The stock market effects of a securities transaction tax: Quasi-experimental evidence from Italy

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1. Introduction

In the aftermath of the financial crisis, in several countries new levies on the financial sector have been proposed and in some cases implemented. We focus in particular on the recent introduction of a securities transaction tax (STT) in Italy. A peculiarity of the Italian STT is that it only concerns stocks of corporations with a market capitalization above € 500 million. We exploit this feature via a differences-in-differences approach – comparing taxed and non-taxed stocks before and after the introduction of the tax – and via a regression discontinuity design – comparing the performance of stocks just above the threshold with those just below. Focusing on the regulated market, we find that the new tax reduced liquidity, but it left transaction volumes and returns substantially unaffected. There is also evidence – although not conclusive – that the tax increased volatility.

Finally, as the crisis caused public finances to deteriorate – partly due to the public support granted to distressed financial institutions – many governments needed to raise additional revenues, and the financial sector appeared to be an obvious contributor to many.

It is therefore not surprising that new taxes on the financial sector have recently been proposed and in some cases implemented (Shackelford et al., 2010; IMF, 2010; Hemmelgarn and Nicodeme, 2012; Devereux et al., 2013). In particular, the crisis rekindled the discussions about the desirability of a Security Transaction Tax (STT).

For example, in September 2011, the European Commission proposed that a coordinated STT be implemented in the European Union. This proposal failed to get support by all member states, but eleven countries (Austria, Belgium, France, Germany, Greece, Italy, Portugal, Slovakia, Slovenia, Spain and Estonia, which left the group in 2013) were authorized by the European Parliament and the European Council to go ahead with the project. Consequently, in February 2013 the Commission proposed a directive on a harmonized STT to be implemented in the eleven member states. The negotiation process is still under way, but in the meantime France unilaterally introduced an STT in August 2012; Italy did the same starting from March 2013.

In the present paper, we provide what to our knowledge is the first econometric investigation of the impact of the Italian STT on the domestic stock market.
Our empirical strategy relies on a peculiarity of the Italian STT, namely the fact that it only concerns stocks of corporations with a market capitalization above € 5 00 million. We can exploit this feature of the rules by adopting a differences-in-differences strategy, comparing the change in the performance of stocks above the threshold with that of stocks below the threshold. Moreover, given the discontinuity embedded in the rules, we can compare the performance of stocks just above the taxable threshold with those just below, thus providing a robustness check for our differences-in-differences results.

This identification strategy, which exploits two different sources of identification, represents the main methodological contribution of the paper.

To give a preview of our results, we find that overall the introduction of the STT induced a reduction in liquidity for the stocks hit by the reform. We also find some (though not conclusive) evidence that the volatility of treated stocks increased. Equity returns and exchanged volumes were apparently unaffected. Notice however that we only observe the effects of the STT on the regulated stock market. As we will discuss below, there are reasons to believe that the impact on over-the-counter transactions (for which the tax rate is twice as high) could have been stronger.

The rest of the paper is structured as follows. In Section 2 we review the empirical and theoretical literature concerned with the economic effects of STTs; in Section 3, we summarize the features of the Italian STT; in Section 4 we describe the dataset used in the empirical analysis; in Section 5 we explain our empirical strategy and present our results; Section 6 presents several robustness checks; Section 7 discusses the main limitations of our results; Section 8 concludes.

2. Literature review

2.1. Theoretical literature

The theoretical literature on the STT is relatively small and does not reach a consensus on its effects. Prima facie, following the introduction of the tax, gross-of-tax returns should rise, and trading volumes should decrease. Indeed, both reactions make sense as investors try to mitigate the effect of the tax on net-of-tax returns (Matheson, 2012; Kupiec, 1996; Lendvai et al., 2013). However, the size of the impact on returns depends on capital mobility: if capital supply is imperfectly elastic, after-tax returns may be lower in equilibrium; the effects on volumes can instead be exacerbated by the migration of activities towards other markets and/or instruments. Bid-ask spreads should also increase but the size of the increase depends among other things on the market's microstructure (Dupont and Lee, 2007).

When it comes to the effect of the tax on volatility, the disagreement is stronger. Proponents of the tax argue that it reduces volatility because it discourages the trading activity of destabilizing noise traders (Stiglitz, 1989; Summers and Summers, 1989). The STT should therefore be considered as a “Pigouvian” form of taxation. On the other hand, it is also true that it discourages rational and stabilizing traders, so the overall effect turns out to be theoretically ambiguous (Kupiec, 1996; Song and Zhang, 2005).

To sum up, the question concerning the effects of the STT has to be answered on empirical grounds.

2.2. Empirical literature

In his seminal empirical paper on the subject, Umlauf (1993) studies the effect of the introduction (in 1984) and of the subsequent increase (in 1986) of an STT in Sweden. He finds a negative effect on the aggregate stock market price, a large decrease in traded volumes, but no clear effect on price volatility. Subsequently, Hu (1998) examines 14 tax rate changes in four Asian markets (Hong Kong, Taiwan, Japan and Korea) from 1974 to 1994: he finds that prices go down when the tax increases, and turnover (albeit less clearly) seems to decrease; no clear pattern emerges concerning volatility, which goes down in 6 out of 13 episodes. Baltagi et al. (2006) look at the 1997 increase in the Chinese stamp duty tax and observe a significant increase in volatility, but their results are otherwise in line with those of Umlauf (1993) and Hu (1998).4

One important methodological limitation of the aforementioned studies is that they use simple difference-of-means tests for comparing market outcomes before and after the tax change. This approach neglects the possibility that other market-wide changes might confound the actual effects of the tax change.5 A step forward in this respect was taken by Liu (2007), who used American Depositary Receipts (ADR) of Japanese stocks – which are not subject to the home country’s tax legislation – as a control group to assess a reduction in the Japanese STT which took place in 1989. However, the author himself admits that his strategy is problematic because, due to arbitrage, the prices of ADRs and of their “parent” stocks tend to move closely together. In the same vein, Bond et al. (2005) argue that the price effects of an STT change are stronger for shares with a higher turnover (because the present discounted value of future tax payment for them is higher). Therefore, they use high-turnover (resp. low-turnover) shares as the treatment (resp. control) group in a differences-in-differences analysis of the 1990 announcement of a reduction in the UK stamp duty tax. They find, in line with their argument, that high-turnover shares are more affected by the reform. Their research design, however, has two limitations: first, the control group was also exposed to the treatment; second, the threshold value used to separate the control group from the treatment group is arbitrary.7

A fully-fledged differences-in-differences approach has been adopted only very recently, to study the introduction of an STT in France in August 2012. Meyer et al. (2015) and Colliard and Hoffmann (2016) compare the performance of French stocks with those of their British (Meyer et al., 2015) and European (Colliard and

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1 The effects might be different for other dimensions of liquidity. For example, in some theoretical models there are cases in which depth increases with the introduction of the STT (Subrahmanyam, 1998; Dupont and Lee, 2007).

2 The earliest proposal can be probably found in a famous passage of Chapter 12 of Keynes’ General Theory: “It is usually agreed that casinos should, in the public interest, be inaccessible and expensive. And perhaps the same is true of Stock Exchanges. That the sins of the London Stock Exchange are less than those of Wall Street may be due, not so much to differences in national character, as to the fact that to the average Englishman Throgmorton Street is, compared with Wall Street, the average American, inaccessible and very expensive. The jobber’s turn, the high brokerage charges and the heavy transfer tax payable to the Exchanger, which attend dealings on the London Stock Exchange, sufficiently diminish the liquidity of the market (…) to rule out a large proportion of the transactions characteristic of Wall Street. The introduction of a substantial government transfer tax on all transactions might prove the most serviceable reform available, with a view to mitigating the predominance of speculation over enterprises in the United States”.

3 Similar results are obtained if the stock market volatility is normalized dividing it by the corresponding volatility of the NYSE.

4 Phylaktis and Aristidou (2007) study the effects of changes in the Greek STT. They estimate a GARCH model analogous to the one used by Baltagi et al. (2006) and find tax changes have no effect at all, either on the mean or on the volatility of daily returns. However, they find that the effect on volatility becomes significantly positive (resp. negative) if one looks at bullish (resp. bearish) market periods.

5 Baltagi et al. (2006) complement their analysis by estimating a GARCH model, but also in this case the effect of the tax change is identified via a time dummy equal to one in the post-reform period.

6 Similar limitations are to be found in the very small literature which studies the effects of transaction tax rates on derivatives markets (see Chou and Wang, 2006).

7 Furthermore, they only look at prices, not at volatility and volumes.
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