

TOBIN TAX: Financial transaction taxes will make markets more not less volatile

A tax on financial transactions would make price setting more difficult and create greater market volatility during hectic periods. That is the central finding of research by **Albina Danilova** and **Christian Julliard**, to be presented at the annual congress of the European Economic Association in Mannheim in August 2015.

A tax on financial transactions – the so-called ‘Tobin tax’ – has long been suggested as a way to make markets less volatile by ‘throwing sand in the wheels’ of the financial markets. Indeed, such a tax was proposed by the European Commission in September 2011 and is currently likely to be implemented by some European countries in January 2016.

By creating a analytical framework that looks dynamically at how markets work, the study finds that traders tend to be active at certain points in time rather than trading continuously. This means that trading often has quiet points and busy spikes.

Because a financial transaction tax alters the price of financial assets, it makes it more difficult to tell what their fair value is. This means that while quiet times become quieter (because the cost of trading is now too high for some trades even to take place), hectic times when price shocks happen become worse because the ‘real’ equilibrium price is hidden. The authors conclude:

‘Albeit theoretical in nature, our contribution is empirically promising for both practitioners and policy-makers.’

‘It provides a structural framework for estimating the degree of asymmetric information and trading frictions in the market; for modelling bid-ask spreads, market impact and resilience, as well the limit order book; and for disentangling fundamental risk from endogenously generated market risk.’

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The recent financial turmoil has renewed the focus of academics and policy-makers on understanding whether, and how, financial risk is endogenously generated in the marketplace. Moreover, policies intended to reduce financial market volatility, and possibly increase market liquidity, have come to the forefront of the economic and political discourse. In particular, in the form of a financial transaction tax – or Tobin tax – which has been proposed as a device for ‘throwing sand in the wheels’ of the financial markets.

This study contributes to this discourse by developing a (dynamic) equilibrium theory in which liquidity, market activity and stochastic (hence time varying) price volatility are all endogenously generated by the strategic interaction of agents in the marketplace. The endogenous stochastic volatility result is driven by the fact that, in the presence of asymmetric information and trading frictions, agents do not trade continuously but rather at endogenous, yet stochastic, points in time. And this endogenous trading activity generates a time varying volatility for the price process of risky assets.

The model provides theoretical foundations for a very large set of empirical regularities in financial markets, such as:

- a) the presence of time varying, and clustering, volatility for the price of risky assets;
- b) the link between return volatility and market volume, as well as between volatility and number of trades;
- c) the evidence that market volatility is increasing, and liquidity decreasing, in the degree of trading costs and adverse selection;
- d) the contemporaneous occurrence of volatility spikes and liquidity dry-ups (as, for example, during the recent financial crisis);
- e) the empirical link between frequency of trading activity, price impact of trades, and the dynamics of price adjustments to new information releases; and
- f) the evidence on the effects of trading costs on price dynamics.

Since the researchers' framework delivers an equilibrium characterisation of the joint determinants of both liquidity and market risk, and rationalises several salient features of asset price dynamics, it provides a natural laboratory for analysing the equilibrium effects of a Tobin tax, such as the financial transaction tax proposed by the European Commission in September 2011, and which is currently likely to be implemented by a subset of the EU states starting in January 2016.

The researchers show that such a tax:

- i) reduces the informativeness of the equilibrium price process, therefore increasing the trade by trade variance, and its effect is more severe in markets with a high level of adverse selection;
- ii) reduces volatility in periods of small shocks to the fundamental value (that is, in tranquil times) since, conditional on small shocks, the market will be more often in the no trade region generated by trading frictions;
- iii) substantially increases volatility in hectic periods, that is, when large shocks to fundamental values occur.

These predictions, which are highly relevant from both practitioner and policy perspectives, yet controversial in nature, are in line with the empirical evidence on the effects of a transaction tax.

Albeit theoretical in nature, this contribution is empirically promising for both practitioners and policy-makers in that it provides a structural framework for: estimating the degree of asymmetric information and trading frictions in the market; modelling bid-ask spreads, market impact and resilience, as well the limit order book; disentangling fundamental from endogenously generated market risk.

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Information Asymmetries, Volatility, Liquidity, and the Tobin Tax
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