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The impact of the French Tobin tax

L. Becchetti [a,*], M. Ferrari [a], U. Trenta [b]

[a] DEDI Department, University of Roma "Tor Vergata", Via Columbia, 2, 00133 Roma, Italy
[b] Italian Primary Asset Management Company, Italy

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ABSTRACT

We analyze the impact of the introduction of the French Tobin tax on the turnover and measures of the liquidity and volatility of the affected stocks with nonparametric tests on individual stocks, difference-in-difference tests and other robustness checks controlling for simultaneous month-of-the-year and size effects. Our findings indicate that the tax produces a significant reduction in turnover and volatility (measured in terms of stock price volatility and the high–low price range) and inconclusive effects on liquidity when the latter is evaluated under the two dimensions of the estimated bid–ask spread and the Amihud (2002) price impact ratio.

1. Introduction

The global financial crisis, and the discussion about the reform of the financial system that followed have recently revived the debate on the imposition of a financial transaction tax (henceforth FTT). The times and financial market conditions are different from those that led James Tobin to formulate his "Tobin tax" proposal after the end of the Bretton Woods era, with the intent of "throwing sands in the wheel of "speculators" in foreign exchange markets.[1] In more recent years, the alleged responsibility of the financial system for the global crisis and the demand for an equitable sharing of the costs of the crisis created bottom-up pressure for the adoption of the tax at the EU level.[2]

After several favorable votes by the European parliament, in October 2012, seven EU member states agreed to start the process of enhanced cooperation to introduce the tax among member states.[3] Meanwhile, countries like France opted for an anticipated

* Corresponding author. Tel.: +39 0636300723; fax: +39 062020500.
E-mail addresses: becchetti@economia.uniroma2.it (L. Becchetti), ferrari@economia.uniroma2.it (M. Ferrari), utrenta@bloomberg.net (U. Trenta).

[1] Tobin observed the following about the tax: "most disappointing and surprising, critics seemed to miss what I regarded as the essential property of the transaction tax – the beauty part – that this simple, one-parameter tax would automatically penalize short-horizon round trips, while negligibly affecting the incentives for commodity trade and long-term capital investments. A 0.2% tax on a round trip to another currency costs 48% a year if transacted every business day, 10% if every week, 2.4% if every month. But it is a trivial charge on commodity trade or long-term foreign investments".

[2] The idea of the adoption of the tax after the crisis gained consensus in the discipline and led 1000 economists of 53 countries to sign a document supporting it during the G20 meeting held in Washington 14–15 April 2011. See http://www.guardian.co.uk/business/2011/apr/13/robin-hood-tax-economists-letter.

[3] On May 23rd, 2012 the EU Parliament voted in favor of the FTT (487 out of 685 votes). At that time the Euro-barometer showed that 66% of Europeans were in favor of the tax. Because not all EU members favor it, on 12 October 2012, a subset of 11 member states started the so-called "enhanced cooperation" procedure (requiring a minimum of 9 member states) toward its enactment. Seely (2104) provides detailed evidence on the recent FTT debate in the UK, showing that there is no opposition to the fact that the banking industry should pay a cost for the financial crisis and that important revenues have to be raised for financing global common goods. However the UK government suggests that a flat bank levy tax (such as that introduced in the UK in 2011) would achieve the goal better than an FTT because the former would not be distortive, would not produce cascading effects and would not be transferred to final consumers. Another important point to be considered in the UK position is that, as reported by Steele, the replacement of the UK Stamp Duty with a EU FTT (whose revenues would presumably accrue to the country of residence of transactors) could end up in a loss of UK finances. Due to the application of the transactor nationality

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adoption of the tax on August 1, 2012, whereas Italy introduced it on March 1, 2013. This paper aims to evaluate the effects of FTT adoption in France. As is well known, France is not the first country to decide to introduce a Financial Transaction Tax without coordination with other countries. In his survey, Matheson (2011) identifies 23 examples of sovereign states that have adopted in the past or are still adopting (15 of them) a financial transaction tax (including top financial centers such as Hong Kong, the United States and the United Kingdom).[4]

The pros and cons of the FTT have been hotly debated. Advocates of the tax today argue that it may serve the purpose of reducing "speculative" short-term trading (Summers and Summers, 1989; Stiglitz, 1989) and distributing more equitably the burden of the costs of the global financial crisis. Obviously, even if the two arguments were correct, there would be a trade-off between them, i.e., between the revenue and the anti-speculative goals.

Opponents of the tax reply that it is not demonstrated that its adoption reduces speculation. They also affirm that, if not adopted worldwide, the tax will be paid by less speculative traders who generally have less elastic demands and are less able to relocate their activities to other financial markets. Moreover, they expect the tax to reduce liquidity and increase the cost of equity capital, with recessionary effects on the real economy.[5]

Unfortunately, theoretical evidence is unable to distinguish between the two views. From a theoretical point of view, the impact of the tax on liquidity and volatility, as well as the nexus between the tax and "speculation", depends on market microstructure assumptions.[6] As is well known, "speculators" are on one of the two sides in a transaction in which one party (the hedger) buys insurance from another (the speculator). In this sense, the speculator plays the important role of assuming risk by selling protection of risk to another agent who wants to buy this "service". However, if we assume the existence of noise traders á la De Long et al. (1990) (traders who amplify market movements basing their information on noise), speculation and risk-taking behavior may be destabilizing and amplify asset price movements.

In this respect, if the FTT induces noise traders or chartists to migrate, it may reduce market overreaction to news (Gammill and Perold, 1989; Gorton and Pennacchi, 1993; Kumar et al., 1995; Chol and Subrahmanyam, 1994; Becchetti and Ciciretti, 2011). From an empirical point of view, the existing evidence documents that the introduction of the tax definitely reduces transaction volumes, even though this does not imply that its revenues are necessarily negligible (see footnote 4). Conversely, the impact on volatility has been generally (but not always) proven to be positive. Umlauf (1993) reports an increase after the introduction of the tax in Sweden. Baltagi et al. (2006) find a similar result when the tax is raised from 0.3 to 0.5 in China, whereas Liu (2007) find that commission deregulation in Japan increased (not reduced) volatility. Phylaktis and Aristidou (2007) qualify this impact by finding that the effect on volatility is positive for highly traded stocks in bull markets but not significant in bear markets.

If it is hard to dispute that an FTT would reduce efficiency, we must also take into account that efficiency is not the only criterion by which the introduction of such a tax should be evaluated because equity and precaution are also important. Some authors argue in fact that the FTT could create incentives to address human capital and financial resources toward activities different from short-term trading that can be more productive for society (Griffith-Jones and Persaud, 2012). In addition, the costs in terms of efficiency must be traded off with the potential gains in equity, provided that the FTT is effectively progressive and not paid by low-wealth investors with less elastic demand. [7]

In the present paper, we investigate the effects of the introduction of the Financial Transaction Tax on the turnover, liquidity and volatility of French stocks at the Paris stock exchange. In contrast to many papers in the literature, we analyze what happened to each individual stock as well because the French law applies only to stocks with capitalization above €1bn. In this sense the French FTT creates two (a time and a size) thresholds that crucially discriminate transactions subject to the tax. For this reason, we adopt different approaches to measure its effects, and our overall empirical strategy is developed in three steps. In the first step, we perform nonparametric bootstrap tests on the null hypothesis of no difference in our main target variables before and after the introduction of the tax (turnover; two measures of liquidity, such as the (estimated) bid–ask spread and Amihud (2002) price impact measure; and two measures of volatility, such as the high–low price range and stock price volatility).[8] The test is performed on single stocks. In the second step, we perform aggregate difference-in-difference tests considering taxed stocks as treatment and non-taxed stocks as the control sample. In the third step, we outline an econometric panel specification that follows an approach similar to a two-dimensional regression discontinuity design allowing us to control for small size and month-of-the-year effects, which may occur simultaneously to the introduction of the tax.

The paper is divided into seven sections (introduction and conclusions included). In the Section 2, we illustrate in detail the event around which we build our empirical analysis (introduction and characteristics of the French Tobin tax). In the Section 3, we present and comment on our difference-in-difference empirical findings and our nonparametric tests on the turnover, liquidity and volatility on individual stocks. The Section 4 illustrates our econometric robustness check based on the discontinuity design approach. The Section 5 interprets and comments on our results in light of the theoretical literature. The Section 6 discusses the implications of the results for policymakers/regulators and investors. The Section 7 concludes the paper.

2. Event and data

Introduced by article 235-ter ZD of the Supplementary Budget Act 2012 – 958, the financial transaction tax became operative in France on August 1, 2012. It imposes a 0.2% tax on purchases of

principle, transactions in the London Stock exchange by EU (non-UK) counterparts should be subject to the EU FTT even though the UK does not participate to the EU FTT. All these theoretical and practical considerations explain why the UK is not a part of and strongly opposes the EU enhanced cooperation procedure.

[4] The UK stamp duty tax charges 0.5% of the transaction value of stocks listed in the domestic stock exchange, whereas the US tax for NYSE and NASDAQ charges 0.003%. The highest reported tax revenue is in Korea (6.2 billion dollars), followed by the United Kingdom (5.86 billion dollars).

[5] The EU has recently simulated with a stochastic dynamic general equilibrium model the real effects of the introduction of the tax, identifying a.5% fall in the EU GDP in the long run (40 years in the model). The reduction falls to.21% if the share of investment financed via equity and bonds is reduced to 80% in the model assumptions. The simulation also assumes that tax revenues are neutral on GDP.

[6] Mannaro et al. (2008) conclude that the tax reduces liquidity increasing volatility. Westerhoff and Dieci (2006) argue on the contrary that the tax may reduce volatility if it produces a reduction of noise trading.

[7] Amenc (2013), in his open letter to European Commission President José Manuel Barroso, argues that, based on the existing literature, a Tobin tax would make long-term investment management more costly, make markets less efficient, increase the liquidity premium and restrict price discovery phenomena.

[8] We focus on these variables because they are more likely to be affected by the tax, as documented in the literature. Inspection of our database also shows that daily stock returns and volatility calculated on daily returns are substantially unaffected by the tax after three months following its introduction. The results are omitted but available upon request.