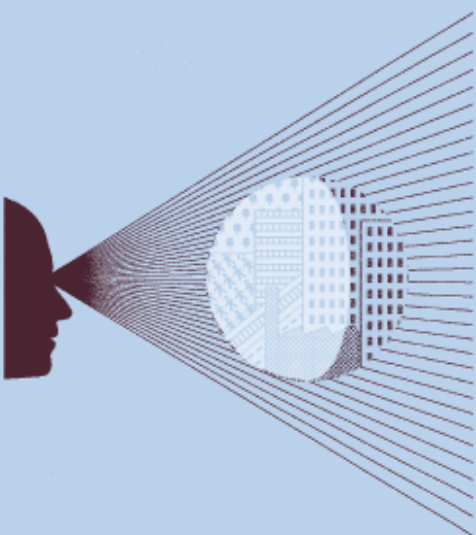


Analysis of European Commission staff working document on the proposed Financial Transaction Tax

**Prepared for the
Association for Financial Markets in Europe**

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Contents

1	Executive Summary	1
2	Introduction	3
3	Review of Commission's arguments	4
3.1	Intermediaries	4
3.2	Secondary trading of government debt	8
3.3	Repurchase agreements	11
3.4	Derivatives	13
3.5	Pension funds	16
A1	Analysis of the Commission's previous impact assessments	18

1 Executive Summary

The European Commission published a staff working document (SWD) on February 14th 2013 on the proposed financial transaction tax (FTT). The SWD is entitled 'Implementing enhanced cooperation in the area of financial transaction tax: Analysis of policy options and impacts'.¹

Since the publication of the SWD, stakeholders have raised questions with the Association for Financial Markets in Europe (AFME) as to the validity of the Commission's arguments. In response, AFME commissioned Oxera to critically review the Commission's assessment of policy options and impacts, and to comment on whether the Commission's proposals are consistent with other regulatory objectives. This Oxera report builds on previous work done by Oxera on the impact of the FTT.

Oxera finds that the FTT will make some transactions uneconomic, including some activities involved in market making, trading of government debt, and repurchase agreements (repos). The Commission assumes that the transactions that are deterred have little or no wider economic value, despite there being evidence that these transactions do have value.

In summary, Oxera finds the following.

- The effect of taxing **intermediate transactions** would be either to multiply the costs to end-users (such as end-investors and companies raising capital) and/or to reduce market making and therefore reduce liquidity—neither of which is in the interests of end-users.
- The extent by which taxing **secondary market transactions in government debt** will increase sovereign borrowing costs and reduce market liquidity could be greater than the Commission assumes—these impacts are not consistent with the objective of reducing the burden of sovereign debt costs.
- The effect of taxing **repos** would be to make many valuable transactions uneconomic, and to introduce inefficiency into the repo market itself, and inefficiencies into those activities that use repos as a mechanism to reduce their costs and/or risks—these costs would ultimately fall on end-users.
- Taxing **derivatives** will hit some hedging activities much harder than others, deterring some forms of prudent risk management—this means that the Commission's assumption that the loss of derivatives trading will have no wider economic impact is less tenable.
- The effect of taxing transactions undertaken by **pension funds**, together with the effect of taxing intermediate transactions, would be to reduce the returns of pension products—this is not in the interests of people saving for their retirement.

The detailed analysis is set out in section 3 of this report.

The European Commission's proposals can be expected to make many current financial transactions uneconomic. Consequently, the Commission may have underestimated the reduction in trading and therefore underestimated the impact on liquidity. Furthermore, the Commission has not taken into account the negative economic impact of deterring financial transactions that bring benefits to the wider economy.

¹ Document 'SWD(2013) 28 final', available at http://ec.europa.eu/taxation_customs/resources/documents/taxation/swd_2013_28_en.pdf

More generally, in the same way as for the Commission's original proposal for a tax at EU level, there would be a **negative impact on economic growth and jobs**. In previous work (see Appendix for details), Oxera found that the proposed tax at EU level is an inefficient way to raise public funds, with a potentially significant adverse effect on the wider economy. The Commission's own analysis suggested that **in order to raise €1 of FTT revenue, the European economy could be expected to sacrifice €2 of economic output (GDP)**. This reduction in the level of economic activity can be expected to reduce government tax revenue from other sources, such as labour and consumption taxes, offsetting revenues collected by the FTT.

Similar conclusions can be expected to apply at the level of the 11 participating Member States. Based on the current total tax revenue burden of around 40% of GDP in the participating Member States, it can be estimated that some **80% of the €35 billion estimated revenue would be lost** owing to the negative impact on other tax sources.² This means that, even based on the Commission's own assumptions, the tax would not appear efficient in collecting revenue.

Adjusting the modelling results to reflect more realistic scenarios, the negative economic impact could be greater and there is a risk that the imposition of the FTT **actually reduces total tax revenues** from the economy. Given this risk, the impact assessment would need to be significantly more thorough and based on more robust evidence before a well-informed decision could be made about the proposed FTT.

² Based on the impact on economic output being twice the size of the tax revenue, and 40% of economic output being taxed, one can estimate that 80% of the FTT revenue will be offset by reductions to other tax revenue.

2 Introduction

The European Commission published a staff working document (SWD) on February 14th 2013 on the proposed financial transaction tax (FTT). Entitled ‘Implementing enhanced cooperation in the area of financial transaction tax: Analysis of policy options and impacts’,³ the SWD is stated to be a response to the request by participating and non-participating Member States for an analysis of the impacts and economic consequences associated with the introduction of an FTT by way of enhanced cooperation.

The SWD notes that, in the Council Working Party, several alternative policy options were raised and discussed—in particular, regarding:

- the taxation of intermediaries;
- the impact on government debt;
- the effect on the repo market;
- the taxation of derivatives;
- the impact on pension funds;

Since the publication of the SWD, stakeholders have raised questions with the Association for Financial Markets in Europe (AFME) as to the validity of the Commission’s arguments. In response, AFME commissioned Oxera to review the Commission’s assessment of policy options and impacts for these important areas, to prepare a critique of the Commission’s arguments, and to comment on whether the Commission’s proposals are consistent with other regulatory objectives.

AFME also asked Oxera to revisit its previous detailed analysis (see the Appendix for a summary of that work) of the Commission’s proposal for a tax at the EU level, and to assess whether its conclusions regarding the negative effect on GDP and jobs remain valid for enhanced cooperation.

This report, which is designed to be read alongside the SWD, presents a summary of the findings of Oxera’s work.

³ Document ‘SWD(2013) 28 final’, available at http://ec.europa.eu/taxation_customs/resources/documents/taxation/swd_2013_28_en.pdf

3 Review of Commission's arguments

The Commission's latest impact assessment included, in section 6, an analysis of the impact of policy options for a common system of FTT under enhanced cooperation. This analysis included considering exempting certain actors (such as market makers) and exempting certain financial instruments (such as government debt, repos and derivatives). Oxera agreed with AFME to focus attention in this review on the following specific elements:

- intermediaries (in particular, the cascade effect);
- the impact on government debt;
- the effect on the repo market;
- the taxation of derivatives;
- the impact on pension funds.

A number of common themes run through these discussions, as the Commission assumes:

- relatively high FTT revenues (reflecting assumptions that the reductions in the volume of trading are relatively small), despite making many current transactions (particularly those of financial intermediaries) likely to be uneconomic;
- that the transactions that are deterred have little or no wider economic value, despite there being evidence that these transactions do have value, which the Commission does not adequately address.

Consequently there is a risk that the Commission has underestimated the economic impact relative to the FTT revenues. With respect to all of the products and actors considered here, it would seem likely that the FTT would deter many financial transactions that have real economic value, resulting in both lower-than-expected FTT revenues and negative economic implications due to the loss of some activity. This outcome has not been properly considered by the Commission.

3.1 Intermediaries

Existing FTT's typically provide exemptions for market makers and other financial intermediaries, to varying degrees, including the new FTTs in France and Italy. Exemptions are provided, as intermediaries are seen to play an important role in assisting the efficient functioning of markets by providing liquidity.

Financial intermediaries that are continually willing to buy or sell securities in a market are known as 'market makers' (typically large banks). They will buy securities from investors and then sell those securities to another investor. The difference between the purchase price and the sale price is known as the bid/ask spread, and this is how the market maker earns a return for providing liquidity to the market. In liquid markets, bid/ask spreads are typically very small, at just a few basis points, but can be significantly larger than this in less liquid markets.

Market makers improve the functioning of financial markets (as shown by academic evidence described below) by continually offering prices to buy and sell securities, so that end-users can buy and sell whenever they wish (albeit at a cost determined by the bid/ask spread). These intermediaries provide economic value to end-users through this 'immediacy' (being

able to trade whenever they wish) and by helping to improve price information (as they are always offering prices to buy and sell).

The Commission's proposals do not, however, include an exemption for market makers. The Commission suggests that there has been a paradigm shift in regulation; it is no longer the case that 'more is better' in terms of liquidity, and so taxing market makers would support financial market regulation.⁴ The Commission does not, however, provide the evidence to support its claim and, as described below, academic evidence continues to support the role of market-making activities, especially where liquidity is poor.

Section 6.3.3 of the Commission's latest impact assessment considers the impact of the tax being applied to market makers.

Having reviewed the Commission's latest assessment of the taxing of market makers, Oxera summarises its findings as follows:

- the Commission's position on market-makers contrasts with that of the new national FTTs and the Commission's own exemptions for market-makers in other financial regulation;
- academic evidence exists for the role of market-makers in maintaining liquidity, but this is not assessed by the Commission;
- there should be empirical evidence, not just qualitative argumentation, to support such a radical departure from the standard practice of exempting market makers.

3.1.1 The Commission's assessment

The Commission acknowledges that taxing professional dealers may harm the functioning of financial markets, but states that taxing these dealers may disincentivise business models that rely on 'internalising' spreads within the financial sector (a redistribution rather than valuable activity) and that excluding dealers would have 'significant negative impacts on the tax yield'.⁵

3.1.2 Academic evidence on role of market makers in providing liquidity

There have been a number of empirical studies which aim to estimate what value market makers provide. A selection of these studies are summarised below.

This academic literature is consistent in the finding that market makers tend to increase liquidity, through the lowering of spreads and rise in volumes.

Stock market

In Nimalendran and Petrella,⁶ the Italian stock exchange aimed to improve the market for low-liquidity stocks by implementing a market-making programme whereby stocks with low trading levels could be listed on a 'hybrid' system with both specialist order books (ie, market makers) and a standard order book, as opposed to the previous regime with only a pure standard order book. The study found that 'thinly traded' stocks benefited from the programme with spreads reducing, and increases in liquidity and depth measures. The more illiquid the stock, the greater was the benefit from the change. The change in regime for only some stocks enabled the authors to attempt to control for both company-specific and market-wide factors.

⁴ See p. 35 of the Commission's latest impact assessment.

⁵ Ibid, p. 34

⁶ Nimalendran, M. and Petrella, G. (2003), 'Do thinly traded stocks benefit from specialist interventions?', *Journal of Banking and Finance*, 27, pp. 1823–54.

Market makers versus open outcry in options

Mayhew⁷ studied cross-listed equities and options and, comparing between markets with and without market makers, found that options traded under market makers have smaller bid/ask spreads than an open outcry environment. While this is not fully representative since it can include only those options listed on multiple platforms, these options are likely to be highly liquid compared with other single-listed options, and therefore addresses an area not dealt with closely in the studies above—namely, that markets which are not excessively illiquid still benefit from market makers.

Introduction of option market makers

Eldor et al.⁸ study the value and impact of market makers using an Israeli case study where the market operator sponsored market makers to enter the electronic euro-shekel options market. This market saw an increase in liquidity of 60% and a bid/ask spread reduction of 35%. The authors found that each \$1 spent on sponsoring market makers by the operator resulted in \$67 of public benefit to the participants in the market, which would suggest that the subsidy to market makers was highly beneficial.

In addition to these results, the study found that the efficiency of the market improved (with both skewness and non-parity between calls and puts falling) and the market makers increased the 'depth' of the market (as measured by ratio of % change in option prices per number of contracts per transaction). Furthermore, even excluding trades involving market makers, liquidity improved among other participants after the introduction and controlling for other factors, supporting the hypothesis that market makers increase investor participation beyond simply their interactions with market makers.

Interest rate swap futures

Tse and Zobotina⁹ study the interest rate swap futures market and found that the introduction of a designated market maker into CBOT 10-year futures improved liquidity in a variety of ways, including reducing transaction costs and raising volumes, while improving price discovery. Their sample previously included voluntary market makers, indicating that a designated and prominent market-making programme has effects additional to simply permitting market making, and that beneficial effects may be dependent on the success of these specialist liquidity providers.

Impact of changes to market makers

There is also evidence that market makers do provide liquidity and fulfil their stated role, through the analysis of their positions against the market. Studies find that market makers who are less constrained by financing ability are better able to increase liquidity and reduce market transaction costs. Comerton-Forde et al.¹⁰ show this by studying the evolution of liquidity in markets and comparing this to market makers' incomes and balance sheets, finding that effects are consistent with the financing constraints of market makers having an effect on their respective market. They demonstrate that spreads increase when market makers are losing money or highly leveraged in large positions and that mergers of market makers lead to a reduction in these effects, implying that a stronger market maker can better supply liquidity. Lastly, they find that stocks with high volatility are more sensitive to the income and balance sheet of market makers.

⁷ Mayhew, S. (2002), 'Competition, market structure, and bid-ask spreads in stock options markets', *Journal of Finance*, **57**, pp. 931–58.

⁸ Eldor, R., Hauser, S., Pilo, B. and Surki, I. (2005), 'The contribution of market makers to liquidity and efficiency of options trading in electronic markets', *Journal of Banking and Finance*, **30**, pp. 2025–40.

⁹ Tse, T. and Zobotina, T. (2004), 'Do designated market makers improve liquidity in open-outcry futures markets?', *Journal of Futures Markets*, **24**:5, pp. 479–502.

¹⁰ Comerton-Forde, C., Hendershott, T., Jones, C.M., Moulton, P. and Seasholes, M.S. (2010), 'Time Variation in Liquidity: The Role of Market-Maker Inventories and Revenues', *The Journal of Finance*, **LXV**:1, pp. 295–331.

3.1.3 Impact on trading volumes and ‘cascading’ transactions

As discussed in the context of government bond trading in section 3.2 below, taxing market makers (and other financial intermediaries) means that these intermediaries either:

- continue to trade and the cost of the FTT is passed on to end-users (through an increased bid/ask spread, as explained below); therefore the burden of the tax on end-users will be greater than the direct tax rate of 10 basis points on each side of the transaction; or
- cease trading (eg, cease undertaking market-making activities to provide liquidity), which results in a (potentially large) reduction in trading volumes and hence FTT revenues, and also is likely to create economic costs through the loss of liquidity and the need for the adoption of an ‘agency’ model (as explained below).

There are different views on whether the ‘cascading’ transactions of intermediaries will continue or cease with the FTT, depending on the nature of the financial markets. The Commission assumes that many transactions by intermediaries will end, without any negative consequences for the wider economy. Other commentators suggest that there are many cascading transactions that will continue and will multiply the cost of the tax for end-users.¹¹

If market makers continued to provide liquidity with the FTT in place as proposed, they would have to pay 20 basis points for each trade they facilitate (10 basis points each for the buy and sell). They would have to recover this cost through an increased bid/ask spread, or else providing liquidity would become loss-making. With a market maker facilitating a trade between two end-users, the total cost of the FTT on the end-users would therefore need to be 0.4%, rather than the 0.2% with a single transaction.

There can, however, be more than one intermediary involved in a transaction between two end-users, which suggests that the number of incidences of the tax could be even higher. Furthermore, intermediaries themselves typically hedge the risk positions they incur while making markets, with each hedging transaction leading to more instances when the FTT is payable. Some examples of cascading transactions suggest as many as ten incidences of the tax for each end-user transaction.¹²

In more liquid markets, the cost of the FTT is much greater than current bid/ask spreads, and therefore market makers would have to offer significantly less favourable prices to end-users in order to cover the cost of the tax. It may be that end-users would be unwilling to accept such relatively large increases in transaction costs, as there are likely to be alternative options available to them. Trading behaviour could therefore change. For example, they could:

- employ intermediaries to act as agents on their behalf (avoiding duplication of the tax); or
- seek to trade directly with other end-users or at least a reduced number of intermediaries (in the case of cascading transactions), by accepting a loss of immediacy (needing to wait longer to trade).

The proposed FTT allows for brokers to act as agents facilitating trades between end-users without incurring the tax. However, the use of agents creates economic costs for end-users, notably as it creates counterparty risk—eg, the agent could default mid-transaction. For reasons similar to why the repo market is important (see section 3.4 below), the efficient,

¹¹ For example, see Clifford Chance (2011), ‘Financial Transaction Tax: Update’, October, available at: http://www.cliffordchance.com/publicationviews/publications/2011/10/financial_transactiontaxupdate.html

¹² As shown in the example in Clifford Chance (2011).

transparent and secure transfer of securities between parties, without the added complication of agents, is an important function of markets.

The Commission does not consider the costs of using agents rather than cascading transactions; it assumes that such transactions are of no economic value. However, the activities of market makers have been shown to provide economic benefits (as demonstrated in the academic studies described above), and therefore there would be negative economic consequences if the FTT discourages market-making activities.

3.1.4 Impact on FTT revenues

Importantly, there are no revenue benefits from forcing financial intermediaries into acting as agents rather than conducting cascading transactions, as no tax is paid if they act as agents. It should be emphasised that, in this case, little additional FTT revenue would be collected, compared with the situation where the market-making activity was allowed to continue without the tax being imposed. The negative economic implications of deterring market-making activities could therefore simply be avoided by providing market-making exemptions.

3.1.5 Summary

The academic evidence is consistent in finding that market making tends to increase liquidity, through the lowering of spreads and rise in volumes. The Commission should gather empirical evidence, not just qualitative argumentation, to test its assumption that taxing market makers will not result in significant loss of liquidity or other detriments (and hence costs to end-users) for financial markets.

3.2 Secondary trading of government debt

As noted in Oxera (2011),¹³ there is concern about the impact that the FTT could have on the cost of funding of government debt, as the proposal is for the tax to be applied to the secondary trading of government bonds (as well as corporate bonds). For this reason, section 6.2.2 of the Commission's latest impact assessment considers the impact of the tax on bond yields and 'mitigating effects'.

Having reviewed the Commission's latest assessment of the taxing of government debt trading, Oxera summarises its findings as follows:

- the Commission estimates a relatively large negative impact from taxing government debt, but then halves this estimate based on mitigating factors; the Commission provides little explanation for halving the impact;
- ultimately, one would expect the cost of the FTT either to be borne by investors in government debt accepting lower post-tax returns and/or for the government to pay higher interest rates; the end-users (investors and the government), not traders, will therefore bear the tax;
- the cost of any cascading transactions in between can be expected to fall on end-users, although trading patterns can be expected to change with the imposition of an FTT;
- deterring cascading transactions could create additional economic costs—for instance, if this creates additional counterparty risks for end-users needing to use agents to conduct transactions;
- the extent to which the tax could affect government funding costs depends on the 'marginal' investor since it is this investor who determines the yield that the bond has to offer in order to attract sufficient demand to meet the government's funding needs; for

¹³ Oxera (2011), 'What would be the economic impact of the proposed financial transaction tax on the EU?', prepared for the Association for Financial Markets in Europe, the Italian Association of Financial Intermediaries and the Nordic Securities Association, December.

- example, a government dependent on demand from investors outside the FTT zone might need to compensate those investors for the cost of the tax;
- ultimately, the extent of the impact on funding costs is an empirical question, which could be researched, although the Commission has not done so;
 - further research into the economic impact of taxing secondary trading in government debt would therefore seem highly advisable, given the potential serious negative economic consequences through higher government funding costs and other unintended consequences.

3.2.1 The Commission's assessment

The initial Commission proposal expected that the FTT would raise some €9.5 billion from taxing government bond transactions, which the Commission now estimates to be €6.5 billion for the 11 Member States participating in enhanced cooperation.

To estimate the impact of this tax on the cost of funding government debt (due to increased yields to compensate investors), the Commission takes the impact on the cost of capital for corporates from its previous academic work¹⁴ to estimate the impact of the tax on bond yields. This approach estimates the extent to which investors demand higher returns from corporate investments in order to compensate them for the increased cost of making transactions (due to the tax). Oxera (2011) noted that this approach is 'broadly sensible approach for an initial assessment of the potential economic impact for a closed economy, but it has some important shortcomings'.¹⁵ In this case, one of the more significant shortcomings of the model was that it was designed for corporate finance (meaning equity) rather than government bonds, as the Commission notes.

Using this approach, the Commission estimates that the tax will result in a 0.07% increase in the cost of debt for governments (and hence government bond yields), which would raise debt funding costs by some €4 billion per annum (in total for the 11 participating Member States).¹⁶ This would largely wipe out the expected €6.5 billion in FTT revenue per annum expected from taxing secondary trading of government debt.

The Commission then argues that this estimate should be halved owing to mitigating factors including:

- the tax not applying to primary markets and therefore some investors never need to pay the tax (as they buy at issuance and hold until redemption);
- in the short term, existing government debt funding costs will not be affected (to the extent that debt is held in long-term instruments);
- net revenues will help to reduce government debt, and hence lower interest rates (assuming that the revenue is used to reduce deficits rather than fund long-term investments, to which the Commission has also referred).

No quantitative justification is given for the halving of the impact.

Even with the Commission's halving of the impact, this still leaves a large increase in government debt interest payments, of €2 billion pa. Countries with relatively few resident financial institutions trading government debt (and therefore lower FTT revenues), but a relatively large amount of debt, would be relatively worse affected.

¹⁴ Lendavi, J., Raciborski, R. and Vogel, L. (2012), 'Securities transaction taxes: Macroeconomic implications in a general-equilibrium model', *European Economy, Economic Papers* 450, March.

¹⁵ See Oxera (2011), p. 5.

¹⁶ See second paragraph of p. 27 of the Commission's latest impact assessment, which gives an estimate of €3.85 billion per annum.

3.2.2 Incidence of the FTT

As described in Oxera (2011), the burden of the tax will be shared between end-investors and issuers, with the split dependent on the extent to which end-investors can invest in investments not subject to the tax as a substitute for investing in investments that are subject to it. The Commission itself acknowledges that 'a large part of the burden would fall on direct and indirect owners of traded financial instruments'.¹⁷

An investor buying a bond at issuance will not have to pay the tax initially,¹⁸ but may anticipate paying the tax at some point in the future if there is a chance that they will sell the bond on the secondary market (rather than holding it until redemption, in which case no tax will be paid). If there is a possibility of selling before redemption (which will be the case in many circumstances) then the investor's expected post-tax return will be lower owing to the tax.

Furthermore, the transfer of bonds between two end-investors commonly (at present) involves more than one transaction, as there are intermediaries (including market makers) trading with different parties and providing liquidity, as described in section 3.1.

It should be noted that behavioural change is quite likely in the government bond market, which is dominated by large institutional investors, as the tax would create a large incentive to reduce the number of cascading transactions, despite potential economic costs arising from doing so (as discussed in section 3.1). Such reduction in cascading transactions would imply a large reduction in trading volumes.

The original impact assessment implied a 31% reduction in bond trading due to the tax.¹⁹ There is no clear definition of whether a bond transaction involves end-users or intermediaries, but other commentators suggest that the proportion of intermediary trades is much greater than 31%.²⁰ The Commission may therefore be significantly overestimating the likely revenue from taxing government bond trading.

3.2.3 Estimating the impact on funding costs

The extent to which the government has to offer higher interest rates to compensate investors for this lower expected post-tax return depends on the sensitivity of demand from 'marginal investors' to post-tax returns. The marginal investor determines the yield that the bond has to offer in order to attract sufficient demand to meet the government's funding needs. This is likely to be higher if many of the investors in the government bonds are foreign (outside the FTT zone) and therefore less willing to accept lower post-tax returns (as they have other options). Many domestic investors may be tied in some way (eg, regulation) to local government bonds, but, if the government relies on selling bonds to foreigners using secondary markets (or intermediaries) that are subject to the FTT, it may have to offer higher interest rates in order to continue to sell the same amount of bonds.

Ultimately, the extent to which the tax would affect government funding costs is an empirical question. The Commission has not conducted research into this, but such research is advisable and should be possible.

¹⁷ See the impact assessment, volume 1, p. 53.

¹⁸ This assumption is based on the Commission's statements that primary markets are exempt, although it should be noted that bonds may initially be purchased at auction by primary dealers who sell them on in the secondary market, which presumably would incur the tax. With the FTT, however, the role of primary dealers in auctions would be limited unless they were compensated by the government for the cost of the FTT.

¹⁹ See p. 18 of volume 12 of the original impact assessment, which combines a 10% fall in volumes due to 'relocation and evasion' with a 21% decline in volumes due to the increase in transaction costs deterring trading.

²⁰ For example, a recent report published by the International Regulatory Strategy Group (IRSG) assumes that 80% of trades are between financial intermediaries, based on the guidance of a market participant. See IRSG (2013), 'The Impact of a Financial Transaction Tax on Corporate and Sovereign Debt', April, footnote 1.

The FTT would increase transaction costs by at least two instances of the tax (0.2%), even without factoring in the cost of any cascading transactions that occur with the tax in place.²¹ For liquid EU sovereign debt markets, this would be likely to represent a very significant increase in transaction costs, as Oxera understands that bid/ask spreads are typically less than 20 basis points.

The next step would be to estimate how a (large) increase in transaction costs affects government funding costs in practice.

Academic literature looking at how small changes in bid/ask spreads affect (highly liquid) government bond yields have tended to produce inconclusive evidence, but in this case evidence on corporate bond yields may be more relevant (as they have larger variations in transaction costs). Here, empirical evidence finds a clear link between corporate bond yields and the bid/ask spread.²²

Data on bid/ask spreads, bond yield spreads and funding costs is also available, and primary analysis of this important issue should be feasible, particularly given the extensive academic literature that exists looking at related issues.

3.2.4 Summary

This review suggests that further research into the economic impact of taxing secondary trading in government debt would be highly advisable, given the potential serious negative economic consequences through higher government funding costs and other unintended consequences—in particular, research into:

- the economic costs of reducing the activities of market makers and other financial intermediaries (the cascading transactions);
- the likely impact of an increase in transaction costs on government funding costs, drawing on existing academic literature and data on bid/ask spreads and yields;
- potential knock-on consequences for the wider economy of higher government cost of debt (and hence the risk-free rate).

3.3 Repurchase agreements

The Commission's proposals for the FTT include taxation of sale and repurchase agreements (repos), even though other forms of secured (and unsecured) lending are not taxed. While a repo is economically similar to a secured loan, with a repo the legal ownership of the asset does pass from the seller to the buyer. Repos therefore involve a transaction (and they are therefore taxed, unlike secured lending), but the borrower retains all of the market risk (unless they default), like secured lending. Section 6.2.3 of the Commission's latest impact assessment considers the impact of the tax on repos.

Having reviewed the Commission's latest assessment of the taxing of repos, Oxera summarises its findings as follows:

- the Commission accepts that taxing short-term repos will make its business model unattractive and such repos would be replaced by secured lending or operations with the central bank;
- the Commission does not assess the cost of bringing the (large) market for such repos effectively to an end, however;

²¹ As noted above, cascading transactions that incurred the FTT would be likely to result in a wider bid/ask spread, in addition to direct cost of the tax.

²² See, for instance, Chen, L., Lesmond, D. and Wei, J. (2007), 'Corporate yield spreads and bond liquidity', *Journal of Finance*, LXII:1, February.

- repos provide liquidity and incentives for financial institutions to hold long-term assets such as government bonds (rather than cash); losing this liquidity would involve costs to the economy (which is why the repo market exists in the first place);
- further analysis of the consequences of eliminating short-term repos is required.

3.3.1 The Commission's assessment

The Commission considers the economic similarity between (taxed) repos and (untaxed) secured lending, but decides that repos should be taxed since 'Not taxing repurchase agreements would harm fiscal neutrality in so far as a combination of spot sales (purchases) and forward contracts as well as securities lending and borrowing would be taxed while repurchase agreements would not.'²³

The Commission does not include in its revenue estimates any revenues from taxing repos, as it assumes that all repos shift into untaxed secured lending, which is a conservative assumption.²⁴ The Commission also, however, does not assess any negative wider economic implications from the taxation of repos, even though it accepts that short-term repos would become uneconomic (and likely cease to exist as a significant market). Even if there are other, non-taxed, equivalent transactions (see above), these transactions are highly likely to have higher costs than the (current) repo transactions.²⁵ These additional costs will create their own (negative) impact on the economy, and clearly should be taken into account. (In the outcome where all repo transactions disappear, there would be negative consequences for the economy, but no tax revenues would be generated.)

3.3.2 The economic value of repos

Repos are, however, likely to have significant wider economic value. The market for repos in the 11 Member States was around €3.2 trillion in 2012,²⁶ which is extremely significant.

Repos mitigate risk for participants by the transfer of ownership and the right to resell the assets during the repo. This transfer of ownership reduces credit risk as buyers of a repo can easily sell a liquid asset in the event of counterparty default and buyers can sell or repurchase (some of) the assets and use the cash to take collateral from a third party whose credit risk is uncorrelated (or has low correlation) with the original counterparty. This process ensures that repo funding efficiently minimises credit risk for a given counterparty as opposed to other forms of funding. The repo market for these securities allows a more transparent process for funding compared with traditional loans and can further mitigate risk through the use of central counterparty clearing.

Repos therefore provide liquidity by encouraging more participants to offer cash and securities by allowing risk-averse holders of cash and capital to invest in low-risk transactions through their ownership of the security. By allowing holders of securities to access cash, repos encourage the purchase and supply of relatively less liquid securities as opposed to holding cash, as well as offering an alternative to traditional security lending.

In particular, repos are widely used for facilitating the issuance of primary debt. In the primary market, debt is often issued to a small number of primary dealers with which the issuer has a relationship to ensure orderly and efficient auctions. To fund their bids at auctions, primary dealers often use repos due to their relatively low cost. Repos are also used to ensure

²³ See p. 29 of the Commission's latest impact assessment.

²⁴ In a recent report, the International Capital Market Association (ICMA) found that the short-term repo market would contract by at least 66%. See ICMA (2013), 'Collateral damage: the impact of the Financial Transaction Tax on the European repo market and its consequences for the financial markets and the real economy', April.

²⁵ In a competitive market, if the alternatives to repos were as cheap as repos, it would be expected that the alternative transactions would have already displaced the repo transactions.

²⁶ ICMA data for the notional value of repurchase agreements in 2012. To estimate the potential FTT revenues from repos, it would be necessary to examine the rate of repo transactions as well as the outstanding notional value. See ICMA (2013), 'Collateral damage: the impact of the Financial Transaction Tax on the European repo market and its consequences for the financial markets and the real economy', April.

liquidity in the secondary market by allowing market makers to access securities and therefore have smaller inventories and less risk of constraint on supply. Furthermore, to hedge and cover their positions, market makers use the flexibility of the repo market to acquire and sell securities not in their inventory at short notice.

If repo markets were to be significantly impeded, funding would become more inefficient due to a loss of the benefits given above. With less access to securities and cash for financial actors, the probability of settlement failure and default might increase, liquidity and efficiency of related markets might fall, and the quality of collateral and capital management could decline. A recent report by the ICMA finds that the repo and securities lending markets currently play the vital role of providing an efficient, resilient and liquid market for collateral, which is required for an orderly and stable financial system. ICMA concludes that extinguishing significant parts of these markets should be 'a matter of the greatest concern for regulators, central banks, financial intermediaries, investors and borrowers (not least governments)'.²⁷

Overall, a move towards lending as opposed to repos will be likely to increase risk and inefficiency in the financial system.

The taxing of repos therefore represents another step in reducing the efficiency of financial intermediation, increasing the costs of transferring funds from savers to investors. The cost of the tax (either as tax paid, or by forcing participants to use more costly alternatives) can therefore, as before, be expected to fall on companies and governments, in the form of higher costs of funding (including bank lending, which is not directly taxed), and on savers, in the form of lower rates of return.

3.4 Derivatives

Unlike existing FTTs in Europe, the proposed FTT would include derivatives. The Commission aims to include as broad a range of financial transactions as possible, but it is notable that so far national governments have generally not done so.²⁸ Section 6.2.4 of the Commission's latest impact assessment considers the impact of the tax on derivatives.

Having reviewed the Commission's latest assessment of the taxing of derivatives trading, Oxera summarises its findings as follows:

- the Commission is aware that the impact of the FTT on derivatives trading volumes is likely to be significant (it assumes a resultant drop in volumes of around 75%), but concludes that the loss of derivatives trading will not have a significant impact on the wider economy as it simply reflects 'a drying out of the rent-generation business models for the financial sector itself';²⁹
- the extent to which derivatives trading volumes will decline is highly uncertain and consequently the expected revenues from the FTT are also highly uncertain, as the Commission forecasts that two-thirds of total FTT revenues will come from derivatives;
- the impact of the tax on trading volumes will not be equal across different uses of derivatives—some hedging strategies will be affected much more severely than others;
- on the basis that some activities will be hit much harder than others, the Commission's assumption that the loss of derivatives trading will have no wider economic impact becomes less tenable; lost derivatives activity by end-users is likely to produce significant economic impacts, and these should be considered by the Commission.

²⁷ See ICMA (2013), 'A supplementary note on the systemic importance of collateral and the role of the repo market', May 7th.

²⁸ At the time of writing, Italy plans to introduce an FTT on certain derivatives on July 1st 2013.

²⁹ See p. 30 of the Commission's latest impact assessment.

3.4.1 The Commission's assessment

The Commission identifies the fast-growing derivatives market as being appropriate for the scope of the FTT because derivatives are used not just for hedging and risk management, but also for financial trading in their own right. It acknowledges that most countries do not apply FTT's to derivatives, however, which it identifies to be due to concern about:

- the mobility of the tax base;
- the difficulty in defining a proper taxable amount;
- the fact that most of the high-volume/high-value derivatives agreements are concluded over the counter (OTC);
- the reluctance of taxing risk-hedging activities having as a purpose to 'oil the wheels' of the real economy.

The Commission believes that it addresses all these concerns, as:

- the residency principle makes it possible to tax derivatives trading, further aided by the expected shift from OTC to exchange-based trading, making derivatives trading more transparent (and hence taxable);
- the notional value provides a suitable taxable amount, mainly for reasons of administrative ease, but also helping to discourage highly-leveraged derivatives;
- much of the derivatives trading is seen as being unnecessary for the wider economy.

Most importantly, however, the Commission expects that taxing derivatives trading will provide an estimated €21 billion in revenue, of a total of €34 billion. This estimate is based critically on the assumed c.75% reduction in derivatives trading. No new quantitative assessment of the reduction in derivatives trading has been conducted.

3.4.2 Volume uncertainty

The likely impact of the FTT on the volume of derivatives is highly uncertain. In its original economic impact assessment, the Commission developed two scenarios for the loss of derivatives trading: by 70% and by 90%.

A more extreme scenario is plausible, however. In the original impact assessment, the Commission noted that there was a 98% drop in volumes in the Swedish bond futures market when Sweden introduced an FTT in 1989–90.

The sensitivity of the assumed FTT revenues to the impact on derivatives trading is large, as the Commission assumes that nearly two-thirds of revenues come from derivatives. For example, if the impact on derivatives trading were 90% rather than 70% then (based on the Commission's estimates) the total FTT revenues would be €20 billion rather than €34 billion.³⁰

3.4.3 Impact of the FTT on different trading strategies

The impact of the FTT on derivatives trading strategies varies considerably, depending on:

- the relationship between economic value and notional value; highly leveraged derivatives can have a high notional value relative to economic value, and therefore the burden of the tax will be much greater;

³⁰ This assumes that the €13 billion of revenues from other sources (not derivatives) remains unchanged, and the €21 billion of revenues from derivatives is reduced by two-thirds.

- the frequency of trading; some trading strategies require hedging positions to be frequently updated, each time incurring the FTT;
- the complexity of the strategy; some hedging positions require a number of different derivatives to be traded—for example, for a number of different currency and interest rate positions.

The Commission touches on this issue, and includes in the impact assessment the example of delta hedging, which would incur the tax repeatedly (and therefore face a high burden). However, the Commission does not include a systematic appraisal of how the FTT would affect different derivatives trading strategies.

There are many possible examples of the use of derivatives that would be hit relatively hard by the proposed FTT. For example:

- derivatives used to provide minimum-return guarantees on retail products (eg, pensions)—these could involve options to sell assets at prices significantly lower than current market prices (technically: a put option that is significantly ‘out of the money’). These options will have much higher notional value than economic value (as the option is likely to be exercised only if there is an unexpectedly large decline in prices). Consequently, the cost of the tax would be high relative to the economic value, and such positions would be discouraged;
- interest rate and FX-related derivatives used by banks to hedge risk involved with bank lending, which ultimately affect bank lending interest rates. Numerous related derivative transactions could result in a relatively high cost of these hedging activities, given the FTT.

In these examples, the tax is shown to have a significant impact on certain uses of derivatives that end-investors employ in order to reduce risk, and are not in line with the Commission’s depiction of ‘noise’ traders or high-risk leveraged speculators. A systematic appraisal would demonstrate that the burden of the tax will change substantially depending on the exact strategy and use of derivatives, and that some end-investors will cease their use with consequent losses.

3.4.4 Economic impact

The economic impact of taxing derivatives can be considered as comprising two elements:

- the tax burden on end-users;
- the economic impact arising from reduced use of derivatives by end-users.

As noted above, the tax revenue collected from derivatives trading (estimated by the Commission to be €21 billion) will ultimately fall on the end-users of derivatives. This burden will in turn affect final product prices and, to some extent, the wages and shareholder returns paid by end-users.

The Commission could argue that its approach to estimating the economic impact of the FTT already attempts to capture this economic impact, even though its model focuses on corporate equity finance, as the model produces a similar total tax revenue (including derivatives). However, its assessment does not consider any costs arising from end-users not using derivatives due to the FTT.

As noted above, the Commission assumes that the loss of trading simply reflects ‘a drying out of the rent-generation business models for the financial sector itself’. However, this position appears less tenable if particular types of derivative currently demanded by end-users are particularly discouraged by the FTT, resulting in end-users not demanding those derivative contracts.

In this case, end-users will need to shift to some new (more expensive, but not taxed) activity for the cheaper (before tax) derivative contract. This cost shock can be expected to be reflected in final product prices (or wages/profits). Hence there will be higher prices in the final product market, but no tax revenues.

In summary, the Commission needs to consider the types of derivative contract that are particularly discouraged by the FTT in order to fully understand the economic impact of the tax.

3.5 Pension funds

There have also been calls for pension funds to be exempt from the FTT, reflecting the desire to encourage long-term saving into pension funds. Unlike for market makers, however, exemptions for pension funds are not standard practice with national FTTs. The Commission considers, in section 6.3.4, the impact of the FTT on pension funds, and concludes that the FTT ‘can be expected to have a rather limited impact’ on pension funds and the Commission wishes to maintain a level playing field.

Having reviewed the Commission’s latest assessment of the taxing of pension funds, Oxera summarises its findings as follows:

- the Commission’s illustrations of the impact on pension funds present a relatively severe impact for an illustrative actively managed fund; the impact of the FTT accumulates significantly over time;
- the FTT would therefore further undermine the confidence of savers in making long-term provisions for retirement, which would conflict with other Commission objectives to boost pension provision;
- the impact would vary across different pension products, and potentially encourage funds to shift into untaxed investments, which may or may not be in the interests of consumers. Further analysis of this impact by the Commission would be appropriate.

3.5.1 The Commission’s assessment

The Commission assesses the impact of the tax on two illustrative pension funds, one passive and one active in terms of trading. It finds a very small impact on the passive fund and a substantial impact on the active fund (reducing the final pension by nearly 8%).

The Commission nevertheless concludes that ‘the FTT...can be expected to have a rather limited impact on pillar II and pillar III pension funds and their beneficiaries’, despite the large impact on the active fund. This is due to assumed mitigating actions, such as reducing trading activities, not using repos, and reducing derivative contracts—all of which are presumed to be completely costless changes. The Commission also suggests that the pension funds would benefit from the reduction of activities by financial intermediaries through lower transaction costs, which is contrary to the evidence that lower liquidity increases transaction costs.

3.5.2 Confidence in long-term savings

The Commission supports the development of private pension funds, but taxing those funds through the FTT will not raise the confidence of savers, particularly with regard to actively managed funds where the Commission’s own analysis shows that the impact of the FTT could be large (the 8% drop in returns the Commission shows would surely deter many savers).

Ultimately, any FTT is a tax on the end-users of financial instruments, which includes pension funds. Any changes in pension fund activities in response to the FTT will bring new costs, which have not been considered by the Commission.

3.5.3 Impact on pension fund activities

The Commission's analysis suggests that pension funds should adopt buy-and-hold strategies, and identifies that the tax would favour such strategies over more active asset management. However, the picture is more complex than this. Pension funds have other options, which would reduce or avoid the FTT as well, such as investing in foreign funds (outside the FTT zone), private equity and commercial property. These alternatives, and their associated risks, have not been considered.

3.5.4 Summary

Ideally, to achieve a proper assessment of the impact, the Commission should conduct analysis on the impact on a range of different pension products in different EU countries, as there is considerable variation in their investment strategies. It should also explore the alternative strategies that pension funds may adopt, and the costs and risks associated with these alternatives.

A1 Analysis of the Commission's previous impact assessments

On September 28th 2011, the European Commission adopted a proposal for an FTT that would tax financial institutions conducting transactions in equities, bond and derivatives either as the buyer or the seller. The proposed tax rate was (and still is) 0.1% of the value of the security for equities and bonds and 0.01% of the notional value in the case of derivatives, with the tax applying twice to each transaction (to both buyer and seller) in most cases.

Attached to the Commission's proposal were research documents providing information for the Commission's economic impact assessment. The research included some interesting findings, with some that might not provide support for the proposals, such as a potentially material negative impact on the annual GDP of the EU of 0.53%.³¹ The Commission's research also found a significant negative impact on employment in the long run.³²

AFME, ASSOSIM (Italian Association of Financial Intermediaries) and Nordic Securities Association (NSA) asked Oxera to review the Commission's impact assessment of the proposals.³³

Oxera's (2011) review of the impact assessment found that the Commission's own macroeconomic model suggests that the impact will be greater than the Commission outlined in its proposal. This was because, although Oxera found many of the Commission's assumptions to be valid, some were unlikely to be valid and a number of additional effects had been overlooked, as follows.

- The Commission's economic impact assessment was based on a significantly lower burden of FTT than was expected in the revenue-raising estimate in its proposal, suggesting that the proposal would either have a greater economic impact or would generate significantly less revenue.
- The Commission assumed that the ending of high-frequency trading in the EU (due to the FTT) would mitigate the economic impact; this assumption was not supported by the evidence and appears to be inconsistent with the modelling of the economic impact.
- The financing of business investment using retained earnings was unlikely to be 'ring-fenced' (ie, assumed to be unaffected by the tax) to the degree assumed by the Commission, further exacerbating the negative impact on GDP.
- The possibility of financial services and capital relocating outside the EU makes the economic impact highly uncertain. These effects have not been modelled by the Commission.

Adjusting the modelling results to reflect more realistic scenarios, Oxera found that the negative economic impact could be in excess of 2% of GDP, resulting in a loss of general tax revenue of nearly 1% of GDP. At these levels of impact on GDP, there is a risk that the imposition of the tax actually reduces total tax revenues from the economy. Given this risk, Oxera considered that the impact assessment would need to be significantly more thorough

³¹ See European Commission (2011), 'Proposal for a Council Directive on a common system of financial transaction tax and amending Directive 2008/7/EC', COM(2011) 594 final.

³² The Commission's model before adjustments found a 0.34% fall in employment in the long run, which would translate to around 750,000 jobs, given total EU employment of around 220m. The Commission's downward adjustments to the GDP impact (which would also apply to the employment impact) were questioned in Oxera (2011). See p. 34 of part 16 of the Commission's impact assessment and Oxera (2011) for further details.

³³ Oxera (2011), op. cit.

and based on more robust evidence before a well-informed decision could be made about the proposed FTT.

On May 4th 2012, the Commission published seven additional explanatory notes in relation to the proposed introduction of the FTT. These notes summarised the results of further analysis—including a new economic model to assess the macroeconomic impact of taxation on financial transactions (ECFIN 450)³⁴—and provided clarification on how the FTT would work in practice, although the details of the FTT remained as originally proposed.

AFME, ASSOSIM and NSA also asked Oxera to review the additional explanatory notes.³⁵ In conclusion, Oxera's review of the new analysis found that many of shortcomings of the September impact assessment, as set out in Oxera (2011), remained. These shortcomings included:

- there remained inconsistencies between the revenue estimate and the estimate of the economic impact, particularly due to derivatives not being included in the latter despite being expected to produce two-thirds of the tax revenue;
- the new analysis underestimated the economic impact of the FTT by more than the original impact assessment, for example due to assuming that the FTT has no impact on bank lending (despite taxing bank activities such as hedging);
- the proposed tax remained an inefficient way to raise public funds, which can be expected as the FTT is a tax on investment in productive capacity;
- the economic impact assessment failed to address a number of potential unintended consequences, a number of which were discussed in Oxera (2011).

Oxera's review of the new analysis by the Commission found that the proposed tax is an inefficient way to raise public funds, with a potentially significant adverse effect on the wider economy. The Commission's own analysis suggested that in order to raise 1% of FTT revenue, the European economy could be expected to sacrifice 2% of annual GDP. This reduction in the level of economic activity would be expected to reduce government tax revenue from other sources, such as labour and consumption taxes, thereby implying an even worse overall tax efficiency.

Based on the current total tax revenue burden of around 40% of GDP in the EU, it can be estimated that some 80% of the €57 billion revenue (as estimated in the Commission's impact assessment) would be lost owing to the negative impact on other tax sources. This means that, even based on the Commission's own assumptions, the tax would not appear efficient in collecting revenue.

The efficiency of the tax looked even worse when some of the Commission's assumptions were adjusted to reflect more realistic scenarios—for example, in relation to the broader impact on the different forms of company finance. The Commission continued to draw the incorrect conclusion that 'borrowing from banks and the raising of capital through venture capital funds are not taxed'.³⁶

In addition, the Commission's new analysis continued to assume that the economy is closed and that there is only one type of financial instrument—for example, derivatives are not considered in the Commission's revised analysis.

³⁴ Lendavi, J., Raciborski, R. and Vogel, L. (2012), 'Securities transaction taxes: Macroeconomic implications in a general-equilibrium model', *European Economy, Economic Papers 450*, March.

³⁵ Oxera (2012), 'What would be the economic impact on the EU of the proposed financial transaction tax? Review of the European Commission's latest commentary', June.

³⁶ European Commission (2012), 'Technical Fiche: Macroeconomic impacts', May.

Assuming that the economy is closed meant that the analysis could not provide any information on the extent to which the tax might result in the relocation of financial services and capital away from the EU. The assumption that there is only one type of financial instrument meant that the analysis did not consider the full unintended consequences of the tax. For example, the tax might increase the cost of effective risk management through the trading of derivatives, and therefore discourage such risk management, and is likely to increase the cost of government debt.

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