



Hanging London out to dry

The impact of an EU Financial Transaction Tax

By Adam Baldwin & Sam Bowman

Executive Summary

1. The European Commission has proposed a Financial Transaction Tax (FTT) on all securities traded with at least one party within the European Union. A tax of 0.1% would be applied to shares and bonds trades and 0.01% to derivatives trades, including over-the-counter derivatives, of which London is a world centre.
2. The EC's impact assessment projects a 1.76% hit to long-term (20-year) growth across the EU. This would amount to a £25.58 billion cost to the UK economy over this period, and a £185 billion cost to the total European Union economy (2010 prices). This is based on a direct application of the cost to Britain's economy. The true figure is likely to be far greater, because of Britain's disproportionately large financial sector (and especially its derivatives trading sector).
3. The EC impact assessment also projects up to a 90% decline in derivatives trading if its proposed Financial Transaction Tax is implemented. The City of London is the centre of global over-the-counter derivatives trading, accounting for nearly half (45.8%) of all global interest rates derivatives turnover. This would adversely and disproportionately hurt the London economy, and would destroy a socially-valuable financial activity that is integral to the modern British economy.
4. Contrary to some supporters of the FTT, the tax would increase market volatility. There is no empirical support for the idea that the FTT would reduce volatility. Indeed, by making transactions more costly, the tax would make markets less responsive to new information and more prone to violent lurches up and down. Academic models of the tax have been inconclusive at best.
5. The FTT would reduce market liquidity in all securities markets. 40% of the London Stock Exchange's volume is based on high-volume, low-margin transactions, which would be wiped out by the FTT, making markets far more illiquid. Markets' ability to incorporate new information into asset prices would be undermined.
6. Unemployment would rise if an FTT was introduced. At the margin, the FTT would mean less investment and less output. The tax, if implemented in 2014 as proposed by the EC, would slow down an economic recovery and reduce capital investment. The EC's long-run projection for this is a 4.5% reduction in investment.
7. If the FTT was only introduced in the EU or G20, many traders currently operating in the UK would relocate to places like Hong Kong, Singapore or Zurich. There is little scope for a worldwide FTT – even types of trades that are affected in a minor way by the FTT would likely move *en masse* to other jurisdictions that would flourish as FTT-free zones.

Introduction

London is Europe's leading financial centre. 80% of Europe's hedge fund assets are managed in London. In 2010, foreign exchange turnover in the UK reached over \$1.8 trillion daily, accounting for 36.7% of the global total. Twice as many US dollars are traded in London than in the US itself, and more than twice as many euros are traded in London than in the whole of the Euro-areas combined. Nearly all of the EU's over-the-counter derivatives are traded in London.

Overtaking manufacturing in the early 1990s, the UK financial services sector now stands as Britain's flagship

national industry. The tax revenue generated from the UK financial services sector in 2009/10 was £53.4bn, representing 11% of total UK government tax receipts. To put this in perspective, this is greater than the total annual Defence budget and nearly as much as the Department of Education's total resource budget. Financial services account for 28% of the UK's total exports of services, with banks standing as the largest single contributor.

As a global financial powerhouse, out of all of the European member states, the UK has by far the most at risk from the proposed Financial Transaction Tax (FTT). This paper will assess the arguments made in favour of an FTT, and argue that in almost every case proponents of these taxes are deeply misguided. In fact, an FTT could cripple the British economy, would fail to raise any significant revenue, and would increase volatility in the markets it affects. Using the European Commission's own impact assessment, we estimate the damage to the UK economy that an FTT would cause.

In this report, we build on previous work by Adam Baldwin for the Adam Smith Institute on the Tobin Tax, focussing on the impact of the proposed Financial Transaction Tax. We do not discuss the "Robin Hood Tax" specifically, as proposals for it are vague at best, but many of the arguments against an FTT should also apply to many of the proposals of Robin Hood Tax campaigners.

We focus on six key impacts that a Financial Transaction Tax would have on the UK economy:

1. Elimination of derivatives trading in the City of London.
2. Increased market volatility
3. Reduced market liquidity
4. Higher unemployment
5. Greater tax avoidance
6. Reduced tax revenues

What is a Financial Transaction Tax?

An FTT is not a new concept, but since the 2008 financial crisis it has slowly crept into mainstream European political debate.

In 1971, James Tobin outlined his 'Tobin Tax' (a proportional tax on all spot conversions from one currency into another), the precursor to the financial transaction tax. In 1999, Canada became the first G20 country to formally consent to an FTT, with implementation contingent on other G20 countries' agreement. In 2004, an approval by the Belgian Federal Parliament of the 'Spahn Tax' paved the way for

future financial transaction taxes within Europe, on the condition that other Eurozone members acted accordingly.

The 2008 financial crisis has fuelled yet another resurgence in public opinion towards an FTT, particularly within the Eurozone. In particular, a form of the idea has become the *cause célèbre* of the Robin Hood Tax campaign, a UK group with the backing of celebrities, charities, religious leaders and trade unions.

Over the past 12 months, Nicolas Sarkozy, Herman Van Rompuy, Ed Balls, Ed Milliband, José Manuel Barroso and Joseph Stiglitz have all separately expressed their support for such a tax. Recent European Commission analysis has focused largely upon 2 options; a 'Financial Transaction Tax' (FTT) and a 'Financial Activities Tax' (FAT). A FAT would be focused upon the profits and the pay structures of firms (as oppose to transactions). The Financial Transaction Tax, a spot tax on financial exchanges, has emerged as the preferred option.

The European Commission believes that the proposed FTT, if adopted, will aid future ambitions for the universal adoption of an FTT within the G20 nations:

*"The financial sector has played a major role in causing the economic crisis whilst governments and European citizens at large have borne the cost. There is a strong consensus within Europe and internationally that the financial sector should contribute more fairly given the costs of dealing with the crisis and the current under-taxation of the sector"*¹

The political motivations driving the FTT are unmistakable; a vote-winning taxation in the midst of the 2011 Eurozone crisis as a symbolic redistribution of wealth from the 'rich' to the 'poor'. The FTT also serves to distract from governmental failings and provides a scapegoat for the Eurozone crisis. Eurozone governments that have and continue to overspend have welcomed a chance to blame markets for their problems, instead of themselves.

European Commission Financial Transaction Tax Proposals
A Financial Transaction tax (FTT) is a tax placed on a specific type of financial transaction. By placing a small, proportional tax on financial transactions, advocates argue, short-term transactions are discouraged in favour of longer-term transactions. This, it is claimed, reduces market speculation and enables a sounder management of market volatility.

Excluding transactions with the European Central Bank (ECB) and national central banks, the recent European Commission (EC) proposal for an FTT would cover capital market instruments, money-market instruments (excluding instruments of payment), shares in collective investment undertakings (including UCITS and alternative investment funds) and derivatives agreements.

The tax would also cover so-called “over-the-counter” transactions, and would be “not limited to the transfer of ownership but rather represents the obligation entered into”.²

The EC’s proposals are for a 0.1% tax on all equity and bond transactions in which one party is based in an EU country, and a 0.01% tax on derivatives. The EC claims that this tax would raise approximately £50bn per year. The UK government says that it will oppose any FTT that is not levied globally: as this report will argue, even global implementation would not address many of the key problems with an FTT.

Financial Impact of an FTT

Derivatives

The European Commission’s impact assessment has modelled the potential damage that an EU-wide Financial Transaction tax would do to GDP of EU member states. In this section we discuss this impact assessment and apply the European Commission’s figures to the UK economy, demonstrating the harm that a transaction tax could do to the British economy.

The EC’s projections are based on a complex model that attempts to anticipate market reactions to the FTT, applied under different scenarios (such as size of FTT, regulatory environment, market elasticity and other variables). We have reservations about the utility of any model of this kind – human action is extremely difficult to model. Nevertheless, the EC’s figures are worth considering – by the Commission’s own admission, the FTT would have a significant negative impact on the growth of the British economy.

The impact assessment projects that a tax on securities exchanges of 0.1% would reduce future long-term GDP growth by 1.76%.³ The model also projects that a 0.01% tax would reduce future long-term GDP by around 0.17%. The FTT proposed by the European Commission is a 0.1% rate for shares and bonds, and a 0.01% rate for derivatives.

We believe that the upper-bound projection for this is more likely to hold true: the impact of a 0.01% transaction tax on derivatives exchanges is likely to be enormous, wiping out profitability for the high-volume, low-yield exchanges that are common in derivatives markets.

Applying this 1.76% contraction figure to current UK GDP levels implies a long-term (twenty year) cost to the British economy of £25.58 billion at 2010 prices. This figure is likely to be even higher given the disproportionate size of the UK’s derivatives trading sector compared with the European Union as a whole, and the fact that the 1.76% figure will be spread across a twenty-year period where the economy is expected to grow. The cost to the European Union is approximately €216 billion. It should be stressed that this figure be treated with caution, because of the limitations of economic modelling, but it is a stark warning to British policymakers about the impact of the EC’s FTT.

What explains this very large contraction in UK GDP? As noted above, the FTT proposed by the European Commission would affect over the counter (OTC) trades, as well as exchange traded derivatives. The world OTC market is primarily based in London – this sector would be disproportionately hit by an FTT.⁴

To take a key sector of the derivatives market as an example, the City accounts for 45.8% of total global interest rates derivatives turnover, or \$1.23 trillion per day. (Interest rates derivatives account for the bulk of UK derivatives market: according to the Treasury, in 2010 approximately 70% of outstanding over the counter exchanges were of interest rate contracts).

European Union countries account for 61.6% of global interest rates derivatives turnover. The Bank for International Settlements’ calculation of geographical distribution of global interest rate derivatives turnover reveals the City of London’s massive dominance of derivatives trading in the EU. The City accounts for 74.4% of interest rate derivatives turnover within the EU. Its next biggest rivals are France and Germany, with a comparatively paltry 11.7% and 2.9% EU share respectively.

As well as the above decline in GDP growth, the European Commission impact assessment projects a 90% decline in derivatives trading activity. This is, in and of itself, a net negative – derivatives trading allows people to hedge real-world risks. Any measure that would all but wipe it out should be viewed with extreme caution.

Derivatives trading allows traders to hedge their investments, with significant social benefits. An example of a service that derivatives markets allow are fixed rate mortgages: interest rate derivatives markets allow discovery of the appropriate interest rate for fixed rate mortgages. Without them, there would be less precision and more difficulty for mortgage providers wanting to offer fixed rate contracts.⁵

Volatility

Perhaps the single largest economical advantage put forward by advocates of a European FTT is a reduction of market volatility. But the contrary is true: an FTT would raise volatility, not reduce it.

Derivatives traders act as speculators: a vital role in a healthy market. Milton Friedman argued that it was impossible for speculators to destabilize a market – they can only profit by anticipating and buying on real trends in asset prices.⁶ Speculators act as shock absorbers, selling into a rising price and buying into a falling price. A trader cannot destabilize the market by forcing it up or down, because they would be either buying at the top of the market or selling at the bottom, guaranteeing that they would lose money.

The only exception to this is when speculators sense a market imbalance. New information must be incorporated into asset prices through exchanges. Restricting these trades may appear to reduce volatility, but in reality they blindfold markets to new information and make prices less reflective of real-world information.

The role of prices in the economy – to convey real-world information about supply and demand – can only be performed if free exchange is allowed. In the case of derivatives, where exchanges are often very high volume at a very low margin very rapidly, an apparently small tax would make many trades impossible, preventing the market from incorporating real-world information into asset prices. This would make markets more prone to large lurches once significant ‘real-world’ information appears; instead of constantly fine-tuning the price, traders would save up trades, making markets less responsive to new information and more volatile.

The term ‘volatility’ is contentious; defining and measuring volatility has long been disputed. Perhaps coincidentally, the recent political discourse surrounding the proposed FTT has harvested a separate bespoke conceptual understanding of the term volatility. Rejecting the more traditional definitions of volatility, many FTT advocates have

adopted ‘volatility’ not in its traditional sense, but treating it as a longer-term excess of speculative prices.

An aggregation of the theoretical volatility simulations performed on FTTs show their effects to be much less straightforward than the theory suggests, with no consistent, clear, convincing answer emerging either for or against a reduction in volatility.⁷ Whilst some studies suggest FTTs to reduce volatility, some conclude the opposite.⁸ Aggregated, the results stand as inconclusive.

Even ‘Heterogenous Agent Models’ (HAMs) which seek to more closely mimic the irrationalities, excess liquidity, fat tailed distributions and volatility clustering of financial markets, provide largely inconclusive results when aggregated. Similar inconclusiveness exists under Zero Intelligence Models (ZIMs).

The practical experience with the application of an FTT is even less encouraging. Whilst no pure, direct empirical study exists for comparison with the European financial markets, an aggregation of the floating empirical evidence provided by those nations who have experimented with increasing transaction costs offers, yet again, no clear support for market volatility reduction.⁹

A cross-study, consistent, empirically convincing causal link, be that statistical or econometric, has yet to be found between an increase in transaction costs and a reduction in volatility. In fact, in most equity and foreign exchange empirical studies a positive relationship between increasing transaction costs and higher levels of volatility is revealed. This is usually accompanied by significant declines in turnover, stock prices and a migration of trading activity.¹⁰ Empirical studies of tick size changes give the same results.¹¹

Liquidity

A huge risk of the proposed FTT is a reduction in the market volume of transactions. The EC proposal itself acknowledges this.¹² As the 2008 ‘credit crisis’ has crudely illustrated, liquidity is a key determinant of market quality. Illiquid, thin markets quickly become dangerously volatile. An FTT could provide similar liquidity-reducing effects.

Financial trades serve to incorporate new information into asset prices. All market participants would be subject to the tax; an FTT is unable to discriminate between destabilising trades and those which provide liquidity, information and trade financing. Naturally, by increasing transaction costs an FTT will discourage the business model of higher-

frequency trading in favour of less volume, but higher margin transactions.

According to a recent Credit Suisse report, 40% of the daily London Stock Exchange volume derives from higher-frequency trading which would be significantly reduced by an FTT. In the words of Credit Suisse, “markets could become more volatile and revenues could undershoot estimates substantially”.¹³

With short-term trading providing invaluable liquidity to the market, an incapability to segregate individual trader motivations will reduce both liquidity and welfare-enhancing trade, in addition to increasing market susceptibility to individual shocks. In short, an FTT would increase costs for long-term investors, and act as a disincentive for market makers to provide liquidity.

Unemployment

Anyone looking for evidence of the recklessness and irresponsibility motivating the underlying formulation of the EC proposal need look no further than page 5:

“Private households and SMEs not actively investing in financial markets would hardly be affected by this proposal thanks to the ring-fencing features built in the design of the FTT” (EC Proposal, p5).

It is truly naive to suggest that the wider economy would “hardly be affected” by a tax designed to extract billions of pounds from a key sector of the economy.

Contrary to the claims of Eurozone governments and the Robin Hood Tax campaign, the proposed FTT is not a tax on ‘bankers’; it is a tax on financial transactions. An FTT would raise the cost of capital, inevitably lowering investment over the long-run. Ultimately, a lowering of investment would result in a decrease of output; causing wages and employment to fall, offsetting the short-term gain from the tax. (The European Commission’s impact assessment estimates a long-run drop of 4.5% in capital investment.)¹⁴

As a simple illustration, imagine a home insurance policy of £500,000 on a house. If a fire burnt the house to the ground, the insurance company would be obliged to pay up to £500,000. Naturally, the insurance company would want to reinsure this £500,000 risk, and thus enter into a socially useful, non-speculative financial transaction that allows . But with a 0.1% FTT, this results in a £500 tax that will be passed on to the consumer.

Our financial services sector is the UK’s flagship national industry, representing the face of British business globally. Employing over 1.9 million people (6% of the UK total), the trade surplus of the UK financial services sector is larger than the combined surplus of all other net exporting industries in the UK. The tax revenue generated from the UK financial services sector in 2009/10 was £53.4bn, representing 11% of total UK government tax receipts.

A Euro-only administered FTT would undoubtedly result in job losses both within the UK financial sector and within supporting industries through employment spillover effects. It is impossible to shield the broader economy from the performance of the City. Rightly or wrongly, the general atmosphere and functionality within the UK economy is directly reliant upon the health of the Square Mile.

Tax Avoidance

“In order to best minimise risks, a coordinated approach at international level is the best option” (EC proposal, p3).

Despite the above admission, we must remember that both US Treasury Secretary Tim Geithner and Chinese and Indian officials have repeatedly stated that they will not pass an FTT:

“A day-by-day financial transaction tax is not something we’re prepared to support”¹⁵ – US Treasury Secretary Tim Geithner.

The global financial services industry enjoys an extraordinarily high level of factor mobility. Globalisation, coupled with increasingly open national borders and technological advancements are allowing capital flight to become increasingly easier within our truly global financial institutions. After all, moving trades from London to New York, Zurich, Hong Kong or Singapore is hardly beyond the realms of possibility.

Whilst more heterogeneity can exist for complex, OTC securities, the homogeneity of exchange-traded products, and indeed the financial services industry as a whole results in a highly competitive, global industry. Will cross-border arbitrage with non-consenting jurisdictions be minimal? It seems unlikely. Will companies continue to list in Europe, when transaction (and compliance) costs are considerably lower in, say, Hong Kong? Again, this seems unlikely.

A globally coordinated adoption of an FTT is therefore by far the largest pre-requisite for any discussion to progress.

A Euro-only approach to the FTT would undoubtedly erode the relative competitiveness of Europe within the global economy. Even adoption by the G20 would fail to include some of the key financial trading centres.

Furthermore, in addition to the loss of revenue, a Europe-only FTT fails to acknowledge that the relocated trading that will inevitably result from an FTT will be relatively unregulated by the European authorities. Understandably, through subsidiaries and investment vehicles, banks will relocate at least some of their trading activities out of European jurisdiction to avoid the tax. This increasing fragmentation of the risk profiles of European banks can only increase the probability of future crises.

Tax revenues

The driving force behind the FTT has been clearly politicised; there exists within many Europeans a clear political incentive to support the tax. Unfortunately, however, the political ambitions that the tax could generate for its promoters by appearing ‘tough on the financial sector’ far outweigh its economic capabilities.

The EC estimates that a 0.1% tax on stock and bond transactions, and a 0.01% tax on derivatives will raise approximately €57 billion per year (roughly 10% of global banking profits). In addition, the tax will avoid fragmentation in the internal market for financial services and “create appropriate disincentives for transactions that do not enhance the efficiency of financial markets”.¹⁶

Regardless of the forecasts, viewing the tax as a good way to raise revenue, or the ‘just’ thing to do misses the entire point of fundamental basic taxation theory. The other negative effects – the destruction of the City’s derivatives trading sector, the potential flight of the wider financial sector from London and the rest of the EU, increased market volatility and reduced liquidity and, indeed, reduced long-term revenues – are so significant that the EU should reject the tax irrespective of how much money it expects to make. By prioritising short-term revenue maximisation at the expense of long-term financial health of the EU, the Commission risks bringing economic ruin onto Europe.

Conclusion

James Tobin himself, the father of the FTT, explicitly rejected the Tobin tax as a way of raising revenue.¹⁷ He believed that reducing trading would increase stability – we and most other economists have argued that this is

wrong, but it is a legitimate debate. What is not legitimate is to propose an FTT that would decimate the City of London in order to raise some short-term revenue for EU governments. Blaming markets for the government failures at the root of the crisis may be politically convenient, but it is economically disastrous.

The FTT has been proposed for all of the wrong reasons and will damage Europe’s competitiveness, suppress its economic recovery and increase volatility and unnecessary risk within the European markets. It will cost the UK in terms of economic growth and will ruin the UK’s flagship industry, all for the sake of raising a bit of revenue for profligate Eurozone governments. To protect London and resist politicized anti-market sentiment coming from the Eurozone, the Financial Transaction Tax should at all costs be resisted in any shape or form by Britain’s government.

Appendix 1: Would the levels of market mispricing fostered by a FTT serve to augment the market cycle?

To illustrate, consider the current UK ATM system.¹⁸ At present, no charge or limit is made for withdrawals, and hence users are free to use ATMs as many times as they like, to withdraw whatever amount they wish, for no fee.

Now imagine what would happen if an ATM transaction fee was introduced. The frequency of transactions would decline, and the withdrawal amounts would increase. Instead of withdrawing, say, £10 each day, users would withdraw their whole week’s estimated spend once a week. Such irregular, larger payments would increase the fluctuations of the cash reserves within both the ATM and the wallets of the users; reducing liquidity and increasing market fluctuations.

Through this analogy we can see how an increase in transaction costs could provide a discouragement of the short-term management of risk-exposure, adversely affecting market liquidity. In these thinner markets, each trade would have a larger impact on price; resulting in less fluidity within the currency inventories of broker-dealers, the ‘liquidity providers’ of the market.

“Bear in mind, too, that the most bubble-prone asset market is for housing, which is bought in very lumpy, long-term chunks”. (Tim Harford, FT 20th February 2010).

Appendix 2: Empirical Experience with a Financial Transaction Tax

Sweden provides the clearest case of how destructive an FTT can be, when a 0.5% FTT on the purchase of all equity securities (and stock options) was introduced on 1st January 1984.¹⁹ The tax applied to both domestic and foreign customers, and was levied directly on registered Swedish brokerage services. 'Round trip' taxation effectively made the net taxation 1%, or 100 basis points. This was doubled in 1986, and later to include fixed income.²⁰ A tax on stock options of 2% was also introduced (1% relating to the premium, 1% upon exercise).

Understandably, investors devalued their assets to reflect the present value of future tax payments on the marginal share. An index return of -5.35% was seen over the 30 day period including the announcement. Studies find a statistically significant increase in the daily variance of returns during this period.²¹ Naturally, the markets reacted by demanding an increase in the cost of government borrowing, as higher returns were sought in return for holding increasingly taxed securities. Furthermore, spillover effects disturbed the Swedish market for corporate expansion, employment (both financial sector and the broader economy) and also capital raising activities.

Tax

Tax revenue generation was quite simply embarrassing. Despite official forecasts estimating the fixed income security tax to generate 1.5bn kroner per year (approximately £330 million in 2010 figures), on average only 50 million kroner per year was recognised (approximately £11 million in 2010 figures). Even in its 'finest' year, a mere 80 million kroner was generated from fixed income taxes (approximately £17 million in 2010 figures).²² This represents a thirtyfold overestimate of the actual revenue gathered. Decreasing trading volumes led to secondary effects such as a reduction in capital gains taxes, almost entirely netting the (exceptionally low) tax revenue being generated.

Trading Volume

The taxes sparked an exodus of financial activity from Sweden. Capital flight was ubiquitous. Put simply, whilst the tax presented foreign investors with a huge disincentive to partake in Sweden's financial activities, many domestic investors either took their business abroad, or switched to non-taxed instruments such as forward-rate agreements and swaps. Despite the tax being higher on equities, it was the fixed income market that suffered most. Despite the 'low' 0.003% tax levied on 5-year bonds, trading

volumes dropped by 85% alone in the first week after implementation.²³ Futures trading fell by 98%, and the options market virtually ceased operating. By 1986, 60% of trading volume for the top 11 most traded Swedish stocks had moved to London.²⁴ Trading for over 50% of Swedish equities had moved to London by 1990.²⁵

Appendix 3: Stamp Duty – proof of concept?

The Robin Hood Tax campaign has repeatedly compared the impact of stamp duty on share purchases to the possible impact of a Robin Hood Tax on securities transactions. In fact, the taxes are hardly comparable, given that the biggest impact of the Financial Transaction Tax will be on high-volume, low-yield derivatives trades. Nevertheless, contrary to the Robin Hood Tax campaign's claims, the stamp duty experience underlines the negative effects that come with any kind of transaction tax.

The 1963 introduction of the securities transaction tax into the UK provides a clear example of the impact on market volatility that an increase in transaction costs facilitates. Its nature, combined with the distinct rate changes throughout its life, allow for clear testing of its effects on market volatility, turnover and returns.

Initially introduced at 2% (subsequently fluctuating between 1% and 2%), the tax was gradually reduced to its current level of a 0.5% tax on any purchase of shares of UK companies. Unlike the 1980s Swedish experiment with an FTT, stamp duty is a tax on ownership transfer of companies incorporated in the UK, independent of investor nationality or transaction location. Numerous studies found a significant reduction in equity turnover, with a significant (-3.3%) fall in the FTSE All Share Index returns witnessed in the 1% rate rise in 1974.^{26, 27, 28, 29}

Whilst admittedly the heterogeneity of financial markets make direct comparisons difficult, the consistent lack of supporting evidence, both theoretical and empirical, for the stabilising effects of an FTT is glaringly apparent.

As a result, FTT advocates are left relying upon indirect evidence to show how an FTT could 'stabilise' the European markets. Many (wrongly) believe a reduction in trading volumes to be associated with a reduction in price volatility. At best, this manipulation of evidence provides only a weak, indirect link between an FTT and volatility. At worst, it compares apples and oranges in an effort to justify a tax for which there is little or no justification.

Endnotes

- 1 European Commission, Proposal for a Council Directive on a common system of financial transaction tax and amending Directive 2008/7/EC (Brussels, 2011), p. 2.
- 2 European Commission, "Proposal for a council directive on a common system of financial transaction tax and amending Directive 2008/7/E" (2011), p. 7.
- 3 Commission Staff Working Paper, Impact Assessment Accompanying the document: Proposal for a Council Directive on a common system of financial transaction tax and amending Directive 2008/7/EC, Vol 16, p. 43.
- 4 Deutsche Borse Group, "The global derivatives market: An introduction" (Frankfurt, 2008), p. 12.
- 5 Bank for International Settlements, BIS Quarterly Review (June 2011), p. A 131.
- 6 Milton Friedman, "The case for flexible exchange rates", *Essays in positive economics* (1953), pp. 157–203.
- 7 J. Kaiser, T. Chmura, and T. Pitz, 'The Tobin Tax - a Game-Theoretical and an Experimental Approach', (2007).
- 8 G. Bianconi, T. Galla, M. Marsili, and P. Pin, 'Effects of Tobin Taxes in Minority Game Markets', *Journal of Economic Behavior & Organization* (70.1-2, 2009), pp. 231-240.
- 9 Shing-yang Hu, "The effects of the stock transaction tax on the stock market: Experiences from Asian markets", *Pacific-Basin Finance Journal* 6 (3-4, 1998), pp. 347–364.
- 10 Stephen R. Umlauf, "Transaction Taxes and the behaviour of the Swedish Stock market", *Journal of Financial Economics* (33-2, 1993), pp. 227-240.
- 11 Henrik Bessembinder, "Tick Size, Spreads, and Liquidity: An Analysis of Nasdaq Securities Trading near Ten Dollars", *Journal of Financial Intermediation* (9-3, 2000), pp. 213–239.
- 12 "Proposal for a council directive on a common system of financial transaction tax" (2011), p. 2.
- 13 Carla Antunes-Silva, Credit Suisse reseach note, 2011.
- 14 EC, Impact assessment Vol 16, p. 43.
- 15 <http://www.telegraph.co.uk/finance/6522135/US-Treasury-Secretary-Timothy-Geithner-slaps-down-Gordon-Browns-global-tax.html>
- 16 EC proposal, page 2.
- 17 <http://www.guardian.co.uk/news/2002/mar/13/guardianobituaries.obituaries>
- 18 Milton Friedman, "The case for flexible exchange rates", *Essays in positive economics* (1953), pp. 157–203.
- 19 J. Kaiser, T. Chmura, and T. Pitz, 'The Tobin Tax - a Game-Theoretical and an Experimental Approach', (2007).
- 20 @ 0.002% for bonds < 90 days maturity, 0.003% for bonds > 5 years.
- 21 Umlauf, S.R. (1993) 'Transaction Taxes and the Behavior of the Swedish Stock Market', *Journal of Financial Economics* 33.2: 227-240.
- 22 Campbell, John Y. and Froot, Kenneth A. "International Experiences with Securities Transaction Taxes (December 1993)," NBER Working Paper No. W4587. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=338864
- 23 <http://www.adamsmith.org/blog/tax-and-economy/robbing-hood-tax/>
- 24 <http://www.cityam.com/news-and-analysis/allister-heath/sweden%E2%80%99s-failed-tobin-tax-experiment>
- 25 Umlauf, Steven R. (1993). "Transaction taxes and the behavior or the Swedish stock market". *Journal of Financial Economics* 33 (2): 227–240.
- 26 Jackson, P. and A. O'Donnell, 1985. The effects of stamp duty on equity transactions and prices in the UK Stock Exchange. Bank of England Discussion Paper No. 25.
- 27 Saporta, Victoria; Kan, Kamhon (1998). "The Effects of Stamp Duty on the Level and Volatility of Equity Prices". SSRN Electronic Journal. <http://ssrn.com/abstract=93656>.
- 28 Bond, Steve; Hawkins, Mike; Klemm, Alexander (2005). "Stamp Duty on Shares and Its Effect on Share Prices". *Public Finance Analysis* 61 (3): 275–298. http://ideas.repec.org/a/mhr/finarc/urnsici0015-2218%28200511%29613_275sdosai_2.0.tx_2-v.html.
- 29 Saporta, V. and Kan, K. (1997) The Effects of Stamp Duty on the Level and Volatility of Equity Prices, Bank of England Working Papers N.71, London: Bank of England.