EUROPEAN PARLIAMENT

DIRECTORATE-GENERAL FOR EXTERNAL POLICIES

POLICY DEPARTMENT

THE RATIONALE FOR A FINANCIAL TRANSACTION TAX

DEVE

EN

2010

EUROPEAN PARLIAMENT

DIRECTORATE-GENERAL FOR EXTERNAL POLICIES OF THE UNION

DIRECTORATE B

POLICY DEPARTMENT

STUDY

THE RATIONALE FOR A FINANCIAL TRANSACTION TAX

Abstract

This briefing specifically highlights the benefits of a Financial Transaction Tax (FTT). In political and scientific spheres the FTT is discussed alongside other proposals such as the bank levy or the Financial Activity Tax. The FTT is viewed as the most suitable instrument to help to achieve two objectives: (i) stabilize the markets and (ii) raise funds for domestic fiscal consolidation as well as global challenges such as climate change and poverty eradication. The study suggests that all types of financial transactions should have their trade taxed, which would help curtail particularly short term transactions. One-off transactions, for example for hedging purposes in the real economy, will however hardly be affected. Another advantage of a broad tax base is the fact that already a very small tax rate could yield high revenues. These amounts could help to consolidate national budgets. This consolidation could be linked to a clear fostering of international commitments for improved poverty reduction, mitigating climate change and support developing countries in their adaptation to climate change.

EXPO/B/DEVE/FWC/2009-01/Lot5-08 **November/ 2010**

PE 433.663 **EN**

This study was requested by the European Parliament's Committee on Committee on Development.

AUTHOR(S):

KNOKE, Irene, Südwind Institut, Germany

ADMINISTRATOR RESPONSIBLE:

CAPRILE, Anna
NEGRE Mario (Editor)
Directorate-General for External Policies of the Union
Policy Department
WIB 06 M 075
rue Wiertz 60
B-1047 Brussels

LINGUISTIC VERSIONS

Original: EN

ABOUT THE EDITOR

Manuscript completed on 24 November 2010.
© European Union, [2010]
Printed in [Belgium]

The study is available on the Internet at
http://www.europarl.europa.eu/activities/committees/studies.do?language=EN

If you are unable to download the information you require, please request a paper copy
by e-mail : poldep-expo@europarl.europa.eu

DISCLAIMER

Any opinions expressed in this document are the sole responsibility of the author and do not necessarily represent the official position of the European Parliament.

Reproduction and translation, except for commercial purposes, are authorised, provided the source is acknowledged and provided the publisher is given prior notice and supplied with a copy of the publication.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

EC	European Commission
EU	European Union
FAT	Financial Activity Tax
FTT	Financial Transaction Tax
GDP	Gross Domestic Product
IMF	International Monetary Fond
NGO	Non-Government Organisation
ODA	Official Development Assistance
OTC	Over-the-counter
UNCTAD	United Nations Conference on Trade and Development
VAT	Value Added Taxes

EXECUTIVE SUMMARY

This briefing specifically highlights the potential benefits of a Financial Transaction Tax (FTT). In political and scientific spheres the FTT is discussed alongside other proposals such as the bank levy or the Financial Activity Tax. The FTT is viewed as the most suitable instrument to address two objectives (i) stabilize the markets and (ii) raise funds for domestic fiscal consolidation as well as global challenges such as climate change and poverty eradication. It needs to be stated however that an FTT can help to achieve these goals, but will not be sufficient to prevent all future crises. Other regulating instruments are needed alongside.

This briefing parts from the diagnosis that current financial markets are more characterized by overliquidity and excessive short-term speculation which have been destabilizing the markets ever more often in recent years. Specifically trend following trading behaviour and the increasing use of computer-assisted technical trading of high frequency (intraday) data with high leverage effects have caused longer term deviations of asset prices from their market fundamentals and severe disruption of the world economy. Taxing the trade of (ideally) all types of financial transactions is seen as an effective way to curtail particularly short term transactions, while one-time transactions, for example for hedging purposes in the real economy will hardly be affected.

In order to prevent tax avoidance through swapping to other trading locations or (possibly untaxed) securities, an FTT should ideally be introduced in all markets of the same or akin time zone (i.e. in Europe) and all types of transactions (stock and derivatives, on-exchange and Over-the-counter). This would help to curtail particularly harmful short term transactions. One-off transactions, for example for hedging purposes in the real economy, will however hardly be affected. Moreover, if the underlying of the contract is used as a tax base rather than the margin requirements, transactions with high leverage effects will be more affected than others. Another advantage of a broad tax base is the fact that already a very small tax rate could yield high revenues.

With a tax rate of only 0.01 % on all types of transactions, 103.9 billion US$ could be raised in Europe. A tax rate of 0.05 % could yield 232.8 billion US$ and a tax rate of 0.1 % could yield even 321.3 billion US$ (figures from Schulmeister et.al. 2008). These amounts would help to consolidate national budgets. This consolidation could be linked to a clear fostering of international commitments for improved poverty reduction, mitigating climate change and support developing countries in their adaptation to climate change. These global challenges are in severe danger of not being properly addressed if national budgets remain as overburdened as they have been left after the world economic crisis. The introduction of an FTT should therefore be linked with a more binding commitment of all member countries to achieve the 0.7 % objective of ODA spending and to provide additional climate adaptation funding.

1 INTRODUCTION

Due to increasing instability of financial markets and the rise of financial crises all around the world (Asia in 1997/98, Russia in 1998/99, Brazil/Latin America in 1999 and the financial and economic crisis since 2007, among others) the discussion of different types of Financial Transaction Taxes (FTT) has become more prominent since the mid 1990s. These comprise for example the revival and enhancements of the Tobin Tax on currency transactions (Spahn, 2002, Leading Group on Innovative Financing, 2010) and the rise of new and wider concepts such as the general FTT (Schulmeister et.al. 2008).[1]

An FTT is a tax placed on one or more types of financial transactions. The proposal followed in this briefing is that of a small (between 0.1 % and 0.01 %) but general FTT, i.e. a tax on all financial transactions (futures, options, bonds, equities, commodities and their derivatives) including Over-the-Counter (OTC) derivatives. It has to be distinguished from a taxation of the financial institutions themselves (bank levy), which would be a fixed rate, which can be refined to reflect the institutions' risk behaviour and its contributions to overall systemic risk (supported for instance by Germany, France, UK and the EC). Moreover, it has to be distinguished from a Financial Activity Tax (FAT), which is a taxation of the profits and wages of financial institutions and has been advocated mainly by the IMF (2010a).[2]

While a bank levy is mainly designed as a levy to pay for the fiscal cost of any future government bail-out of the sector, a FAT constitutes a possibility of raising revenue from the sector's activities more generally. However, a FAT would not tax the trade of securities, but rather the value of the gains and wages of banks. Although this is meant to prevent the financial sector from accumulating excessive profits, it is not the most suitable instrument to curtail specifically short-term speculation and transactions with high leverage effects. In contrast, by taxing the trade of ideally all types of financial transactions, the aim of an FTT is to specifically target excessive short-term transactions, without discouraging adjuvant activities. This briefing is concerned with the rationale for an FTT, considering especially its beneficial effects on market stability (chapter 2) and its revenue potential (chapter 3).

2 STABILIZING THE MARKETS

2.1 Speculation – good or evil?

In order to assess the positive effects an FTT can have on stabilizing the markets, it is important to understand what sort of speculation may have been destabilizing it. The predominant – though crumbling – view in mainstream economics is that speculation is not only necessary but also desirable for its stabilizing effects. Speculation makes markets more efficient as it adds liquidity to the markets and helps to balance existing spreads between the bids and asks of sellers and buyers and adjusts prices closer to their true value. Furthermore, speculators take on risks which can enhance investment and production.

While these positive effects of speculation are not without merit, they have developed in a system where the financial sector serves real economy, asset and commodity prices follow market fundamentals and the predominant form of making profit is the financing of investment. Since the 1970s, increasing deregulation of the financial markets, increased amounts of money being

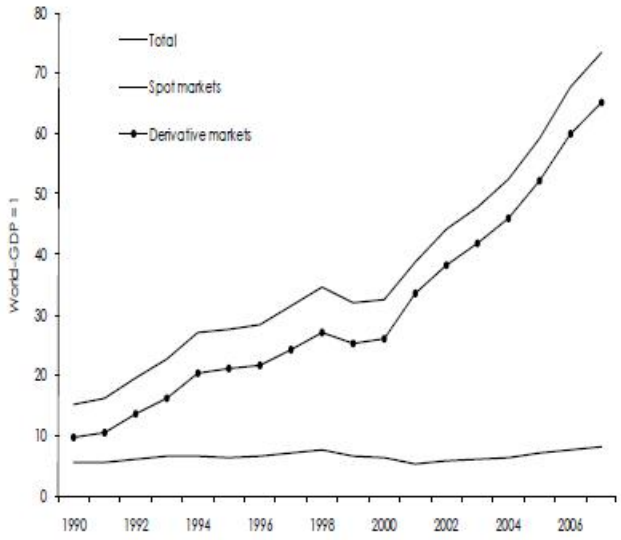
[1] The idea goes back to the British economist John Maynard Keynes, who proposed to curtail excessive speculation by raising small taxes on dealings on Wall Street. It has been supported ever since by numerous economists, among them illustrious names such as Nobel Prize winners Joseph Stiglitz and Paul Krugman, as well as Lawrence Summers, John Williamson and Barry Eichengreen.

[2] A glossary with explanations of these and other specific terms can be found in Annex 1.

administered by managers of big investment and pension funds or insurance companies and an orientation towards the shareholder value has changed the system completely. The original serving function of the financial sector for real economy (investment) has transformed more and more into money making profit through investment in other financial products (Schulmeister, 2009a, Huffschmidt, 2009). Moreover, the concept of orientation towards shareholder value, initially celebrated as a means to re-attach the management of joint stock companies to the shareholders' interests of increasing the company's profitability, has led to what Rappaport (2005) called "short-term performance obsession".[3]

One observation that results from this is the tremendous detachment of financial transactions from real economy. While transactions on the spot markets (bottom line in figure 1) have developed roughly according to nominal world GDP, transactions on the derivative markets have increased much faster. In the big financial centres in Europe and North America, the volume of financial transactions is even 100 times higher than nominal GDP. This volume of derivatives transactions can hardly be accounted purely for hedging and must be attributed by and large to speculative activities (Schulmeister, 2009b).

Figure 1: Overall financial transactions in the world economy

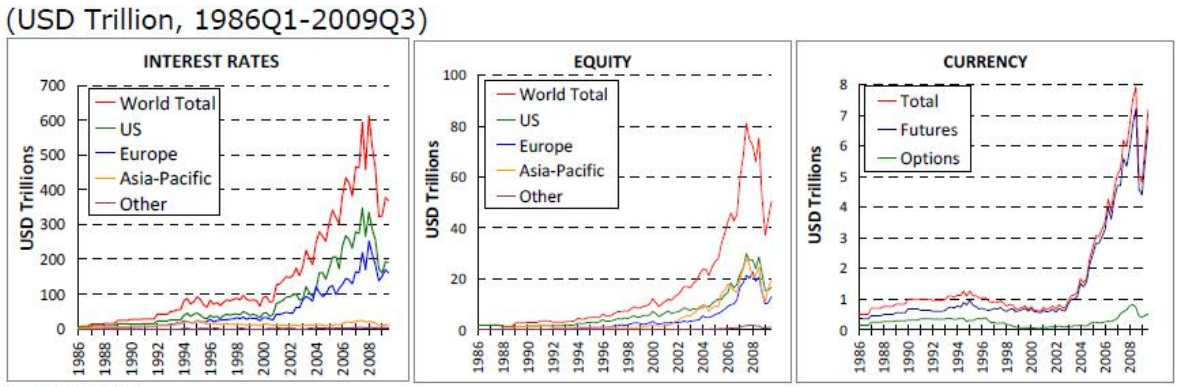


Source: BIS, WFE, OECD, cited from: Schulmeister, 2009b

A closer look on the turnover in derivative markets is presented in figure 2 for derivatives on interest rates, equity and currencies, broken down by geographic region. The figure shows clearly the dramatic increase of trading activities in derivatives after the turn of the century. Although after the financial crisis trading activity declined strongly, the levels were still substantially higher than in 2000 and from 2009 on started to rise again. Finally, the same developments can be observed for Over-the-counter (OTC) transactions (Figure 3).

[3] In order to achieve good quarterly results in financial performance, corporate managers might opt for issuing new shares or repurchasing outstanding shares, which in the short term can help to report good earnings. However, if value-creating operations through real investment are delayed or omitted, in the long run, shareholder value can be destroyed significantly (Rappaport, 2005).

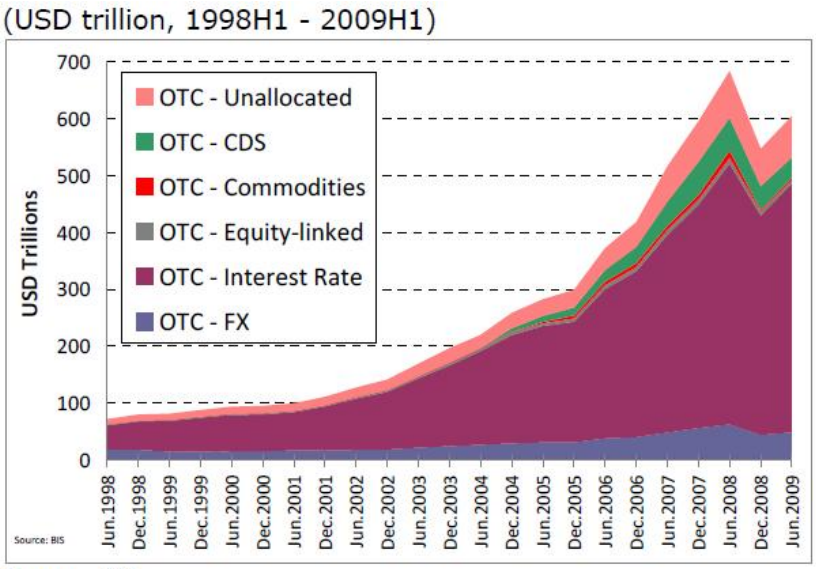
Figure 2: Quarterly turnover in exchange-traded derivatives



Source: BIS.
Note. Quarterly data is available only since 1993 and hence one quarter of annual values are shown at each quarter before

Cited from: European Parliament, 2010b.

Figure 3: Gross open positions of Over-the-counter derivatives



Source: BIS.
Note. Values shown are notional amounts outstanding.

Cited from: European Parliament, 2010b.

The remaining question is whether the speculation helps to adjust the prices to their true value according to their underlying fundamentals, as market liberals tend to argue, or whether it disturbs the adjustment. Keynes, an early proponent of stronger regulation on the financial markets, used aspects of behavioural economics in arguing that "speculators base their expectations of future asset prices not only on what they think the true value is, but, more importantly, on what they think the average opinion about the average opinion is" (Ertork, 2005). Thus, "if a trader observes that the actual price is well above what s/he thinks the true value is and still rising, s/he either begins to lose confidence in his/her own opinion on what is reasonable or thinks that asset price increases have acquired the character of a bubble. […] In this setting […] successful (read rational) speculators are those who engage in 'trend' speculation, where they act like noise traders [i.e. uninformed speculation] themselves in the short run, trying to feed the bubble rather than help deflate it" (Ertork, 2005).

This has also been cited in a recent UNCTAD (2010) discussion paper, which states that Commodity Trade Advisers might follow trends, even if they know, that they do not correspond to market fundamentals. Instead of taking contrary positions in order to adjust prices to the underlying fundamentals "informed investors are likely to sit on the sidelines until sense returns to the market since there is no easier way to lose money than to be right but to be right too early".

Additionally to the behavioural approach, new and highly sophisticated trading techniques have further strengthened the 'trending' of asset prices. Technical analysis of prices and trends, which has gained much influence in recent years, has become more and more computer-assisted and increasingly makes use of intraday data of ever higher frequency. Technical trading tries to take advantage of price trends on a purely statistical analysis without relation to market fundamentals. Thus, in the phase of an optimistic price expectation (bull market) aggregate behaviour of technical trading strengthens and lengthens the price run to result in longer term trends that actually deviate from the price based on its fundamentals (Schulmeister, 2009b). Moreover, individual incentives which reward brokers and fund managers with a fee for each transaction completed induces them to deliberately accomplish more transactions than necessary (Kapoor, 2010).

Overall, Schulmeister et. al. (2008) choose an empirical approach to come to the conclusion that "asset markets are characterized by excessive liquidity and excessive price volatility leading to large and persistent deviations from their fundamental equilibria. This pattern of asset price dynamics implies that the cumulative effects of increasingly short-term transactions are rather destabilizing than stabilizing. The growing importance of technical trading systems in financial markets contributes significantly to the volatility of asset prices over the short run as well as over the long run." Parting from this diagnosis of overliquidity, the question is, whether an FTT can curtail particularly these transactions while leaving others widely unharmed.

2.2 What are the effects of an FTT?

Generally, any transaction tax increases the transaction costs. Assuming an FTT of 0.01 %, a financial transaction of the volume of 10,000 € would cost one 1 €. As buyer and seller pay half of it each, the cost for any of them is just 50 cent. Assuming an FTT of 0.5 %, a financial transaction of the volume of 1,000,000 € would cost 250 € each (see Table 1). Although 250 € sounds a lot initially, it needs to be seen in relation to the expected return or the benefit that can be achieved through hedging purposes. The assumption is that the costs are so low that one-time transactions, for example for hedging purposes will hardly be affected.

Table 1: Amount of taxes for different notional values

Size of transaction	0.1 %		0.05 %		0.01 %	
	Buyer	Seller	Buyer	Seller	Buyer	seller
10,000 €	5 €	5 €	2.50 €	2.50 €	0.50 €	0.50 €
100,000 €	50 €	50 €	25 €	25 €	5 €	5 €
1,000,000 €	500 €	500 €	250 €	250 €	50 €	50 €
1 Bn. €	500,000 €	500,000 €	250,000 €	250,000 €	50,000 €	50,000 €

Nevertheless, opponents of the FTT often argue that an FTT would constrain all financial transactions and therefore disturb the price building process and increase short term volatility.[4] They argue that the high transaction volumes reflect the need for liquidity on the markets and that short-term transactions are part of the hedging activities and necessary for the distribution of risks. In the end, the dispute reflects an ideological battle between market fundamentalists (opponents) and those who assume a more behavioural approach of economics (as outlined above). This is reflected also in different perceptions on whether the financial market is provided with the liquidity needed for proper functioning or rather is characterized by overliquidity. The introduction of an FTT could lead to little more volatility in the short term (intraday data) due to the rise of transaction costs resulting in fewer transactions. While this is true,, it is rather the longer term overshooting of asset prices that have caused high damages in the world economy and that have been of concern to the proponents of an FTT.[5]

It is possible to part from the diagnosis that the financial markets have a problem of overliquidity caused by excessive derivative trading and short term speculation and that a possible increase of short term volatility can be accepted[6]. An FTT can help to achieve this objective in order to level longer swings of asset prices and misalignments from their equilibrium,. Although a general FTT would be imposed on all financial transactions, it is to be expected that it would reduce primarily short term derivative trading and speculation, as the relative increase of transaction costs in derivatives markets is substantially higher than on spot markets.[7] Moreover, the price-elasticities differ for different financial agents and products. Especially short-term transactions on intraday data take advantage of very small spreads between the prices of buying and selling and make their profits through high leverage effects, i.e. by investing only a small share of the underlying asset as margin requirement. As a general FTT is levied as a certain percentage point (between 0.1 % and 0.01 %, or if differentiated even less for specific financial products) of the underlying asset (not the amount actually utilised as the required margin) it would discourage precisely these short-term transactions, which count on a very small spread and use high leverage effects. At a certain point, transaction costs become too high in relation to the expected return.[8]

---

[4] Both, IMF (2010a) and EC (2010a) also highlight this concern. EC (2010a) points out that an FTT could have a negative effect on the allocative efficiency of financial markets.

[5] Schulmeister et.al (2008) distinguish different notions of volatility with opponents often referring to a purely statistical variance of asset prices, usually on daily or intraday data, which is unrelated to their market fundamentals and might indeed rise if transactions are reduced. Proponents, on the other hand, usually refer to longer term price trends and deviations from the fundamental equilibrium, i.e., the phenomenon of medium-term overshooting.

[6] Cast iron proof on the positive relationship between transaction costs and asset price volatility (in the sense that higher transaction costs automatically mean higher volatility) is still lacking, though. Empirical evidence (across time and region) is limited and not conclusive on the subject (Schulmeister et.al., 2008, European Parliament, 2010, IMF, 2010b). The Leading Group on Innovative Financing (2010) states in this regard: "Most studies, however, suggest that very low taxes would either reduce volatility or maintain it, especially when viewed over the medium term."

[7] Transaction costs in derivative markets are roughly 99 % lower than in the spot markets for stocks and bonds. (Schulmeister et.al., 2008)

[8] Schulmeister (2009d) gives the following concrete example of a day trader betting on an upward movement of the DAX stock index: If the price of the underlying index is 25 € for each index point, and the DAX ranges at 6,000 points, the notional value is 150,000 €. To buy a contract the trader needs to provide only 7,500 € as a margin. If the trader sells after a rise of 0.2 %, s/he has a return of 300 € on the 7,500 € invested (= 4 %). Assuming an FTT of 0.05 %, for buying and selling, and a 50/50 split of costs between buyer and seller, the

Generally speaking, the spread is smaller the shorter the time horizon and the higher the leverage effect used for the transaction, which is automatically applied for charging the tax. This is particularly important in view of the increasing volumes of trend-following technical trading on high frequency data, which is usually based on fully automated computer systems. Moreover, it needs to be stated that the provision of cheap money at very low interest rates in the aftermath of the crisis, potentially further increases liquidity on these markets. As a consequence, an FTT could help to reduce current overliquidity on the financial markets and level longer term price runs (Schulmeister, 2009b).

2.3 The case for a general FTT

Another effect of the introduction of an FTT is the inclination of market participants to tax avoidance. Generally, any increase in transaction costs may cause this tax avoidance behaviour. Among these tax avoidance options are: a) using another location for the trade, or b) swapping to other (untaxed) securities. The availability of avoidance options depends on several factors: Option a) depends on the existence of another comparable market within the same (or akin) time zone, which in Europe obviously is the case if only individual countries would introduce an FTT. The change of location is only attractive, if the transaction costs of the change are lower than paying the tax. Therefore, if the transaction tax is introduced in all countries of the particular time zone, i.e. in Europe, this option is substantially diminished, as America and Asia have strongly differing trading times. If a country chooses to head for an FTT on its own, the simultaneous introduction of other measures to minimize benefits from tax avoidance could be an alternative. Schulmeister et al (2008) mention here "special higher exit taxes, intelligent tax design, political pressure on tax havens or bilateral contracts over the treatment of securities".

Currently, a number of countries impose unilaterally a transaction tax on stock exchange (Belgium, Finland, France, Greece, Ireland, Italy, United Kingdom, Cyprus, Malta and Poland) or some sort of capital duties (Austria, Cyprus, Greece, Luxembourg, Poland, Portugal and Spain). Although the coordinated introduction of an FTT, at least within Europe, would be desirable, this shows that also a unilateral introduction is possible. This is also confirmed by the often cited example of the British "stamp duty", which is imposed on stock transactions of companies incorporated in the United Kingdom (UK). Although the tax rate is comparatively high (0.5%[9]), the market still is the most important in Europe and leading in the world. The revenues from the "stamp duty" account for 0.7 % of total tax receipts in UK. One reason for the success is that the tax for trading in UK companies is levied worldwide, no matter where the transaction takes place and whether the trader is British or not. This makes tax avoidance by choosing other locations impossible. The negative example which is often cited is the Swedish Securities Transaction Tax, which is a tax levied on any transaction (no matter whether from domestic or foreign customers) that was carried out by a Swedish broker. This made tax avoidance relatively easy by simply choosing foreign brokers for the transfer (Schulmeister et.al. 2008, IMF, 2010b). These experiences and the respective lessons learnt need to be examined and made use of when choosing unilateral or regional introduction.

Option b), swapping to other (untaxed) securities, depends on the range of the applied transaction taxes. If it is only applied to a specific type of transaction (i.e. currencies, security papers, etc.) the investor may choose to swap to untaxed transactions if they promise higher returns. To close this

trader would have to pay 2 x 0.025 x 150,000 € = 75 €, which accounts for 25 % of the speculation profit and reduces the rate of return to still 3 %.

[9] Additionally, there exists "a special "exit charge" of 1.5%. The latter applies when shares are transferred to clearance services and/or converted to financial products that effectively avoid stamp duty" Schulmeister et.al. (2008).

opportunity as far as possible, taxing financial transactions should cover all markets and types of transactions, equity, debt, foreign exchange and their derivatives on exchange and over the counter (TUAC, 2010, IMF, 2010b). A broad tax base generally has two advantages: it reduces the risk that traders and investors switch to other financial instruments, and the tax rate can be fixed at a relatively low level and still generate high revenues (Schulmeister, 2009d, IMF, 2010b). Moreover, a general FTT would not discriminate against any specific type of transactions and thus avoid distortions of the internal market. Although, a general FTT should be the ultimate objective, it could also be introduced in several steps. "The first stage could be the implementation of a tax levied only on spot and derivatives transactions on organized exchanges in some major EU economies. […] Based on the experience with an FTT levied only on transactions on organized exchanges one could include in the second stage all OTC transactions within the Euro-area which involve no other currencies, i.e., primarily Euro interest rate derivatives. The third stage would then include also spot and derivatives transactions in the foreign exchange market" (Schulmeister et.al. 2008).

Nevertheless, the question needs to be raised, whether transaction taxes would increase the cost and therefore discourage funding for the real economy through the stock market. The best way to deal with the problem would certainly be to tax various transactions differently according to the degree of negative externalities attached with the transactions and for different market participants (regulated banks, hedge funds or public institutions) (TUAC, 2010, Horn & van Treeck, 2010). As this would be more difficult and costly to implement, for the time being the case is rather for a general FTT to be introduced for all markets and the full range of financial transactions and preferably but not necessarily worldwide. The authors of the recent external study for the European Parliament (2010) offer an additional convincing argument for a small but general tax on financial transactions: They argue that the potential social welfare losses that may be sustained by taxing transactions that do not have negative externalities (i.e. 'desirable' transactions), are much smaller than the social welfare benefits that occur through taxing transactions with negative externalities. Therefore, they opt for a very small tax which would only drive out very marginally those 'desirable' transactions but prevent significantly 'bad' transactions. Although they do not give a precise figure for the rate, they note that to "the extent that there are reasons to believe that short-term speculative transactions are more likely to imply a negative externality, the optimal small […] tax will be just a little higher". As pointed out above, in our view it is primarily short-term speculative transactions, and especially the increasing incidence of technical trading that have caused the negative effects.

2.4 Other benefits

Current trading practices and especially computer-based technical trading systems in the future markets have also contributed to the dramatic rise in commodity prices in 2007/08.[10] Derivatives in food expanded massively, especially after real estate prices started to fall in 2007. Between 2006 and 2009 speculators held 65 % of maize contracts, 68 % of soybeans and 80 % of wheat contracts (UNCTAD 2009). According to the IMF Commodity Price Index, food prices have risen by 45 % since 2007. Poor countries that need to import large portions of their food and fuel demand were faced with a dramatic increase of their import bill and some even had to take on new IMF credit. Poor households were particularly hit, as they spend between 50 and 90 % of their income on food. In 2009, when the world

[10] An empirical analysis of market fundamentals and price development of four commodities (crude oil, corn, wheat and rice) between 1989 and mid 2008 has shown that the price boom, particularly of crude oil but also for the other commodities "can hardly be accounted for by market fundamentals" (Schulmeister, 2009b).

economic crisis reached its peak, the number of people living in poverty increased dramatically, a severe setback for the achievement of the MDG.[11]

Trend-following trading techniques, which more and more often result in excessive bull markets (upward trends) and bear markets (downward trends) constitute a further threat to the achievement of the MDG. From a development perspective, curtailing speculation on food therefore constitutes a must. Along with specially targeted instruments, which should be thought in parallel, an FTT could be one measure to reduce these socially undesirable transactions and can help to prevent future food crises.

Supporters of an FTT also argue that measures to slow down financial transactions would help to re-focus the activities of banks, insurances and investment funds to foster trade, production and investment in real economy (Schulmeister, 2009d, Horn & van Treeck, 2010). This is due to the fact that increasing deregulation on the financial markets in combination with special incentives (such as rewarding short-term, usually quarterly performances) has lead to an increased focus on short-term earnings, high-leverage and high risk corporate portfolio strategies. The permanent pressure on short-term yields actually even seems to prevent investment in real economy (Rappaport 2005, Hein & van Treeck 2008, Aspen Institute, 2009, Horn & van Treeck, 2010). Measures to cut incentives for 'short-termism' and align interests of financial intermediaries (fund managers) and long-term investors should therefore be introduced. However, by cutting down especially short term speculative transactions, the introduction of an FTT can help to encourage more patient capital.

Moreover, it has already been stated by Keynes (1936) that excessive volatility and the frequent overshooting of relevant prices, such as stock and commodity prices or interest and exchange rates, derogates growth and employment. Real economy is affected, as the subsequent bull and bear markets produce insecurity and an incalculable investment environment and are accompanied by exorbitantly high appreciation and subsequent deterioration of assets. It was precisely this devaluation of wealth that translated the financial crisis into a global crisis of the real economy (Schulmeister, 2010). And also the IMF (2010b) states that "long-term mispricing is of greater concern from a social point of view, since market bubbles and crashes have serious macroeconomic externalities."

Last but not least, it has also been stated that the introduction of an FTT could compensate for the undue positive discrimination the financial sector has experienced through the general exemption from Value Added Taxes (VAT) in Europe and elsewhere. The IMF (2010a) states that there is a risk of the financial sector becoming unduly large due to this practice.

3 RAISING FUNDS

3.1 How much money can be raised?

Obviously, the potential of an FTT to raise revenues depends on the range of the financial products included as the tax base, the respective trade volume, as well as on the tax rate. The tax rate currently favoured among government representatives that are approving an FTT (Germany, France, Spain, Austria, Belgium) lies at 0.01 %. International NGO coalitions and national networks usually favour a tax rate of at least 0.05 % or up to 0.1 % (ATTAC, Make Finance Work). Occasionally it has been raised that an FTT should be as high as the British stamp duty, i.e. 0.5 %. Even at the lowest rate proposed, expected revenues would still be very substantial, as Table 3 shows.

[11] During the food and fuel crisis the incidence of hunger in the world has increased severely: While in 2007 857 Mio. people suffered from hunger, this number increased to 1,023 Mio. people in 2009. Although since then the number has decreased again to 925 Mio. people, reaching MDG 1 seems very unlikely.

Both the introduction of the FTT itself and the level of the tax rate would influence the trade volume. As it is the explicit objective of the FTT to reduce especially short term trading expected revenues cannot be calculated on current trade volumes. However, it is difficult to predict as to what extent an FTT would reduce these volumes. The reduction of trade volumes would also be different on the various financial markets (spot market, derivative market, Over-the-counter) and for the different instruments that are applied there. As it is difficult to predict to what extent an increase of transaction costs through an FTT would affect trade volumes Schulmeister et. al. (2008) assume three different ranges (low – medium – high) within which the reduction will most probably lie for each financial transaction type (foreign exchange, interest futures, commodity contracts, etc.). They calculate for the three ranges three different tax rates (0.01 %, 0.05 % and 0.1 %) each. Generally speaking, trade volumes will be reduced the more the lower are the current transactions costs and margin requirements and the higher is the tax rate. While stock transactions on the spot market would only decline between 0 and 5 % if a transaction tax of 0.01 % is introduced, interest futures on the derivative market would most probably be reduced by 20 to 40 %. If a transaction tax of 0.05 % was introduced, the different types of exchange-traded derivatives would decline between 50 and 85 %, while transactions on the spot market would only be reduced by 0 to 8 % (see Table 2).

Table 2: Assumptions about transaction costs, margin rate (leverage effect) and the reduction of trading volume in response to the introduction of an FTT

	Transaction costs in %	Margin rate in %	Reduction of trading volume in % due to a transaction tax of								
			0.10%			0.05%			0.01%		
			low	medium	high	low	medium	high	low	medium	high
Spot transactions on exchanges											
Stocks	0.3	-	5	10	15	3	5	8	0	0	5
Bonds	0.2	-	3	5	10	0	3	6	0	0	3
Exchange traded deivatives											
Stock index	0.005	8.0	60	70	80	50	60	70	10	20	30
Interest rates	0.003	1.0	70	80	90	60	70	85	20	30	40
Foreign exchanges	0.004	3.0	65	75	85	50	65	75	15	25	35
Commodities	0.005	6.0	60	70	80	50	60	70	10	20	30
OTC	0.003	1.0	70	80	90	60	70	85	20	30	40

Source: Schulmeister et. al., 2008

In doing so, Schulmeister et. al. (2008) present a very comprehensive and relatively recent calculation of the revenue potential, which has frequently been cited. Calculations are done on the daily turnover (including OTC-traded currency swaps and options) of the year 2006, which certainly was a boom year and amounts to 3,637 billion US$.[12] Table 3 shows the hypothetical receipts of transaction taxes for various tax rates discussed in individual European countries, in Europe and worldwide. Results are shown as a percentage of nominal GDP as well as their absolute amounts. For reasons of simplicity, only the medium scenario of expected trade volume reduction is indicated in this table.[13] Please note, that all

[12] EC (2010a) point out that in 2006 there was a high number of transactions as well as high asset prices and that therefore values might be lower in the post-crisis years.

[13] Annex 2 shows more detailed tables with the full range of reduction scenarios as well as differentiated between the various financial markets and other locations.

calculations are based on the assumption that the general FTT would be levied on the notional value of the respective transaction (not the required margin invested).[14]

Table 3: Hypothetical transaction tax receipts in different countries and regions

	France		Germany		United Kingdom		Europe		World	
	In % of GDP	In bill. US$	In % of GDP	In bill. US$	In % of GDP	In bill. US$	In % of GDP	In bill. US$	In % of GDP	**In bill. US$**
0.10 %	0,843	18,8	1,488	43,3	8,612	204,4	2,109	321,3	1,523	**734,8**
0.05 %	0,612	13,7	1,070	31,2	6,352	150,8	1,528	232,8	1,097	**529,1**
0.01 %	**0,273**	**6,1**	**0,473**	**13,8**	**2,901**	**68,9**	**0,682**	**103,9**	**0,485**	**234,0**

Source: Schulmeister et.al. (2008)

The hypothetical revenues of a tax rate of 0.01 % in Europe would account for roughly 0.7 % of GDP. Schulmeister et.al. (2008) point out that this revenue corresponds more or less to what a VAT on financial services would raise (according to Huizinga, 2002[15]) and could therefore offset the favourable exemption of financial services from VAT, generally practiced in VAT systems.

The IMF (2010a) and the European Commission (2010a) question these figures, opting for a Bank Levy or FAT, the revenues of which they calculate higher than those of an FTT. Assuming a tax rate of 0.15 %, the EC calculates that a Bank Levy would raise 50 billion € for the EU-27, while an FTT realistically would yield only 20 billion €. This is due to the fact that IMF and EC do not count trading with derivatives on exchanges and OTC- transactions, which account for 90 % of the trade with derivates (Schulmeister, 2010). Leaving OTC transaction out does not only mean waiving a huge amount of revenues, but also increasing the incentive to trade less on exchange and more over the counter. Taxing OTC transactions constitutes a challenge and might be more costly, but it is not unfeasible. Electronic communication and central settlement also for OTC-derivatives has grown in recent years (CLS Bank, Fedwire, TARGET, CHIPS, SWIFT) in order to reduce risk and cost and thus would make it feasible to tax these transactions (Leading Group on Innovative Financing, 2010, IMF, 2010b).[16]

Moreover, IMF (2010a) and EC (2010a) question whether the entire notional value of such transactions would constitute the tax base. For FTT proponents, using the notional value as a tax base is an essential requisite to reduce particularly those transactions with a high leverage effect.

3.2 How can the funds be used?

It was precisely the high revenue potential that has attracted development activists, especially after the 1997 Asian crisis. Revenues could be allocated to chronically underfinanced international development financing. In 2010, the EU and member countries on average are estimated to spend between 0.45 and 0.46 % of GDP for development financing (EC, 2010b). This still falls short of the ODA commitments

[14] The notional value is the value of a derivative's underlying assets, while the cash requirement (margin) to perform certain transactions, such as buying futures and options or swaps, is a varying but generally small part of the notional value.

[15] Huizinga (2002) estimated then that in the EU VAT to financial services could yield revenues of 12 bn. €. Revenues today would certainly be higher.

[16] The IMF (2010b) also points out, however, that trading mechanisms are changing easily and innovations in financial products and trading platforms are frequent. Therefore, an FTT "should take this type of innovation into account, and not apply a tax on the basis of existing trading or clearance structures, since these may soon give way to new forms."

accorded in the EU action plan, which allots 0.56 % of GDP for development financing in 2010, and it is not sufficient to tackle development needs.

Moreover, in more recent climate change negotiations the issue of climate financing for adaptation and mitigation has also gained momentum, and it has become clear that current financing commitments fall short of financing requirements. As stated in the Copenhagen Accord, industrialized countries should provide 30 billion US$ annually in addition to current development financing as fast-start financing between 2010 and 2012. Until 2020 100 billion US$ are envisaged as additional funds annually, partly by innovative financing instruments. Developing countries will need huge amounts of money both for adaptation and mitigation. Therefore, many actors within the development community strongly argue that revenues from an FTT could potentially be used partly or primarily for the financing of international challenges, such as poverty reduction and climate change adaptation and mitigation (ATTAC, Make Finance Work, Schulmeister, Leading Group on Innovative Financing for Development, among others).

Mastering these challenges is of fundamental global interest, but they arise at a time when national budgets are under severe stress and deficits have widened dramatically after the financial crisis. Medium-term debt projections are alarming, with debt to GDP ratio (in EU-27) being forecasted to increase from 58.7 % in 2007 to 79.4 % in 2010. Even with fiscal consolidation of 0.5 % of GDP annually, the ratio would increase further to almost 100 % by 2020 (EC, 2009).[17] All these projections do not take the possibility of any new financial crisis until then into account. Under these circumstances, it may be very difficult to meet both commitments to development and climate financing. Therefore, it is no wonder that the introduction of an FTT – long time treated as a "no-go" – only paved its way on the political agenda – if at all – after the financial and economic crisis, and even more so after the Euro-crisis. If comprehensive and properly designed, an FTT can raise far more revenues than any of the other instruments under discussion, namely the FAT or the bank levy. These are primarily designed to ensure the financial sector's contribution for past and future public crisis intervention.

Any tax revenue resulting from instruments under discussion to address the financial sector will contribute to fiscal consolidation of national budgets. This is due to the principle of universality, according to which total budget revenue covers total budget expenditure and specific appropriation of tax revenues is not possible. However, sound consolidation would indeed give room for a stronger commitment towards the fulfilment of ODA and climate financing requirements. Moreover, it is well-established practice in many member states to levy new taxes in a package with other political decisions for funding. Thus, it would be conceivable to link the introduction of an FTT with a faster action plan to reach the 0.7 % of GNP for ODA spending objective and stronger political commitments from the member countries to fulfil development and climate financing commitments. However, experience so far with these commitments has been lagging behind expectations and a more binding link would be desirable.

Moreover, there is another issue of concern when talking about the use of the potential revenues, which has been called the "asymmetry of revenue collection" (Leading Group, 2010): As financial transactions are highly concentrated in only a few markets (in Europe, almost all transactions are executed in London or Frankfurt), the revenues of an FTT would also be concentrated in these countries. Thus, the above mentioned linkage between FTT revenues and the faster achievement of the 0.7 % objective and increased climate financing would require a multinational settlement on a fair share of the revenues for other member states, as actors from all countries in Europe pay the tax. It has been proposed to link this

[17] For the OECD, the size of fiscal consolidation is projected to reach 300 – 370 billion US$ per year over the coming years (see TUAC, 2010).

share to the GDP of respective countries (IMF, 2010b). Another and maybe more effective possibility would be to compensate the UK and Germany for the provision of their efficient market places with a fixed share of tax revenues and use the remainder directly for supranational projects at the EU level or at the global level (Schulmeister, 2009d).

4 CONCLUSIONS: WHY WE NEED AN FTT

An FTT will certainly not be sufficient to prevent all future financial crises. Arguably, to reduce short-term performance obsession, increase financial stability of financial institutions and improve supervision and control of the financial sector a series of other measures will also be necessary. Some of these measures have already been introduced at EU and Member State level. The introduction of an FTT, however, would be highly beneficial in a number of ways: i) it can help to reduce particularly short-term speculative transactions; ii) it can raise large amounts of revenues needed for fiscal consolidation and mastering global challenges; and iii) it would raise these revenues from a sector that has been the main beneficiary of the globalization of the economy and at the same time has been at the origin of the worst economic crisis the world has seen in decades.

4.1 Make capital more patient

In recent decades, financial transactions have seen a tremendous detachment from real economy, especially on the derivative markets. In Europe and North America, the volume of financial transactions is 100 times higher than nominal GDP. This huge volume shows to a large extent the increase of speculative activities, which can not be attributed only to hedging activities. Financial markets are rather characterized by overliquidity than a lack of liquidity. Due to increased 'trend' speculation and particularly due to new trading techniques using data of ever higher frequency, these speculative activities have contributed in various occasions to the detachment of asset prices from their market fundamentals. Both, upward trends (bull markets) and downward trends (bear markets) are strengthened by these factors. It is rather the longer term overshooting of asset prices that have caused high damages in the world economy and that have been of concern of the proponents of an FTT.

It is to be expected that the introduction of a general FTT would reduce primarily short term derivative trading and speculation, as the increase of transaction costs in derivatives markets is substantially higher than on spot markets. As a general FTT is levied on the notional value of the contract size it would discourage precisely those short-term transactions, which count on a very small spread and use high leverage effects. This would reduce current overliquidity on the financial markets and help to level longer term price swings.

To prevent tax avoidance as far as possible, an FTT should be introduced on the largest scale possible, both with regard to location, and with regard to the instruments. Although a global introduction would be desirable, it is also possible to introduce it in the EU, as America and Asia have different trading times. Even unilateral introduction is possible, as several country cases show. However, a comprehensive FTT should cover all markets and types of transactions, spot and derivatives, on exchange and OTC. This could be done in several steps. If comprehensive, the tax rate can be very low, and still raise significant revenues.

4.2 Make finance work

Apart from its potential for stabilizing the markets, an FTT should also be considered for its revenue potential. Global challenges, especially poverty reduction and reaching the MDG, as well as climate financing for adaptation and mitigation will require large amounts of funds. The funding gap for these challenges is estimated to be in the range of 324-336 billion US$ annually between 2012 and 2017, 156

billion US$ for climate change and 168-180 billion US$ for ODA (Leading Group on Innovative Financing, 2010). National budgets are already overburdened especially after the financial crisis and the sovereign debt crisis in Europe and past and current deficit spending will very soon be translated into strong saving measures everywhere. Additional funds are needed to manage these crises as well as global challenges.

Of all proposals currently discussed in the international agenda, an FTT would raise the highest amount, i.e. if OTC-transactions are included. Even at the lowest rate currently discussed (0.01 %) and taking into account that the levy would reduce trade volumes, an FTT could still raise about 104 billion US$ in Europe. A higher rate of 0.05 % could yield about 233 billion US$. Next to using these revenues for fiscal consolidation in Europe, these additional funds could be used to master global challenges, namely poverty reduction and climate change. Due to the principle of universality and the "asymmetry of revenue collection" accompanying measures would need to be accorded among member states. Among these are a faster action plan to achieve the 0.7 % objective and stronger political will to fulfil development and climate financing commitments, or a multinational settlement about a fair share of the revenues. In order to make funding commitments more binding, one possibility would also be to compensate the UK and Germany for the provision of their efficient market places with a fixed share of tax revenues and use the remainder directly for supranational projects at the EU level or at the global level.

4.3 Make financial institutions accountable

Finally, it has frequently been stressed that financial institutions should be held accountable for paying the costs of public crisis intervention. Other proposals, such as the bank levy or the FAT are also particularly designed to receive contributions of the financial sectors for this purpose. However, apart from being less suitable to specifically target and curtail the most harmful short-term transactions, they also generate fewer revenues. However, the financial sector's accountability could arguably go beyond a mere contribution of past and future crisis bail-outs. The Leading Group on Innovative Financing (2010) has identified the global international financial system to be a suitable source of additional revenues for financing global public goods for two reasons: Firstly, the sector has grown enormously in recent decades, far more than world production and trade. As the sector is the main beneficiary of the growth of global economy under globalization processes, it could be made responsible to also fund global public goods as an essential basis for the functioning of globalization. Secondly, taxation in this sector has been traditionally very low, while at the same time wealth has accumulated here disproportionately. Although the Leading Group finally opts for a centrally collected currency transaction tax, in our opinion, the FTT would be the best instrument to achieve this objective: the stabilizing effects would foster general conditions for a more balanced and sustainable globalization and the revenues obtained correspond roughly to the amount which the financial sector saves through tax exemption.

BIBLIOGRAPHY

Aspen Institute 2009, "Overcoming short-termism", The Aspen Institute, Business & Society Program

Ertork, Korkut 2005, "Macroeconomics of Speculation", University of Utah, Department of Economics, Working Paper No: 2005-02.

European Commission 2009, "Sustainability Report 2009", Directorate-General for Economic and Financial Affairs, Brussels.

European Commission 2010a, "Innovative Financing at a Global Level", Commission Staff Working Document SEC (2010) 409 final.

European Commission 2010b, "Financing for Development - Annual progress report 2010", Commission Staff Working Document SEC(2010) 420 final, April.

European Parliament 2010a, "The effects of the global financial and economic crisis on developing countries and on development cooperation", EP Resolution PROV(2010)0089, Brussels, 25 March 2010.

European Parliament 2010b, "Financial Transaction Tax: Small is Beautiful", Policy Department, PE 429.989.

Hein, Eckkehard; Till van Treeck 2008, „Finanzmarktorientierung – ein Investitions- und Wachstumshemmnis?", IMK Report No. 26, January 2008.

Horn, Gustav; Till van Treeck 2010, „Stellungnahme zur Finanztransaktionssteuer", Bundesdrucksache 17/527, 17/518, 17/1422 und 17/471.

Huizinga, Harry 2002, "A European VAT on financial services?"; Economic Policy, October 2002, pp. 499-534.

Huffschmidt, Jörg 2009, "Die Krise der Finanzmärkte und die Antworten der Regierungen"; in: Freiwillig in die Krise – reguliert wieder heraus – Dokumentation.

IMF 2010a, "A fair and substantial contribution by the financial sector – Interim report for the G-20", Washington; April, 2010.

IMF 2010b, "Taxing Financial Transactions: Issues and Evidence", IMF Working paper by Thornton Matheson; Washington August 2010.

Kapoor, Sony 2010, "Financial Transaction Taxes; Tools for Progessive Taxation and Improving Market Behaviou", Re-define, February 2010.

Keynes, John Maynard 1936, "*The General Theory of Employment, Interest and Money*", 1964 reprint, New York: Harcourt Brace.

Leading Group on Innovative Financing 2010, "Globalizing Solidarity: The Case for Financial Levies", Report 2010.

Rappaport, Alfred 2005, "The Economics of Short-Term Performance Obsession", in: *Financial Analysts Journal*, Volume 61, No. 3; CFA Institute, p. 65 – 79.

Schulmeister, Stephan; Schratzenstaller, Margit; Picek, Oliver 2008, "*A General Financial Transaction Tax. Motives, Revenues, Feasibility and Effects*".

Schulmeister, Stephan 2009a, "Grundzüge einer sinnvollen Finanzmarktordnung – und warum sie nicht (bald) kommen wird", in: Österreichisches Jahrbuch für Politik 2009.

Schulmeister, Stephan 2009b, "Trading Practices and Price Dynamics in Commodity markets and the Stabilising Effects of a Transaction Tax", Austrian Institute of Economic Research WIFO, January 2009.

Schulmeister, Stephan 2009c, "A General Financial Transaction Tax: A Sohrt Cut of the Pros, the Cons and a Proposal", Austrian Institute of Economic Research WIFO Working Paper, 344/2009.

Schulmeister, Stephan 2009d, „Die Finanztransaktionssteuer – Konzept, Begründung, Effekte", in Weltwirtschaft & Entwicklung Hintergrund December 2009.

Schulmeister, Stephan 2010, "Bank levy versus transactions tax: A critical analysis of the IMF and EC reports on financial sector taxation".

Spahn, Paul 2002, "On the feasability of a tax on foreign exchange transactions", Report to the Federal Ministry of Economic Cooperation and Development.

TUAC (2010) Trade Union Advisory Committee to the OECD, The Paramenters of a Financial Transaction Tax and the OECD Global Public Good Resource Gap, 2010 – 2020; TUAC Secretariat, Paris, February 2010.

UNCTAD 2010, "Speculative Influences on Commodity Futures Prices 2006 – 2008", UNCTAD Discussion Paper No. 197, March 2010, Geneva.

ANNEXES

ANNEX 1: GLOSSARY

Bank Levy

The Bank levy can be seen as an insurance scheme as it would be a levy to pay for the fiscal cost of any future government support to the sector. This component could either accumulate in a fund to facilitate the resolution of weak institutions or be paid into general revenue. The Bank Levy would be paid by all financial institutions, with the levy rate initially flat, but refined over time to reflect institutions' riskiness and contributions to systemic risk—such as those related to size, interconnectedness and substitutability—and variations in overall risk over time.

Bonds

The bond is similar to a loan, as the authorized issuer owes the holders a debt to be repayable usually with interests (with fix or floating rates) at fixed intervals over a period of time (maturity). Thus the issuer is the debtor, and the holder is the creditor. For the issuer bonds are one way to obtain external funds to finance long-term investments. Banks and investors buy and trade bonds.

Derivates

A derivative is a financial instrument, the value of which is based on the asset prices or expected future price movements of commodities, shares, or bonds, or of market related parameters such as indices or interest rates. The asset to which a derivative is linked is called the underlying asset. Contract parties agree to buy, sell or exchange in the future certain items or benefits at specified conditions. Therefore, derivatives can be used as insurance to limit the risk of a particular investment. Next to hedging purposes, derivatives are also used for speculation on the value of the underlying asset. A contract party can bet that the party seeking insurance has wrong expectations on the future asset price development. Generally, the capital invested in derivatives is lower than trading the underlying asset. Therefore, derivatives can yield high returns from small asset price movements which they are based on (leverage). Most derivative contracts are traded directly between two parties outside the exchanges (OTC).

Financial Activity Tax (FAT)

In response to the G-20 mandate to determine "a fair and substantial contribution by the financial sector" after the financial crisis the IMF has proposed a FAT rather than an FTT. A FAT is a tax to be applied to the value of the banks' gross profits and wages. It is rather meant to incorporate banks to the costs of past and future financial crisis and be something like a global banking insurance scheme. Although the design and tax rate could provide incentives to reduce risks, such an insurance scheme does not automatically reduce risks.

Leverage

Leverage denominates any technique to multiply gains or losses. This can be done for example by borrowing money or by using derivatives. With derivatives the holder only needs to deposit collateral which is much lower than the underlying asset (see also derivatives).

Over the Counter (OTC)

The term OTC denominates off-exchange trading, where assets and financial instruments such as securities, bonds, commodities or derivatives are traded directly between two parties. It is contrasted

with exchange trading, which occurs via facilities constructed for the purpose of trading (i.e., futures exchanges or stock exchanges). Futures, swaps and derivatives are frequently traded "over the counter".

Underlying (Asset)

The underlying (asset) is the asset a derivative is based on. The underlying can also be a basket of assets, an index, a specified interest rate, foreign exchange rate, another derivative or other variables (including the occurrence or non-occurrence of a specified event such as a scheduled payment under a contract). The cash requirement (margin) to perform certain transactions, such as buying futures and options or swaps, is a varying but generally small part of the underlying.

Tobin Tax

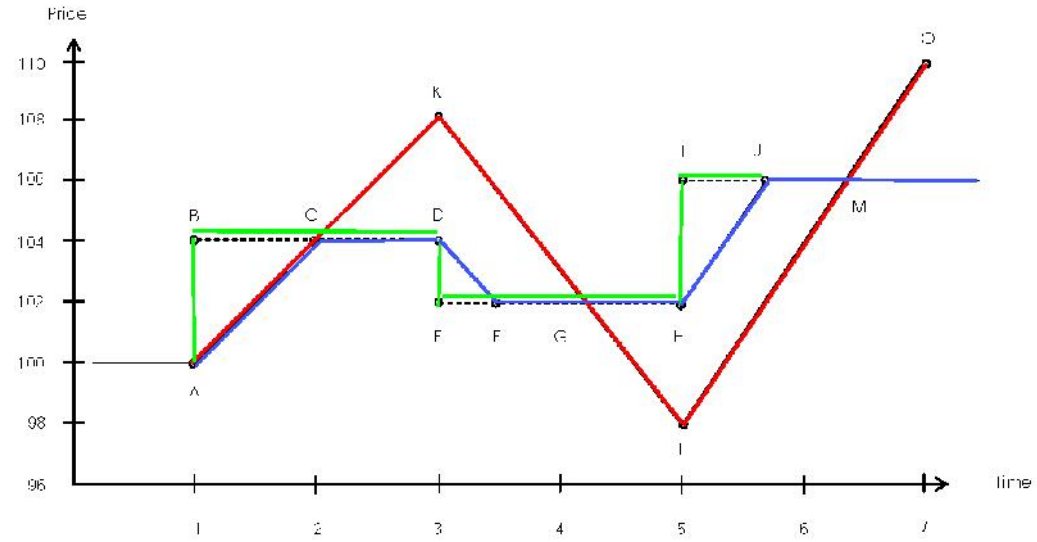
The Tobin Tax is named after Nobel Price winner James Tobin who has proposed a securities transactions tax imposed specifically on foreign exchange transactions and possibly also their derivatives: currency futures, options and swaps.

ANNEX 2: VOLATILITY OF ASSET PRICES

According to Schulmeister (2008) there are three different types of understanding the volatility of asset prices. He explains them in three hypothetical "worlds".

1. "World 0": This is a non-existent, ideal world, with perfect knowledge and foresight of the market development and there are no transaction costs. In such a world (green line) any news makes the asset price jump instantaneously from the old equilibrium to a new equilibrium (A – B). The price would stay there (B – D) until news come up, which again automatically brings the price to its new equilibrium (D – E) and so on.
2. "World 1": This is the world, FTT opponents assume, where all actors are fully rational and have equal information, but do not know the expectations of other participants. In this world, high liquidity and therefore low transaction costs are needed, as prices adjust to their new equilibrium gradually through a series of transactions (blue line). First the price jumps from A to C. At C (new equilibrium) the price movement stops (C – D) due to only rational traders in this "world". It will stay until t = 3 and then adjust again gradually to the new equilibrium (D – F). In this "world" an FTT would cause prices to become more volatile due to higher transaction costs and it would lengthen the transition period between two equilibriums.
3. "World 2": This is the world, FTT proponents assume, where there is an imperfect knowledge about market developments as a general condition of social interaction. In this world (red line) the price movement overshoots the new fundamental equilibrium due to speculations. When a price moves up it is expected to continue in this trend. Actors behave similar because they like to follow the crowd (herding). The price adjustment will be lengthen by this action beyond the new equilibrium and, hence, cause a price – overshoot (A – K).

Figure 1: Three stylized paths of asset prices



Source: Schulmeister et.al, 2008; coloured accentuation done by the author

ANNEX 3: HYPOTHETICAL TRANSACTION TAX RECEIPTS IN DIFFERENT COUNTRIES / REGIONS

Table A3.1 Hypothetical receipts in selected European countries

		Austria			France			Italy			Belgium			Netherlands		
Tax rate / Reduction in transaction volume		0.1	0.05	0.01	0.1	0.05	0.01	0.1	0.05	0.01	0.1	0.05	0.01	0.1	0.05	0.01
Spot transactions on exchanges																
Stocks	Low	0.1	0.0	0.0	2.1	1.1	0.2	1.5	0.8	0.2	0.1	0.0	0.0	1.3	0.7	0.1
	Medium	0.1	0.0	0.0	2.0	1.1	0.2	1.4	0.8	0.2	0.1	0.0	0.0	1.3	0.7	0.1
	High	0.1	0.0	0.0	1.9	1.0	0.2	1.4	0.7	0.2	0.1	0.0	0.0	1.2	0.7	0.1
Bonds	Low	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.3	0.2	0.0
	Medium	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.3	0.2	0.0
	High	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.3	0.2	0.0
Total	Low	0.1	0.0	0.0	2.2	1.1	0.2	1.7	0.8	0.2	0.1	0.0	0.0	1.7	0.9	0.2
	Medium	0.1	0.0	0.0	2.1	1.1	0.2	1.6	0.8	0.2	0.1	0.0	0.0	1.6	0.8	0.2
	High	0.1	0.0	0.0	1.9	1.1	0.2	1.5	0.8	0.2	0.1	0.0	0.0	1.5	0.8	0.2
Derivatives transactions on exchanges																
Total	Low	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	Medium	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	High	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
OTC transactions																
Total	Low	2.9	1.9	0.8	25.1	16.8	6.7	6.6	4.4	1.8	6.0	4.0	1.6	7.2	4.8	1.9
	Medium	1.9	1.4	0.7	16.8	12.6	5.9	4.4	3.3	1.5	4.0	3.0	1.4	4.8	3.6	1.7
	High	1.0	0.7	0.6	8.4	6.3	5.0	2.2	1.7	1.3	2.0	1.5	1.2	2.4	1.8	1.4
All transactions																
	Low	3.0	2.0	0.8	27.3	17.9	6.9	8.9	5.6	2.1	6.1	4.0	1.6	8.9	5.7	2.1
	Medium	2.0	1.5	0.7	18.8	13.7	6.1	6.4	4.4	1.8	4.1	3.0	1.4	6.4	4.5	1.9
	High	1.0	0.8	0.6	10.3	7.3	5.2	4.0	2.7	1.6	2.1	1.5	1.2	3.9	2.6	1.6

Source: Schulmeister et.al., 2008

Table A3.2 Hypothetical receipts in Germany and UK

		Germany			United Kingdom		
	Tax rate / Reduction in transaction volume	0.1	0.05	0.01	0.1	0.05	0.01
Spot transactions on exchanges							
Stocks	Low	2.6	1.3	0.3	7.2	3.7	0.8
	Medium	2.5	1.3	0.3	6.8	3.6	0.8
	High	2.3	1.3	0.3	6.4	3.5	0.7
Bonds	Low	0.3	0.1	0.0	3.2	1.7	0.3
	Medium	0.3	0.1	0.0	3.1	1.6	0.3
	High	0.3	0.1	0.0	3.0	1.6	0.3
Total	Low	2.9	1.5	0.3	10.4	5.3	1.1
	Medium	2.7	1.4	0.3	10.0	5.2	1.1
	High	2.6	1.4	0.3	9.4	5.0	1.0
Derivatives transactions on exchanges							
Stock index	Low	11.7	7.3	2.6	4.5	2.8	1.0
	Medium	8.8	5.9	2.3	3.3	2.2	0.9
	High	5.9	4.4	2.1	2.2	1.7	0.8
Interest rates	Low	31.4	20.9	8.4	135.2	90.1	36.0
	Medium	20.9	15.7	7.3	90.1	67.6	31.5
	High	10.5	7.9	6.3	45.1	33.8	27.0
Commodities	Low	0.0	0.0	0.0	0.0	0.0	0.0
	Medium	0.0	0.0	0.0	0.0	0.0	0.0
	High	0.0	0.0	0.0	0.0	0.0	0.0
Total	Low	43.1	28.3	11.0	139.7	92.9	37.1
	Medium	29.7	21.6	9.7	93.5	69.8	32.4
	High	16.3	12.2	8.3	47.3	35.5	27.8
OTC transactions							
Total	Low	16.3	10.9	4.4	151.5	101.0	40.4
	Medium	10.9	8.2	3.8	101.0	75.7	35.3
	High	5.4	4.1	3.3	50.5	37.9	30.3
All transactions							
	Low	62.3	40.6	15.7	301.5	199.2	78.5
	Medium	43.3	31.2	13.8	204.4	150.8	68.9
	High	24.4	17.7	11.9	107.2	78.4	59.2

Source: Schulmeister et.al., 2008

Table A3.3 Hypothetical receipts in world regions

		World			Europe			North America			Asia and Pacific			Other		
Tax rate / Reduction in transaction volume		0.1	0.05	0.01	0.1	0.05	0.01	0.1	0.05	0.01	0.1	0.05	0.01	0.1	0.05	0.01
Spot transactions on exchanges																
Stocks	Low	66.3	33.9	7.0	20.3	10.4	2.1	33.7	17.2	3.5	11.5	5.9	1.2	0.8	0.4	0.1
	Medium	62.8	33.2	7.0	19.3	10.2	2.1	31.9	16.9	3.5	10.9	5.7	1.2	0.8	0.4	0.1
	High	59.4	32.1	6.6	18.2	9.8	2.0	30.2	16.3	3.4	10.3	5.6	1.1	0.7	0.4	0.1
Bonds	Low	13.6	7.0	1.4	12.3	6.3	1.3	0.0	0.0	0.0	0.4	0.2	0.0	0.9	0.5	0.1
	Medium	13.3	6.8	1.4	12.1	6.2	1.3	0.0	0.0	0.0	0.4	0.2	0.0	0.9	0.5	0.1
	High	12.6	6.6	1.4	11.4	6.0	1.2	0.0	0.0	0.0	0.4	0.2	0.0	0.9	0.4	0.1
Total	Low	80.0	40.9	8.4	32.7	16.7	3.4	33.7	17.2	3.5	11.9	6.1	1.2	1.7	0.9	0.2
	Medium	76.2	40.0	8.4	31.3	16.3	3.4	31.9	16.9	3.5	11.2	5.9	1.2	1.7	0.9	0.2
	High	72.0	38.7	8.0	29.6	15.8	3.3	30.2	16.3	3.4	10.6	5.7	1.2	1.6	0.8	0.2
Derivatives transactions on exchanges																
Total	Low	562.3	371.6	146.7	179.0	118.6	47.0	330.8	219.1	86.8	47.9	30.9	11.7	4.6	3.0	1.1
	Medium	381.3	281.1	128.6	120.7	89.5	41.2	223.2	165.4	76.1	34.2	24.0	10.3	3.2	2.3	1.0
	High	200.4	150.3	110.5	62.4	46.8	35.4	115.7	86.8	65.3	20.4	15.3	8.9	1.8	1.4	0.9
OTC transactions																
Total	Low	415.9	277.3	110.9	253.9	169.3	67.7	87.6	58.4	23.4	69.8	46.6	18.6	4.5	3.0	1.2
	Medium	277.3	208.0	97.1	169.3	127.0	59.2	58.4	43.8	20.4	46.6	34.9	16.3	3.0	2.3	1.1
	High	138.6	104.0	83.2	84.6	63.5	50.8	29.2	21.9	17.5	23.3	17.5	14.0	1.5	1.1	0.9
All transactions																
	Low	1058.1	689.8	266.0	465.5	304.6	118.2	452.1	294.8	113.8	129.7	83.5	31.6	10.9	6.9	2.5
	Medium	734.8	529.1	234.0	321.3	232.8	103.9	313.6	226.1	100.1	92.0	64.8	27.8	7.9	5.4	2.2
	High	411.0	293.0	201.7	176.7	126.1	89.4	175.1	125.0	86.2	54.3	38.5	24.1	4.9	3.4	1.9

Source: Schulmeister et.al., 2008

EUROPEAN PARLIAMENT

QA - 01-14-361 - EN - N

DIRECTORATE-GENERAL FOR EXTERNAL POLICIES

POLICY DEPARTMENT

Role

Policy departments are research units that provide specialised advice to committees, inter-parliamentary delegations and other parliamentary bodies.

Policy Areas

Foreign Affairs

- Human Rights
- Security and Defence

Development

International Trade

Documents

Visit the European Parliament website: **http://www.europarl.europa.eu/studies**

PHOTO CREDIT: iStock International Inc.

ISBN 978-92-823-5646-3
doi: 10.2861/60507

Publications Office