# FINANCIAL-TRANSACTION TAX: SMALL IS BEAUTIFUL

ZSOLT DARVAS AND JAKOB VON WEIZSÄCKER

## Highlights

- The crisis has increased interest in financial-transaction taxes. But should financial transactions be taxed? The case for taxing them merely to raise more revenue from the financial sector is not particularly strong. However, a tax on financial transactions could be justified in order to limit socially-undesirable transactions, when more direct means of doing so are unavailable for political or practical reasons. On that basis, there is a case for a very small tax on financial transactions.

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### EXECUTIVE SUMMARY

#### Background

The annual value of financial transactions has increased very rapidly in the past decade, reaching a level about seventy times greater than global GDP. The crisis has dented, but not reversed, this growth while greatly increasing public support for taxing financial transactions.

#### Aim

The key question of this paper is: should financial transactions be taxed?

The case for a tax on financial transactions simply to raise more revenue from the financial sector to pay for the cost of the crisis is not particularly strong. Better alternatives for taxing the financial sector are likely to be available.

However, the case is stronger for a tax on financial transactions in order to limit the negative externalities of financial transactions. Some financial transactions are indeed likely to do more harm than good, especially when they contribute to systemic risk in the financial system. To the extent that more direct means of curbing harmful transactions are presently unavailable, the introduction of a financial-transaction tax should be considered.

However, such a financial-transaction tax should be very small, much smaller than the negative externalities in question, because it is a blunt instrument that also drives out socially-useful transactions. At the same time, there is a case for taxing over-the-counter derivative transactions at

Spot transactions only amount to about 12 percent of all transactions.

Higher-quality data is available at quarterly intervals for exchange-traded derivatives (excluding commodity markets). Figure 4 presents turnover data (in US dollars) for the three main types of derivatives broken down by geographic region where available. The key observation from the figure is that there was an explosion of trading activity starting in the early 2000s. The crisis shrunk trading activity by almost one half: turnover in 2009Q1 was 53 percent of turnover in 2008Q1. By 2009Q3 trading had rebounded somewhat to 62 percent of the peak level of 2008Q1, which is still several times more than the market activity levels before 2000.

In addition to the turnover data, we also provide an overview of the stock of open positions for derivative contracts. Figure 5 on the next page shows net open positions at quarterly intervals for exchange-traded derivatives, whereas data for over-the-counter derivatives is only available on a gross basis (Figure 6). Open positions move broadly in line with the changes in turnover. The explosion in open positions since the early 2000s, the crisis-related sharp drop and the partial rebound after the first quarter of 2009 are clearly discernible.

One important question for our purposes is the nature of transactions behind the observed explosion in activity, and to some extent also the reasons for the observed sharp drop in response to the crisis. The development of market infrastructure and, especially, improvements in information technologies – which substantially decreased trans4.2(h s)147edepd-2R(,)0rer-.1642 Tw [ (t)28.8(e115c)
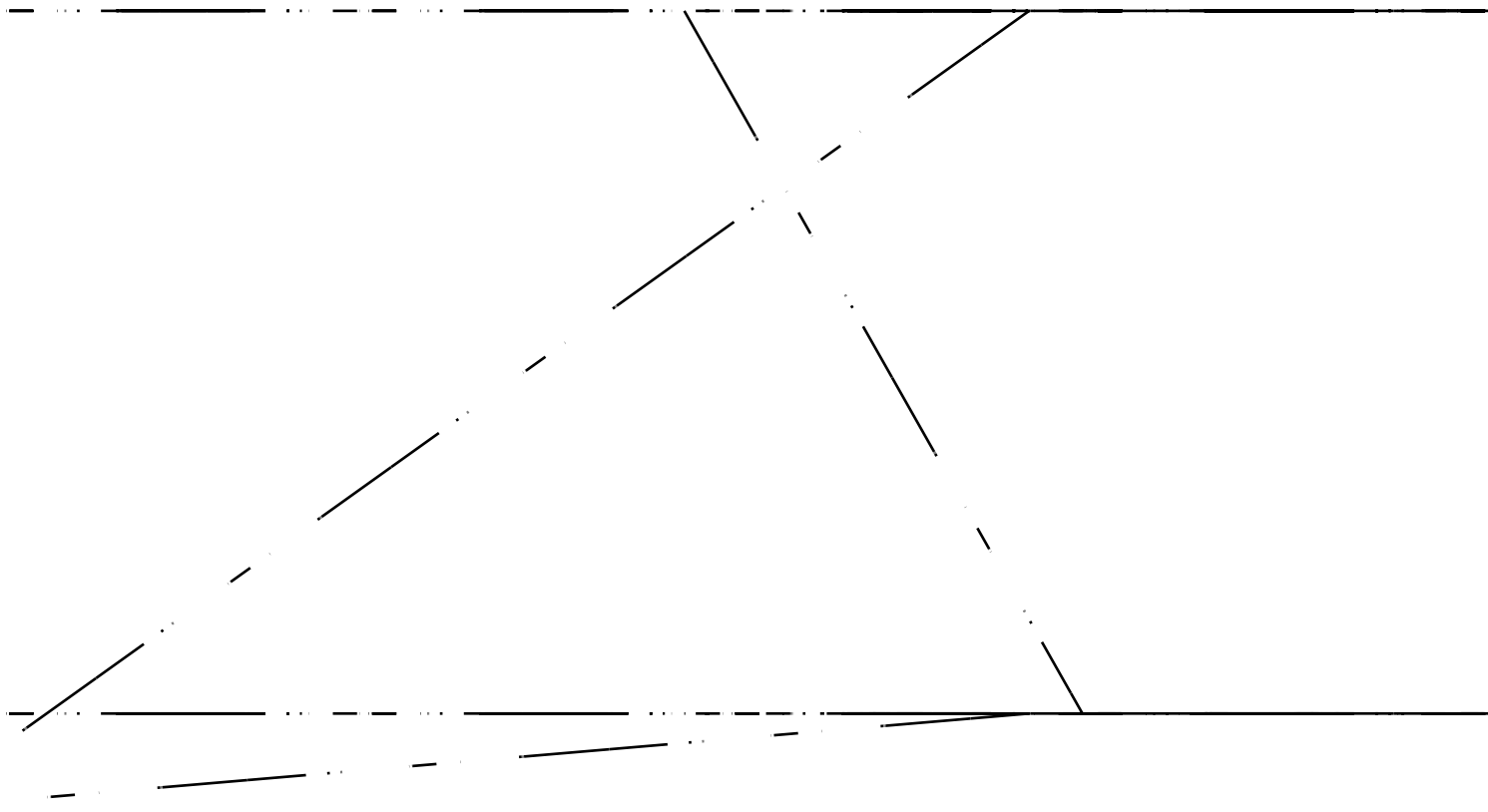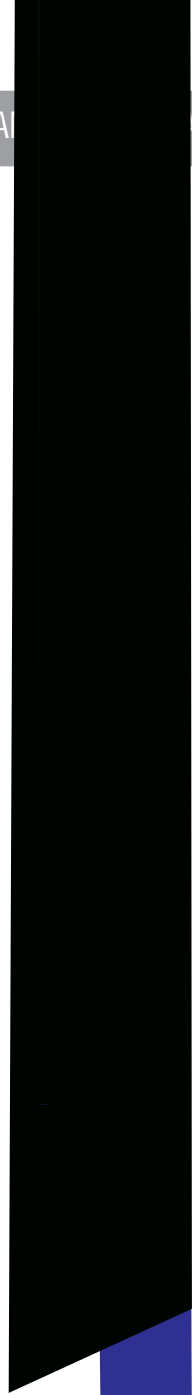
200 percent of world GDP, which was US$ 55 trillion in 2007. Adding the stock of credit to the stock of fixed-income securities, the resulting sum is still a tiny fraction of the US$ 2,840 trillion fixed-income related annual derivatives trading. Furthermore, the bulk of fixed-income derivatives trading (US$ 1,981 trillion out of US$ 2,403 trillion in 2007) was conducted on organised exchanges, and hence the 'hot-potato' effect often argued for dealership markets, such as the foreign-exchange market, may not be able to explain the huge rise in transactions.

Obviously, fixed-income derivatives are related not just to the underlying fixed-income security and credit but also to hedging other activities. For example, the hedging of future foreign-currency risks also has an interest rate dimension that can be addressed with interest-rates swaps. Interest-rate swaps are also the ideal means to pursue 'long duration' investment strategies by insurance companies and others. Various interest-rate derivatives are also used to hedge asset-backed securities and, as their duration can change easily, it may be necessary to change frequently the hedging positions. While these and other hedging activities are generally essential to manage risk, the huge gap between turnover and the outstanding stock of assets still presents a puzzle.

Overall, lower transaction costs and financial innovation have clearly helped markets to be more efficient at helping actors follow through on their economic incentives, thereby leading to massive increases in financial-transaction volumes. However, it is less clear to what extent the relevant actors were all acting in accordance with sound incentives, which ultimately determines the extent to which this increase in transactions was accompanied by a real increase in economic efficiency.

## 2.2 Financial-transaction taxes: international experiences

Many countries have applied financial-transaction taxes in the past and a limited number of countries continue to apply financial-transaction taxes today. These taxes are primarily levied on spot share trading, but in a few countries, other types of transactions, including derivatives, are taxed as well[5]. The best-known example is the UK's stamp duty: it is a 0.5 percent tax on the value of spot transactions in shares of UK companies. The tax rate on share trading is one percent in Ireland, 0.5 percent in Korea, while tax rates between 0.15 and 0.3 percent are applied in Australia, Switzerland, Greece, Hong Kong, India and Taiwan[6]. The Taiwanese transaction tax is rather broad and covers various kinds of securities, including bonds and futures contracts (see Box 2 on the next page). The revenue generated from the tax can be substantial, with data for the UK, Ireland, Taiwan and South Africa provided in Table 1.

The collection cost of FTTs is generally very low due to the electronic execution and settlement of

Table 1: Revenues from financial-transaction taxes in four countries (2001-2008)

| | UK | | Ireland | | Taiwan | | South Africa | |
|------|-----------|----------------------|-----------|----------------------|-----------|----------------------|-----------|----------------------|
| | In GBP bn | % total tax revenue | In EUR bn | % total tax revenue | In US$ bn | % total tax revenue | In US$ bn | % total tax revenue |
| 2001 | 2.9 | 0.9 | 0.35 | 1.2 | 1.9 | 5.2 | 0.4 | 1.6 |
| 2002 | 2.6 | 0.8 | 0.30 | 1.0 | 2.3 | 6.5 | 0.4 | 1.6 |
| 2003 | 2.6 | 0.7 | 0.26 | 0.8 | 2.2 | 5.9 | 0.6 | 1.6 |
| 2004 | 2.7 | 0.7 | 0.26 | 0.7 | 2.8 | 6.7 | 1.0 | 2.1 |
| 2005 | 3.5 | 0.9 | 0.32 | 0.8 | 2.3 | 4.8 | 1.3 | 2.4 |
| 2006 | 3.8 | 0.9 | 0.41 | 0.9 | 2.9 | 5.9 | 1.5 | 2.5 |
| 2007 | 4.2 | 0.9 | 0.61 | 1.3 | 4.1 | 7.8 | 1.4 | 1.9 |
| 2008 | 3.2 | 0.7 | 0.42 | 1.0 | 3.0 | 5.5 | 1.4 | 1.9 |

Sources: HM Revenue & Customs, Revenue Irish Tax & Customs, Ministry of Finance (ROC), South Africa Revenue Services, IFS.
Note: UK data refer to fiscal year.

5. See, for example, Table 1 in Pollin, Baker and Schaberg 2003, and Table A1 in Schulmeister, Schratzenstaller and Picek, 2008.

6. France also had a tax rate between 0.15 and 0.30 percent with a maximum of 610 euros for each transaction, but it was abolished on 1 January 2008.

trades. In the UK, for example, in the fiscal year 2008/2009, the collection cost for all stamp duties (including on property) was 0.21 pence per pound raised, while the average for all taxes was 1.1 pence (HM Revenue & Customs Autumn Performance Report 2009). But the collection cost for stamp duty on share transactions is likely to be substantially lower since the amount given above includes collection costs for stamp duty on property, which is typically more expensive to collect (Bond, Hawkins and Klemm 2005).

At the same time, it should be noted that transaction taxes have not been equally successful in raising revenues everywhere. For example, when

A financial-transaction tax could help to reduce such over-incentives to invest in being fastest by discouraging very short-term speculation that exploits minor information advantages. While this overinvestment is likely to be only a tiny fraction of GDP, it may not be an entirely negligible part of investment for the financial service industry.

### 3.2.2 Regulation and financial-sector fragility

A powerful argument in favour of transaction taxes would of course emerge if very low transaction costs could be linked to the kind of financial sector instability we have just been through. Krugman (2009) gives an example of such a link: part of the fragility of the financial sector observed during the present crisis was due to the heavy reliance on short-term arrangements and, more broadly, excessive systemically relevant leverage. For example, the financial sector relied to a large extent on rather short-term financing for its funding needs (interbank market, commercial paper). When the market for this short-term funding broke down, the situation immediately became systemically relevant and public intervention was needed. A financial-transaction tax might have helped somewhat to discourage such short-term arrangements. However, as pointed out by Zingales (2009), a tax on short-term debt would be a better instrument to tackle this particular concern. But behind this particular example there might be a more general observation on the interplay between financial-sector regulation and financial-market efficiency. If financial-sector regulation is sufficiently light to allow substantial

cycle without destabilising the exchange rate. While the underlying problem is of course still relevant today for a number of countries, it may be hard to justify the introduction of a universal transaction tax on that basis. However, what remains is the insight that transaction taxes may often be an attractive policy when administrative zero-one choices are inappropriate, as may be the case with many problems in the financial markets.

### 3.2.4 Transaction costs and volatility

One much-discussed question is whether lower financial-transaction costs lead to lower or higher price volatility in markets. However, the brief review of the literature we present in the following is inconclusive. Therefore, we hesitate to use a possible link between financial-transaction costs and volatility either as a strong argument for or against financial-transaction taxes at this stage.

Advocates of financial-transaction taxes suggest that by making short-horizon trading more costly compared to long-horizon trading, both short-run volatility (ie 'noise') and long-run volatility (ie persistent deviation from 'fundamental equilibrium') decrease; see eg Summers and Summers (1989), Frankel (1996), Palley (2003) or Schulmeister (2009). But there is also the opposite argument that financial-transaction taxes, by reducing

liquidity, risk increasing the volatility of markets; see eg Mannaro *a* (2008). The empirical evidence seems inconclusive at this point. For example, Jones and Seguin (1997) show that the reduction in the commission portion of transaction costs in 1975 led to a decrease in the volatility of US stock prices, but Liu and Zhu (2009) — by applying the same methodology as Jones and Seguin (1997) — find that a reduction of the commission in the Japanese equity markets has increased volatility. Hau (2006) finds a positive association between transaction costs and volatility in the French stock market, Baltagi *a* (2006) for the Chinese stock market, and Aliber

*a* (2004) for the foreign exchange market. Umlauf (1993) (there is also a review)

### 3.2.5 Trading volume

By contrast, what is fairly clear is that higher transaction costs will tend to reduce trading volume. Such a reduction in trading volume would also tend to go hand-in-hand with a reduction in market liquidity, which could be a major adverse consequence of a ¢

the small tax , which is again proportionate to the price elasticity of and to . As a result, the overall size of the blue area varies in proportion to for small tax rates.

With this, we can now show that is it always possible to pick a small but non-zero tax which is sufficiently small for the welfare benefits of the tax to exceed the welfare costs. Formally, we look for the range of taxes where the blue area is bigger than the red area.

$$\text{Blue area} > \text{Red area}$$

$$C_{\ldots} \cdot \ldots \cdot A_{\text{Blue}}\, t > C_{\ldots} \cdot \ldots \cdot A_{\text{Red}}\, t^2$$

$$> t > 0$$

Of course, the scale of the drawings in Figure 9a and 9b might in reality be very different, for example if there were only very few transactions that carried a negative externality but very many carrying a positive one. However, such a difference in scales would merely influence the constants above and call for an even smaller , but the basic result would be unaltered. Within this very basic framework – which can be generalised further - we therefore find that a range of positive but small financial-transaction taxes wi 0 0 1 i1.9(h)17.1(e)28iahat

might stimulate interest in first-best regulation even as the memory of the financial crisis fades.

The targeted first-best measures will of course need to include better regulation and supervision of the financial industry. But they may also include more targeted tax incentives. For example, it may be possible to measure and to tax systemic risk directly, as suggested for example by Acharya *a* (2009). Such levies may, for example, be used to fund a financial-sector bailout mechanism, as is currently under discussion in Sweden and can be argued to be at the heart of the recent Obama proposal to tax large banks based on their leverage.

Even within a financial-transaction tax system, differentiation in rates of tax is possible and could be a useful means to make the system more targeted and effective. In particular, one may wish to consider taxing over-the-counter derivative transactions at a somewhat higher rate than exchange-based derivative transactions[15]. Substantively, this could be justified on account of the lesser transparency and greater systemic risks that over-the-counter transactions might entail. And such tax incentives could nicely complement the ongoing legislative action on both sides of the Atlantic to encourage centralised clearing for derivatives.

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