risks (see Section 3), bankers often produce research that purports to show that high-frequency trading increases turnover and therefore must improve liquidity and reduce volatility. By killing high-frequency trading they

go on to argue, FTTs would lead to instability. Let us forget for the moment the long period of history before high frequency trading was dominant, when markets were not in the dark ages but were in fact liquid and more stable than today. The industry argument confuses liquidity with the turnover. While high turnover is a common symptom of liquidity, financial market liquidity is about diversity. A market with only two participants would be highly liquid if whenever one wants to buy, the other wants to sell. A market with a thousand participants who each use the same model to value assets and have the same trading strategies, so that when one wants to buy so do the other 999, would be highly illiquid.

According to the majority of studies during calm, directionless times, high-frequency and algorithmic traders, who use price models to generate short-term buy and sell orders, tend to adopt contrarian strategies. They buy when the market is moving down and sell when the market is moving up. It is hard, during these times, to differentiate the behaviour of high-frequency traders, algorithmic traders and market makers. Data is plentiful at these times, and when econometricians run their tests, high-frequency trading strategies appear to add to liquidity. But they are adding to liquidity when there is already much of it and when volatility is low, turnover is high, and bid-ask spreads (the difference between the buy and sell levels of traders) are depressed. In times of crisis on the other hand or whenever there are sharp market moves, the short-term trading models of high frequency traders and algorithmic traders become momentum driven. These traders try to run ahead of the trend. Selling before other sell orders hit the market drains liquidity and does so when the market needs it most. A graphic illustration of this was the behaviour of high-frequency and algorithmic traders during the equity and bond “Flash Crashes” of 6 May 2010 and 15 October 2014 respectively.

The econometricians cannot run their models over these liquidity events because, by definition, price points are sparse and unreliable. What we know for certain however,

is that the only way high-frequency traders who are thinly capitalised can add to liquidity is if they act as contrarians, but if they act as contrarians in environments of sharp price moves, they would quickly go bust. We also have a significant amount of cross-sectional evidence of high-frequency traders and their program and algorithmic cousins trying to run ahead of sell orders that points squarely to the phenomenon that high-frequency trading adds to liquidity when it is already plentiful and takes it away when it is most needed.<sup>33</sup> These studies also suggest the “spoofing” of the market with multiple orders can generally be a trigger for these “liquidity events”, though this is not obviously so on 6 May 2010. It is worth pointing out that in stressed environments, high frequency, and algorithmic traders behave very differently than market makers who tend to widen their bid-ask spreads to turn away customers except those prepared to pay extra for scarce liquidity. Over different market environments it is possible to differentiate market makers from high-frequency traders.

Analysis of the turnover and liquidity of the new French FTT bears out these cross-sectional studies and not those of the industry cassandras. Turnover did fall when the FTT was first introduced, in line with modest estimates of elasticities. However, liquidity as measured by the price impact of trading and price volatility did not even during this relatively quiet time in financial markets.<sup>34</sup>

#### **6.4 The myth that employment and GDP will decline if stock market turnover falls**

A number of estimates of the job and GDP impact of FTTs are thrown around and so it is

important to understand the background to these. First, in these estimates, it is generally assumed in this analysis that transaction fees that go to a private company add to GDP whereas transaction taxes that go to Government are placed in a hole in the ground and are lost to the economy. On this, somewhat restrictive basis, the European Commission estimates that their proposed 0.1 percent Financial Transactions Tax will lower GDP by a modest 0.2 percent. This should not be a surprise, except for how small it is, because all taxes lower GDP if you do not consider either the reduction of negative social externalities or whether the cash is used to boost investment, to lower corporation taxes, lessen labour taxes, and reduce debt or any other activity that may boost GDP. On the same basis of these estimates, removing all taxes would boost GDP considerably, but we know that this represents just half of the equation.

Moreover, the Commission’s assessment of a modest GDP cost is likely to be an overestimate because the economic model used by the Commission assumes that the tax increases the cost of capital by the same amount for everyone in the economy. It does not take into account that only 15% of investment is financed by the issuance of equity and debt securities that may incur the tax. Most investment is financed through retained earnings and loans. It also does not take into account differences in the incidence of the tax caused by different holding periods. A tax based on transactions will raise the cost of capital for short-term traders with many transactions by a multiple of the amount it may raise for long-term equity and debt investors.

Furthermore, once we consider the far larger economic costs of a financial crisis,

<sup>33</sup> See, “CFTC-SEC Staff Report, Preliminary Findings Regarding the Market Events of May 6, 2010”, and “CFTC-SEC Staff Report, Findings Regarding the Market Events of May 6, 2010”, and Huang, Jennifer and Jiang Wang, 2010, “Market Liquidity, Asset Prices, and Welfare”, *Journal of Financial Economics*, 95, 107–127.

<sup>34</sup> See, “The Impact of the French Securities Transaction Tax on Market Liquidity and Volatility”, by Gunther Capelle-Blancard and Olena Havrylychuk, in *La Lettre du Cepii*, No. 331, March 2013.

transaction taxes would only have to contribute to a tiny reduction to systemic risks in the multiplicity of ways discussed in Section 3, to have a net positive effect on GDP. Earlier we cited estimates that the full cost of the Global Financial Crisis (GFC) was approximately 166% of GDP. If we compare this actual cost to the estimated 0.2% of GDP cost of the tax, then we can consider the following trade-offs. If a large international financial crisis occurred once every fifteen years as history suggests, an FTT would only have to reduce the likelihood of such a crisis, or reduce its impact, by 1.8%, for it to end up having a net positive impact on GDP. We discuss these comparisons in greater detail in Section 4.

### **6.5 The myth that ordinary savers will uniquely end up paying**

Critics argue that ultimately it is retail customers who will pay the tax. On the same line of thinking retail customers pay all the corporation taxes, employee income taxes and environmental levies of firms who sell the things they buy. However, even if the tax were to be fully passed on to end customers the incidence of the tax would not be equally distributed. This is not a tax on average consumers. According to the bi-partisan Tax Policy Centre in the US, Financial Transactions Taxes are one of the most progressive taxes, more so than income tax, because holdings of financial assets are more unequally distributed than wages. In the United States, for instance, the top 1% of taxpayers by income own 67% of all financial securities. A similar income distribution exists in the UK. According to the analysis by the Tax Policy Centre 75% of the burden of an FTT would fall on the top 20% of households by income in the US and 40% of the burden would fall on the top 1%.

Even amongst those with financial assets, the tax would not fall evenly. It will impact those who churn their portfolios the most. A pension fund that buys a stock and holds it for three years and then sells it will have

an annual average tax rate of 0.17% percent (0.5 for purchase and sale ÷ 3 years). This represents a fraction of annual transactions costs that equity mutual funds report. On the other hand a hedge fund that turns over its entire portfolio once every three months would have an average annual tax rate of 1.5% or 9 times more.

### **6.6 The myth that the failure of the 1984 Swedish FTT demonstrates that Financial Transaction Taxes don't work**

One of the most common arguments raised by those against the FTT is the case of Sweden in the 1980s. The Swedish example is not relevant to the EU's FTT and the UK Stamp Duty on share transactions for two reasons. First, this tax introduced in 1984 was not a stamp duty but a tax paid by Swedish brokers on transactions through them. Secondly, the modern requirement to disclose the beneficial owner of bank and stock accounts was not in place in 1984 when Sweden initiated a 0.5 percent FTT and raised it to 1.0 percent in 1986 (and 2.0% on derivatives).

The Swedish tax was levied entirely on the location of the trading venue. Swedes who wanted to get around it could easily establish accounts in London and trade in Swedish stocks using London brokers with no questions asked. Anti-money laundering rules and even bank supervisors first international accord (Basel 1) did not exist. By 1990, 50% of turnover in Swedish stocks took place outside of Sweden and tax revenues were lower than hoped for as a result. The Swedish authorities phased out the tax shortly afterwards. Had the brokerage tax been a stamp tax, as in the UK and other jurisdictions, the result would have been different. It would have ensured that all purchasers of Swedish shares, from any location, would have needed to pay the tax to have legal title to the shares.

It is worth noting for now and returning to this point later that during this period the elasticity of demand for turnover in Swedish stocks with respect to transaction costs proved to be approximately 1.0 – so a 50% increase in the cost of transactions led to a 50% drop in turnover. Arguably this is a significant overestimate of elasticities of demand for turnover more generally because in this case a large proportion of the drop in turnover was a result of diversion elsewhere not because higher costs reduced demand for transactions. Yet this degree of elasticity of demand with respect to a rise in transaction taxes is still much lower than is often claimed by the financial industry. It is often claimed that infinitesimal increases in taxes lead to enormous reductions in turnover, implying elasticities many multiples higher than 1.

The Swedish brokerage tax was not only ill-designed, it suffered from being introduced in an age when residents could avoid taxes by going offshore and establishing foreign entities with the active encouragement of their brokers, bankers, and foreign jurisdictions. London's current position as one of the world's largest offshore financial centres started with turning

a blind eye to the tax status of its international clients with the creation of the offshore “Eurobond” market. It has continued with favourable tax treatment of income and capital gains for those in the off-shore hedge fund and private-equity sectors. Even this poorly designed tax could not be so easily evaded today. Swedes are no longer able to open a bank account in London without declaring their beneficial ownership. Once the broker records the beneficial owner and opens an account, there is an agreement between the relevant authorities, including tax authorities, to share tax information and there are severe penalties for inadequate reporting.

These agreements are not just about, or perhaps not even mainly about tax. Non-compliance with the beneficial ownership information required to satisfy Anti-Money Laundering rules would leave the directors of the corporate service companies, banks, or brokers who open these accounts liable for up to five years incarceration, fines in excess of \$500,000, or both. We discuss the wider effects of these rules on the proposed EU and existing UK taxes below.

## 7. NEW TRANSPARENCY INITIATIVES AND IMPLICATIONS FOR EXTENDING THE UK FINANCIAL TRANSACTIONS TAX TO EQUITY AND CREDIT DERIVATIVES

Stamp duty on transactions in shares issued in a stamp duty jurisdiction is virtually impossible to avoid or evade. This is why overseas residents pay it. This is because of the strong legal and accounting connection between where a company is deemed headquartered, legal title on shares in its ownership and the share registry. Transactions are taxed by virtue of where the shares are issued, not where they were traded or who trades them. The issuance principle of taxation is both necessary and sufficient for the tax to work for transactions in shares. However this is not the case where there is not a direct ownership of shares, for

instance, in the case of derivative or certain debt instruments. A derivative on the value of UK shares can be issued anywhere. To tax these instruments, the tax authorities have to rely on the residency principle. This principle is currently used for taxation and UK holders of foreign shares already have to report their income and capital gains from these shares irrespective of where they were traded or issued by virtue of their residency in the UK.

The opportunities for avoiding or evading transaction taxes based on the residency principle used to be significant before the

advent of enhanced banking regulation and efforts to counter the money laundering and the financing of terrorism. It is one of the reasons why FTTs were generally not extended beyond shares where the issuance principle is so effective. However, over the past ten years, several developments have occurred, which when put together, mean that in the future we can rely far more on the residency principle for the taxation of financial activity in general, and derivative instruments specifically. These developments first occurred following the 9/11 tragedy. Tax authorities can build on the rules and powers of these initiatives to increase the effectiveness of financial taxes.

The principal tool of the money launderer is a corporate entity where the ultimate or beneficial owner is secret. Rules requiring beneficial ownership information, such as Legal Entity Identifiers, that can be made available to international law enforcement agencies and other official agencies are now effectively enforced in some countries. Two comprehensive field studies by Michael Findley, Daniel Nielson, and Jason Sharman, into the practical ease with which shell companies can be set up across the world found that it is not possible to do so in the Bahamas, Barbados, Bermuda, Cayman Islands, Isle of Man, Jersey or Luxembourg and very time consuming to try and do so in many other countries. In these countries, the use of bearer bonds is also illegal.

The 2008 Global Financial Crisis led to new regulatory measures that also imposed a higher degree of reporting and transparency over financial transactions and ownership. These measures include the Financial Stability Board's guideline and the European Parliament and Council's Regulation on OTC Derivatives, Central Counterparties, and Trade Repositories (EMIR), which requires amongst other things that all standardised derivative instruments that are traded outside the limelight of exchanges are now to be centrally cleared by a registered clearer. It is estimated that in 2016 the notional value of over-the-counter

(OTC) derivatives that are centrally cleared was in excess of \$470 trillion compared to less than \$70 trillion a few years previously. Noncomplying institutions will suffer severe penalties and will be eliminated from crucial access to funding, payment systems, and licensed activities that would amount to a financial death penalty.

Alongside these developments with their regulatory motives was the 2010 OECD Convention on Multilateral Assistance in Tax Matters. This has been subsequently amended to provide for all possible forms of administrative cooperation between states in the assessment and collection of taxes, including automatic exchanges of information and the recovery of foreign tax claims. To date, 80 countries have signed the convention, including all major financial centres.

Earlier we commented on FATCA. In 2010 the US Congress passed the Foreign Account Tax Compliance Act (FATCA), which requires US citizens, including those living outside the United States, to report their financial accounts held outside US jurisdiction. FATCA also requires foreign financial institutions, under threat of severe sanctions for noncompliance, to report to the IRS. Thirty countries, including all European and G-7 countries, have already established local rules mandating their local institutions to comply with FATCA. (There doesn't seem to be an American translation for "extraterritorial.") However, based on the United States establishing this principle and model, and getting it expensively complied with abroad, the UK and the EU have openly discussed replicating it and making use of the growing network of compliance agreements. A European FATCA is likely to be on its way. A critical complement to these initiatives is a relatively new aggression on the part of regulatory authorities in fining institutions and taking action against those they believe to be guilty of criminal actions.

This new regime of increased reporting and closer supervision has bit hard and several institutions have vacated whole sectors where they are unsure of compliance. Credit Suisse

has been caught in this net and in 2014 agreed to pay a \$2.6 billion fine and plead guilty to helping US citizens evade taxes that were due based on the residency principle. That guilty plea could elevate the total cost to Credit Suisse even more. Some of its counterparties are forbidden by their internal rules to work with those with a conviction. The United States also fined BNP Paribas more than \$10 billion and barred it from dollar-clearing facilities for a period to settle allegations that it violated trade sanctions by using their international network of subsidiaries to disguise transactions with Iran, Sudan, and Cuba. On the announcement of the fine, a further \$10 billion was wiped off the value of BNP shares through fear of the impact of the temporary removal of dollar clearing on its business. HSBC was earlier fined \$1.9 billion for routinely handling money transfers from countries under sanctions and for Mexican drug traffickers. It is not possible to underestimate the repercussions of FATCA and some of the European initiatives. If they were in place in 1963, the London Eurobond market would not have developed.

There are concerns that these enforcement measures are being used politically and thus unevenly and unpredictably. Large countries make the rules, which they do not apply to themselves but are not shy in applying them to those who cannot meaningfully retaliate.

One of the striking results of the Findley et al. studies is that it is now easier to establish companies without revealing beneficial ownership in Australia, Canada, the United Kingdom and the United States than in many international financial centres in small states. The uneven pressure placed on small international financial centres versus large international centres has given birth to an “on-shoring” of insufficiently disclosed assets to US States such as Delaware, Wyoming, and Nevada as well as to London where Findley et al. show beneficial ownership rules are ineffectively enforced. The essential point, however, is that the compliance we have seen in many jurisdictions and non compliance in others, is not a result of an inherent inability to act but a political unwillingness to do so.

Finance used to be presented as something ethereal—materialising momentarily before disappearing again and impossible to pin down, report, and tax. Whether that was ever true, recent events have changed that perception. The 9/11 tragedy, the Global Financial Crisis and the subsequent sovereign fiscal crisis has meant that finance is no longer anonymous. Without this cloak of anonymity, the residency principle can be used to extend the UK’s financial transaction tax to equity and credit derivatives, without fear of relocation.

## 8. RECENT INTERNATIONAL DEVELOPMENTS

### 8.1 Europe

Under the enhanced co-operation procedure, 10 countries in the EU representing over 80% of Eurozone GDP, including Germany, France, Italy and Spain have agreed to the core elements of an FTT proposal developed by the

EU Commission’s Tax Directorate to raise a tax of 0.1% of the value on both the purchase and sale of securities such as shares and corporate bonds and a 0.01% tax on the face value of their derivatives.<sup>35</sup> The European FTT will apply to transactions carried out anywhere by their residents but also by non-residents

<sup>35</sup> Enhanced cooperation in the area of Financial Transaction Tax - State of Play, 28 October 2016: <http://data.consilium.europa.eu/doc/document/ST-13608-2016-INIT/en/pdf>

when they transact in securities that have been issued within one of these 10 tax jurisdictions. Today there is agreement that equity-linked derivatives should be included but not Government bonds. There is no intermediary exemption, though there is a 20% discount on the tax granted to market makers. In general, the European FTT is set at a lower rate than in the UK but is wider in scope.

In anticipation of a future European FTT, France and Italy established new transaction taxes in 2012 and 2013 at rates of 0.1% for shares, 0.01% on equity derivatives and a 0.01% tax on cancelled trades to try to capture HFT. In line with the discussion in this report and contrary to the arguments of the industry, total transaction costs increased by around 15%–20% and turnover fell by around 20% in France and less in Italy and liquidity and cost of capital is unchanged. Additional tax revenues are €740m per year in France and €1bn per year in Italy.<sup>36</sup>

## 9. RECOMMENDATIONS

A more comprehensive Financial Transactions Tax in the UK will support transparency and market integrity; will reduce the churning of investment portfolios; will increase the systemic resilience of the post-Brexit UK economy and will boost systemic liquidity. In achieving these ends, it will likely add to GDP in the long-run. In the short-run, estimates of costs that do not include how tax revenues are to be spent, are suspect but are negligible anyway.

A tax based on both the issuance and residency principles will not lead to any relocation of trades. A US investor would pay the tax on UK issued shares and not on securities traded in the UK but not issued

## 8.2 United States

In Section 2 above we pointed out the US has a small transaction tax (Section 31 fees) and in Section 6 we explain how a unilateral FTT in post-Brexit UK or elsewhere is viable and does not suffer or benefit from US participation or non-participation. US investors in UK shares currently pay the UK's stamp duty. An increase in the rate of the SEC's Section 31 fees to raise more revenues than required to fund financial regulation in the US does not look likely in the immediate future. However, there is a mounting concern there that high-frequency trading is undermining market integrity and liquidity for ordinary investors. The issue played a prominent role in the 2016 Presidential Election. It led to language being adopted at the Democratic Convention citing the FTT as part of the Democratic Party's platform for the first time.<sup>37</sup>

there. A UK investor would pay the tax on instruments wherever they are issued and traded by virtue of their beneficial ownership of taxed instruments. Neither investor would gain from relocation of trades. The tax would improve transparency over the ownership of assets. It would be a highly progressive tax and it will encourage a different banking model, one where there was more lending to businesses, lower costs of financial intermediation and which was less of a source of extreme inequality.

A more comprehensive application of the FTT would not only add to revenues it would also reverse any unintended preference the existing

<sup>36</sup> See, "Taxation Papers, Working Paper No. 62", European Commission, 2015.

<sup>37</sup> "We support a financial transactions tax on Wall Street to curb excessive speculation and high-frequency trading, which has threatened financial markets. We acknowledge that there is room within our party for a diversity of views on a broader financial transactions tax."



stamp duty gives to transactions in non-taxed instruments, such as debt and derivatives, over equity transactions.

The first step in extending the UK's Financial Transactions Tax would be to eliminate the market maker exemption in line with the proposed European FTT.

Market making is an important activity that should be incentivised and facilitated, but an auctioneer does not need to be the beneficial owner of what they are helping to sell unless it is an illiquid stock. To get this balance right and bearing in mind our earlier discussion of the lower costs and higher elasticities of intra-financial business, I recommend that there is a discounted market maker tax rate of 0.2% of purchases and market makers could be given the ability to claim back the tax on days where and when turnover is lower than a threshold amount, reflecting an illiquid environment. This would serve the added purpose of automatically cooling overheated markets as market makers would pay a higher tax rate when there is heavy turnover and a lower rate when turnover is slight.

The market-maker rate we recommend is 40% of the rate for non-market makers – creating an incentive for market making – and is based on an analysis of the empirical data on the elasticity of demand for trading by financial intermediaries detailed in Appendix 1. In the Appendix we set out the calculations that lead us to the headline number that the replacement of the market maker exemption with a market maker discounted tax rate would raise approximately £968m per year. Turnover will fall but the bulk of this would be made up of the turnover of high-frequency traders that do not provide systemic liquidity when it is needed. Removing the intermediary loophole from the existing stamp duty would push the total tax take from shares alone up to approaching £4.3bn per year.

The second step would be to extend the tax to equity and credit derivative instruments using the residency principle. It is an established principle of taxation that close substitutes to

the taxed activity should also be taxed, but this is only now possible given the shift in the international rules on financial reporting and tax transparency. Many credit derivatives, which are priced off the shifting expectations of default are therefore also partial substitutes. The role played by credit derivative instruments in the Global Financial Crisis, strongly suggests this is the market that would profit from the systemic benefits and transparency of small transaction taxes outlined in Section 3.

The derivative markets have some important differences from the cash markets and to make economic sense the tax should be levied on the value of the cash flows between holders of derivative instruments and not the market or face value of the derivative. This extension is likely to raise a further £2,468m per year, see Table 3 in Appendix 1. The transaction costs and elasticities behind these estimates are detailed in Appendix 1. The relatively small amount given the size of the London derivative markets relates to the fact that only UK residents and UK resident institutions will be taxed. Foreigners trading in London's large derivative markets in instruments issued internationally will not be taxed and as a consequence will not relocate.

The third step would be to extend the tax to include debt instruments using the residency principle. In Appendix 1 we show that doing so would likely raise £1,246m.

In addition to the systemic, transparency and integrity benefits cited earlier, a more comprehensive Financial Transactions Tax in post-Brexit UK would bring in a further £4.682bn of revenues, raising the stamp duty on financial transactions to close to £8bn. Although this is a significant sum, it would still equate to just 1.0% of all taxation, only 5% of the Gross Value Added of the financial sector, and 15% of all corporation taxes. It represents a modest insurance premium or sharing of the costs of implicit State guarantees to the banking sector in case of another financial crisis that has the potential to destabilise the entire economy.

## APPENDIX 1: ESTIMATING REVENUES FROM EXTENDING THE EXISTING STAMP DUTY

Amending the intermediary exemption from stamp duty on share transactions would, conservatively, raise approximately £0.97bn per year. Expanding the tax to equity and credit derivatives would raise a further £2.47bn and to non-government bonds, an extra £1.25bn per year. In aggregate, these extensions would raise an additional £4.7bn per year or £23.5bn over the course of a five year parliament on top of the existing tax take of £3.3bn per year, a 140% increase.

To estimate revenues we need to know three things, existing turnover, existing transaction costs and the sensitivity of turnover to a rise in transaction costs. Many analysts treat turnover as a “good” in itself and refer to the latter as the elasticity of demand for turnover, on costs of turnover. I am not sure turnover is a “good” and if it is whether it has well-understood characteristics where more of it improves utility, even if diminishingly so. However, we shall be conservative and apply the framework used by most where they estimate tax revenues by multiplying the tax rate by the turnover that would occur after the authorities have levied the tax. In this approach, the post-tax turnover is the pre-tax turnover, less a percentage that is the percentage increase in transaction costs, multiplied by the elasticity of demand for turnover with respect to costs. The arithmetic is simpler than the English: if a tax raised transaction costs by 10% and the elasticity of demand were 1, turnover would fall by 10%. If the elasticity were 2, turnover would drop by 20%.

In estimating the impact of transaction taxes, industry lobbyists like to compare them with the small difference between a traders bid and offer prices. In this way the tax seems large. They conveniently ignore other transaction costs such as exchange,

clearing and settlement costs. Clearing is the matching of buyers and sellers across multiple related trades and traders at the end of the trading day. Oliver Wyman, the management consultancy, estimates that worldwide market infrastructure costs such as clearing, settlement and exchange are currently \$95bn (£65bn),<sup>38</sup> far higher than the amount raised by stamp duties. Given the new regulatory mandates and incentives for the industry to clear all vanilla derivatives and trade more instruments on exchanges, these market infrastructure costs are likely to rise steeply in coming years.

Having identified only the smallest transaction costs, the industry lobbyists then use unrealistically high estimates of the elasticity of demand for the turnover. In this way, they inevitably reach the opinion, that everywhere and at all times, small increases in costs lead to a complete collapse of turnover. This flies in the face of the \$30bn currently raised worldwide from transaction taxes every year, the \$95bn of fees for the use of clearing and settlement houses, the \$750bn of revenues the entire financial industry earns from securities trading by charging non financial clients fees and commissions and the modest declines in turnover seen after the imposition of a 0.1% FTT in France and Italy.

To establish more realistic ranges of likely revenues we first examine empirical studies on the elasticity of demand to changes in transaction costs. Next, we look at studies on total transaction costs. We then make some amendments that reduce our revenue estimates. Finally, we pull these items together to compute likely ranges of additional revenues from the three extensions to the stamp duty we have discussed above.

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38 Wyman and Stanley (2015).

## Elasticity of turnover to changes in transaction costs

One of the best places to start in estimating the elasticity of demand for a turnover on costs are studies that measured the elasticity during the imposition and removal of the Swedish brokerage tax in the late 1980s. These measurements should represent a ceiling for elasticity because the brokerage tax was not a stamp duty based on issuance and the Swedish government introduced a tax based on residency at a time where there were no requirements for beneficial ownership information in international financial centres. It was therefore far easier to avoid this tax than a stamp duty based on where the shares are issued or even a tax today based on the residence of the beneficial owner. The rise and fall in turnover reflected the ease with which trades could be re-routed rather than a genuine decline in the demand for turnover per se. The definitive study by Joakim Westerholm of the Swedish stock markets during this time found an elasticity of -0.9 to -1.0: so a 10% rise in transaction costs reduced turnover by approximately 10%.<sup>39</sup> His results are consistent with those of McCulloch and Pacillo carried out more recently in 2011 across a wider range of markets and instruments.<sup>40</sup>

If we assumed an elasticity of 1.0 across all extensions of the tax, the UK government would raise £500m more than we have estimated. The work by Thomas Phillipon we have cited earlier and other analysis of the microstructure of the financial industry, suggests that 1.0 represents the average elasticity across two different types of business. The first could be called “ultimate

customer” business and the second intra-financial business. Ultimate customer business is where there is an underlying economic requirement for the trade; the transaction costs clients face are greater than average and the elasticity of demand is lower. Intra-financial business is more marginal than ultimate customer business, transaction costs are lower, and the elasticity of demand is higher.

Using the BIS and Bank of England derivative surveys, it would appear that as much as a third of turnover across different derivative asset classes relates to the real hedging of an economic activity and therefore the elasticity of this business is at the lower bound of estimates of elasticity. The low end of the range of elasticity estimates is 0.75. In other words a 30% rise in transaction costs of the low elasticity activities, say, would only reduce its turnover by 22.5% because much of this turnover is of activity that has to be done and the economic risks of not doing it may far exceed the marginal increase in transaction costs. The remaining intra-financial business would have a higher than average elasticity – it is more marginal and more sensitive to higher costs. Given the average elasticity estimates from surveys, if one third of activity in fact has an elasticity of 0.75, the remaining two thirds would have an elasticity of approximately 1.67 for equity derivatives, 1.58 for equity and credit derivatives and 1.17 for corporate bonds. We think this is a reasonable approximation of the varied and variable landscape of derivative transactions. However, in deriving our estimates of revenues we chose to go to a high level of conservatism to reflect the challenges of estimating turnover,

<sup>39</sup> See, “The Impact of Transaction Costs on Turnover, Asset Prices and Volatility: The Cases of Sweden’s and Finland’s Security Transaction Tax Reductions”, Joakim Westerholm, *Finnish Journal of Business Economics*, LTA 2/03, p213–241. See also, Umlauf, S.R., 1993. “Transaction taxes and the behavior of the Swedish stock market”, *Journal of Financial Economics* 33, 227–240.

<sup>40</sup> See, McCulloch, Neil and Grazia Pacillo (2011). “The Tobin Tax: A Review of the Evidence”, Brighton, UK: Institute of Development Studies at the University of Sussex, *IDS Research Report 68*. [www.ids.ac.uk/files/dmfile/WPS162010McCullochPacillo1](http://www.ids.ac.uk/files/dmfile/WPS162010McCullochPacillo1). See also, Hu, S. (1998). “The Effects of the Stock Transaction Tax on the Stock Market—Experience from Asian Markets”, *Pacific Basin Finance Journal* 6, pp347–64.

costs and elasticities. We assume there are in fact only two elasticities – low (0.75) and high (1.67) and assume that only 10% of derivative activity is at the lower end and 90% is at the high end. We do the same for non-sovereign bond activity. This approach would imply a higher average elasticity than the empirical surveys and therefore less post-tax turnover and revenues, but it would give us greater confidence that our revenue measures are robust.

Section 6 explained why reducing some of the intra-financial business turnover through taxes could bring economic benefits and will also bring the added benefit of encouraging a return to a banking model more focused on reducing expenses for the non-financial sector.

## Transaction costs

The lower non-tax transaction costs are, the greater will be the proportional impact on total transaction costs of a 0.5% transaction tax and the more substantial will be the estimated decline in volumes, and the lower will be the tax take. Consequently, representatives of the trading industry like to suggest that transaction costs are simply the spread between the prices dealers quote to buy and sell small lots of securities. They point to estimates of dealer spreads on the most heavily traded stocks, bonds and derivatives of a few basis points (hundredths of a percentage point).

This is disingenuous for a number of reasons. The economic cost of a transaction includes not just the dealer spread, but also marginal operational costs, exchange fees, clearing and settlement costs, custody costs and market impact costs. Market impact is one of the most significant and most invisible of transaction costs. It is the degree to which

the price of a stock rises as you place a bid to buy it, or falls as you offer to sell it. It is a pure measure of liquidity.

Recent scandals surrounding the manipulation of LIBOR and foreign exchange benchmarks have also highlighted other important transaction costs such as execution implementation arrangements. The allegations in the benchmark scandal imply that attempts by customers to reduce one type of transaction charges (the bid-ask spread) increased other, more opaque expenses, like market-impact costs.

For a long time total costs were hidden, allowing the industry to promote the idea that transaction costs were virtually zero and that taxes would therefore crush volumes to zero. The only contrary voice used to be that of public sector or trade union pension funds, who were finding and reporting that their annual dealing costs across all instruments exceeded 1.0% of the value of assets under management, even though their average annual turnover was less than 50% of assets. Today, however, greater light has been shed on total transaction costs by the European Union's, 2004/2005, Markets in Financial Instruments Directive. MiFID, as it is known, has required increased reporting and transparency in pre and post trading costs. The data we examine come from a handful of comprehensive studies on financial transaction costs by experts, and in particular, the 2006 study by Oxera in partnership with the London Stock Exchange and the City of London, and the 2007 study by academics at EDHEC.<sup>41</sup> When citing average costs, these studies correctly weight the data by volume.

There are broadly four types of trading expenses. The first are brokerage costs and are often represented by the spread between bid and offer prices or commissions but

<sup>41</sup> See, D'Hundt, Catherine and Jean Rene Giraud (2008). "Transaction Cost Analysis A-Z: A Step Toward Best Execution in the Post-MiFID Landscape", Nice Cidex, France: EDHEC Risk and Asset Management Research Centre. [://www.edhec-risk.com/best\\_execution/mifid\\_best\\_execution\\_research\\_chair/index\\_html/attachments/Transaction\\_Cost\\_Analysis\\_A-Z](http://www.edhec-risk.com/best_execution/mifid_best_execution_research_chair/index_html/attachments/Transaction_Cost_Analysis_A-Z).

include the transaction costs of the trader on the other side of the trade to the broker. The second are market impact of trading costs. The third represent market infrastructure costs: settlement, clearing and exchange fees. The

fourth represents other transaction costs such as legal, research and information costs.

These costs are broken down in the tables 1 and 2, below.

**Table 1: Costs of Transacting Securities for Non-Intermediaries**

<b>BASIS POINTS OF MARKET VALUE, VOLUME WEIGHTED, ROUND TRIP</b>	<b>EQUITIES</b>	<b>CORP BONDS</b>	<b>DERIVATIVES</b>
Brokerage Costs (including bid-ask spreads)	3–8	15–30	15–20
Market Impact Costs	30–40	15–20	30–40
Infrastructure costs (settlement, clearing, exchange, custodian fee etc)	8	4	2
Other (inc. research, legal)	10	2	2
<b>Total</b>	<b>51–66</b>	<b>36–56</b>	<b>49–64</b>

**Source:** Author's estimates based on surveys, in particular, Novarco (2015), City of London (2014), EU Commission (2011) and D'Hundt, Catherine and Jean Rene Giraud (2008).

**Table 2: Costs of Transacting Securities for Intermediaries**

<b>BASIS POINTS OF MARKET VALUE, VOLUME WEIGHTED, ROUND TRIP</b>	<b>EQUITIES</b>	<b>CORP BONDS</b>	<b>DERIVATIVES</b>
Brokerage Costs (including bid-ask spreads)	1–4	7–10	10–15
Market Impact Costs	15–20	8	6–7
Infrastructure costs (settlement, clearing, exchange, custodian fees etc)	6	4	2
Other (inc. legal, capital)	5	2	1
<b>Total</b>	<b>27–35</b>	<b>21–24</b>	<b>19–25</b>

**Source:** Author's estimates based on surveys, in particular, Novarco (2015), City of London (2014), EU Commission (2011) and D'Hundt, Catherine and Jean Rene Giraud (2008).

## Summary

In table 3 we bring the earlier estimates of elasticities and transaction costs together to estimate potential new tax revenues. Where the estimate of costs is a range we use the more conservative end of the range. Footnote 47 explains the calculation in detail, but essentially we estimate the reduction in post tax turnover by applying the cost

elasticity of turnover to the tax as a proportion of total costs. We estimate revenues by multiplying the tax rate with estimated post-tax turnover. The table shows that amending the intermediary exemption on share transactions would, conservatively, raise £0.97bn per year. Expanding the tax to equity and credit derivatives would raise £2.47bn and to non-government bonds, an extra £1.25bn per year. In aggregate, these extensions would raise an additional £4.7bn per year.

**Table 3: Estimated tax revenues (£m)**

	UNTAXED TURNOVER <i>(annual value)</i>	PROPOSED TAX RATE	TRANSACTION COSTS <sup>42</sup>	ELASTICITY <sup>43</sup>	REVENUES <sup>44</sup>	TAXED TURNOVER <i>(annual value)</i>
UK shares held by UK financial firms	1,280,130 <sup>45</sup>	0.20	0.27	1.67	968	483,923
Economic value of derivatives held by UK non-financial firms	315,453 <sup>46</sup>	0.50	0.49	0.75	940	187,911
Economic value of derivatives held by UK financial firms	2,839,077 <sup>46</sup>	0.20	0.19	1.67	1,528	764,128
Bonds, excluding gilts, held by UK non-financial firms	257,000 <sup>47</sup>	0.50	0.36	0.75	681	136,154
Bonds, excluding gilts, held by UK financial firms	942,899 <sup>47</sup>	0.20	0.21	1.67	565	282,672
<b>Totals</b>	<b>5,634,559</b>				<b>4,682</b>	

Footnotes on page 31

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**42** Costs for intermediaries and non intermediaries are broken down in tables 1 and 2.

**43** We use the range of elasticity estimates from empirical surveys, especially McCulloch and Pacillo (2011), Hu, (1998), Westerholm (1998) and Umlauf (1993). We conservatively assume that the cost elasticities of the demand for transactions from intermediaries is at the top of the range (1.67), the cost elasticities of the demand for transactions from non-financial firms is at the low end of the range (0.75). We also conservatively assume that for derivatives and corporate bonds, that trading between financial firms alone, represents 90% of turnover.

**44** To derive tax revenues using untaxed turnover, percentage increase in transaction costs and our range of elasticity measures (see note 43) we use the mid-point method to estimate percentage changes. For instance, in the case of the trading of UK shares between UK financial firms, the change in costs using the mid-point method (new cost / ((new cost + old costs) / 2) is 27% or (0.47/0.37). Given an elasticity of 1.67 this would translate to a decline in turnover relative to the mid-point of 45.1%. The mid-point turnover is the average of the old and new turnover. In this example it is £882bn or ((£1,280bn + 483.9bn) / 2). Using the mid-point calculation is the standard approach as it provides consistent estimates. It may be considered conservative as it implies greater elasticities than quoted (2.30 versus 1.67) when comparing new taxed turnover with the mid-point percentage change in costs and also with what we have observed when comparing new taxed turnover in France and Italy following the imposition of a 0.1% FTT covering financial and non-financial firms.

**45** Market value of annual turnover of UK shares held by UK financial firms: Annual value of turnover traded less turnover of taxed transactions. Source, LSE, see <http://www.londonstockexchange.com/statistics/historic/main-market/main-market.htm>

**46** Market value of the annual turnover of credit, equity and commodity derivatives by UK bank and non-banks: Annual notional value of these classes of derivatives using BIS data ([http://www.bis.org/statistics/d5\\_1.pdf](http://www.bis.org/statistics/d5_1.pdf)) discounted for market values using a factor of 2.6%, estimated from the average ratio of market value to notional value outstanding (see, <https://www.imf.org/external/pubs/ft/wp/2008/wp08258.pdf>) discounted for trades by UK financial firms using a factor of 16% (derived from BIS data, [http://www.bis.org/statistics/d5\\_1.pdf](http://www.bis.org/statistics/d5_1.pdf)) discounted for trades with financial firms, 90%, or non-financial firms 10% (based on survey data).

**47** Market value of the annual turnover of UK bonds excluding gilts. Taken from monthly turnover values reported in report by FCA, see: <http://citeseerx.ist.psu.edu/viewdoc/download?jsessionid=0D4F7D677119D0D6FCDDF688D1658801?doi=10.1.1.674.6245&rep=rep1&type=pdf>

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