Might a Securities Transactions Tax Mitigate Excess Volatility?:
Some Evidence From the Literature

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Abstract

International financial markets are said to be excessively volatile due to destabilizing speculation and excessive market volume. Transactions taxes might help. From studying the literature we conclude that there must be an optimal market liquidity, which minimizes excess volatility. There are two effects when imposing a transactions tax. Both reduce excess volatility in highly speculative markets when tax rates are small. The total tax effect then is unambiguous. However, in illiquid markets the tax might raise volatility.

Keywords: International Financial Markets; Securities Transactions Tax; Excess Volatility.

JEL classifications: G15, G18, H20.

Contents

1 Introduction

As the elections of the German Parliament in 2002 were approaching, there was a widespread discussion about globalization and its discontents. Not only it was on the agenda in Germany but also in the rest of the western world, leading to parliamentary resolutions in Canada and France about taxing foreign exchange transactions to stabilize international financial markets. But the idea of a government intervention through transactions taxes did not arise in this decade. Already John Maynard Keynes in his General Theory from 1936 suggests in chapter 12 to mitigate the dominance of speculative and destabilizing speculation on financial markets by a Government transfer tax.

James Tobin (1978) put Keynes suggestion in concrete terms by proposing a small tax on all foreign exchange transactions. Stiglitz (1989) and Summers/Summers (1989) think of a securities transactions tax in order to raise the efficiency of financial markets by crowding out market participants that behave not rationally or waste too much resources for this speculative zero-sum game. Eichengreen, Tobin and Wyplosz renew the case for sand in the wheels of international finance in 1995.

What all of the proposals have in common is that a transactions tax is to be enhancing market efficiency. We will concentrate on the ability of the tax to bring back the price to its fundamental value and to lower excess volatility respectively. Its proof seems to be controversial since the literature does not provide theoretical models explaining real stock prices or exchange rates satisfactory. Moreover, especially for foreign exchange it is difficult or even

impossible to determine a fundamental price.

This paper offers some evidence from the literature that a transactions tax might reduce excess volatility when markets are highly speculative. Illiquid non-speculative markets might be faced with a perverse effect. Or to say it in different words, our work examines the circumstances, under which a transactions tax might be desirable. The idea is not to determine the fundamental value explicitly but to detect factors that drive prices away from a desirable value according to its underlyings. Since such a tax reduces the trading volume, we try to delineate a volatility-volume pattern and analyze the potential outcome of a tax levy.

In a first step, we derive a concept of market efficiency, in which excess volatility means inefficiency (section 2). We than work out the connection between excess volatility and market liquidity in section 3 before examining the effects of a transactions tax (section 4). Section 5 summarizes and concludes.

2 Efficiency of Financial Markets: Fama vs. Tobin

A Government Intervention, in our case the imposition of a transactions tax on financial markets, can be justified by improving the efficiency of the financial system or justice. The most common concept of assessing the market

efficiency is that of Cowles (1933) and Fama (1970)[1]. This market efficiency hypothesis values the ability of the market mechanism of incorporating news. One can distinguish between three forms of market efficiency according to the kind of information reflected in price movements. The weak form contains past prices or returns; the semi-strong form contains public information in addition; and in the sense of the strong form insider-information is to determine the market price additionally. Thus, in a perfectly efficient market prices incorporate news instantaneously leading to jumps in market prices without the necessity of trading volume.

The aim of implementing a transactions tax is reducing excess volatility in order to raise the market efficiency. Excess volatility normally is understood as the portion of price variability that can not be explained by changes in fundamental data.

The concept of the information arbitrage efficiency explained above can not be used to assess the effect of a transactions tax, because excess volatility need not necessarily be inefficient. Some fraction of information available is pseudo-signal or news containing wrong leading information. Thus, an information arbitrage efficient market that incorporates these information in its prices makes them drift away from desirable prices based on fundamentals. One solution might be using implied volatility, which measures only not expected price changes. This concept goes back to Engle's (1982) ARCH-Model and the GARCH-Model of Bollerslev (1986)[2].

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[1]See also Gaab (1983).

[2]More about estimating implied volatilities in Specht (2000).

Tobin (1987) offers a broader view of market efficiency[3]. In addition to the information arbitrage efficiency he distinguishes between three more concepts of efficiency: Fundamental valuation efficiency, full insurance efficiency, and functional efficiency. "A market in a financial asset is efficient if its valuations reflect accurately the future payments to which the asset gives title - to use currently fashionable jargon, if the price of the asset is based on rational expectations of those payments."[4] Efficiency in this meaning he calls fundamental valuation efficiency. In this context excess volatility means inefficiency, and a transactions tax that lowers excess volatility contributes to a more efficient market. In the following, we will use this concept of market efficiency for our analysis. And since the findings of Shiller (1981) and LeRoy/Porter (1981) regarding stock markets and Shiller (1979) relating to bond markets we know about the existence of excess volatility in this sense[5].

3   Excess Volatility and Market Liquidity

This section provides some evidence that there exists an optimal degree of liquidity. Some advocates of a securities transactions tax on financial markets point out to the danger of illiquid markets. "The logic of Keynes's liquidity preference theory is that the primary function of financial markets is to provide liquidity for asset holders. Since a liquid market must be an orderly one, rules and institutions must be developed to guarantee orderliness."[6] Thus, a transactions tax is a double-edged sword, since it cuts desirable liquidity

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[3]See also Tobin (1984).

[4]See Tobin (1987), paperback edition 1989, page 283.

[5]A survey of market volatility is offered by Shiller (1991). See also Cochrane (1991).

[6]In Davidson (2002), page 181.

also. In his model Frankel (1996) shows how a transactions tax discriminates destabilizing short-term speculation but at the same time warns about higher bis-ask spreads. Arestis and Sawyer (1998) model this trade-off by stabilizing and destabilizing components of exchange rate determination. Without mentioning it there must me an optimal liquidity.

In this section we try to delineate a pattern in the excess volatility-liquidity range. First, we describe the excess volatility-liquidity connection in the case of fully rational and completely informed market participants before introducing price misguidance due to irrational noise-traders, bubbles etc.. The total effect than generates a certain degree of liquidity, for which excess volatility is minimized.

3.1 The Liquidity Effect under Efficient Market Microstructure

The analysis in this subsection "is based on the hypothesis that market participants are both fully rational and completely informed about the structure of the model and the behavior of relevant [.] fundamentals."[7] The easiest assumption is that all market participants are homogenous. We call this efficient market microstructure. But in contrast to the efficient information arbitrage hypothesis prices do not jump instantaneously into new equilibrium but follow an approximation path. This is because participants do not know about the expectations of others. Thus, market liquidity enhances the approach to equilibrium. This meets the old Wall Street adage that it takes

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[7]See Isard (1995), page 182.

volume to move prices. Moreover, customer orders e.g. due to international trade and hedging provide market volume. What follows is an analysis of excess volatility when market liquidity varies, ceteris paribus. Before, we want to clarify the expressions market liquidity and excess volatility.

Market Liquidity:

Market liquidity is the ability of the market to change assets into money (or other assets respectively) according to the time it takes and to transaction costs. Two market features are positively related to this ability, namely the frequency of transactions and market volume. That is, every market modification or government intervention that reduces the frequency of transactions or market volume lowers market liquidity.

Excess Volatility:

Excess volatility is that share of price variability that can not be justified by changes in fundamental values. In our case excess volatility is all kind of drift off the fundamental equilibrium price. In a world with an efficient market microstructure as defined above the fundamental value is known, and any deviation is regarded as excess volatility.

From the remarks above it is already clear that excess volatility decreases with increasing liquidity. Since in this framework liquidity is the only factor that influences the price concerning its walk to equilibrium, the deviation from its fundamental value and thus excess volatility diminishes with higher liquidity[8].

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[8]Note that we assume homogenous traders so that the equilibrium price is unambiguous. If there were bulls and bears in the market, the price would depend on which group dominates the market. But even this does not effect our analysis since we do not deter-
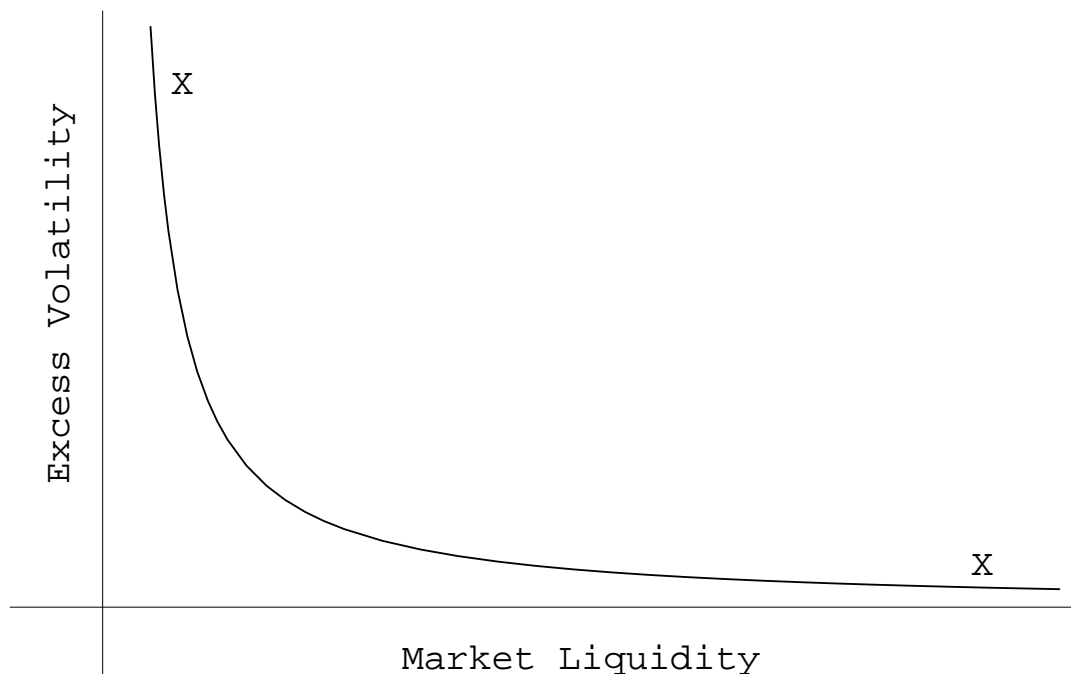
Figure 3.1: The Liquidity Effect under Efficient Market Microstructure.

There exist some other rationales. Davidson (2002) offers the first. The framework is that of an efficient market microstructure as stated above, and all homogenous participants are completely informed about the behavior of fundamentals except a random white noise. Thus, in addition to the divergence explained above, there exists a variance around the average that is determined by fundamentals, which can be attributed to random white noise. Reducing transaction costs is equivalent to lowering the admission price for participation. This widens the broadness of the market or volume (liquidity) respectively. "[.] in an efficient market, the larger the number of homogeneous participants, the smaller the variance, since variance has the property of being inversely related to the size of a random unbiased sample. In the

mine the equilibrium price explicitly but only the deviations (excess volatility) from this reasonable fluctuation margin.

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long run as irrational traders are made extinct by an efficient market, the remaining sample will be unbiased and volume and variance will be inversely related."[9]

The framework in Pagano (1989) is that of rational investors, which are affected by an initial endowment shock. He shows that the variance of the market price is a decreasing function of the number of traders[10].

In figure 3.1 the graph XX fulfills the requirement of inverse relationship and approaches to zero at high liquidity levels. Of course, the prove of the exact profile remains outstanding.

Umlauf (1993) using Swedish data and Jones/Seguin (1997) offer empirical evidence. Jones and Seguin examine the effect of transaction costs on the New York Stock Exchange and the American Stock Exchange in 1975. Both investigations detect an inverse relationship between transaction costs and volatility. Umlauf finds that daily variances were highest during the period of greatest transactions costs due to a transactions tax. In addition, Jones/Seguin (1997) as well as Campbell/Froot (1994) explicitly show an increase in volume due to lower transaction costs.

Transaction costs in the foreign exchange market are implicit and its estimation normally is based on the bis-ask spread quoted by banks to commercial or non-bank customers. However, in order to avoid methodological flaws, Aliber/Chowdhry/Yan (2003) use future prices to implicitly measure transaction costs. Their empirical findings suggest that volatility is positively correlated with the level of transaction costs and that volume is inversely re-

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[9]See Davidson (2002), page 191.

[10]See therein page 276.

lated with the level of transaction costs. That is, an increase in transaction costs, e.g. through a tax imposition, leads to a reduction in market volume and increases volatility. Thus, there is strong evidence that liquidity and excess volatility are negatively associated.

Investors liquidity preference offers another rational. Investors view liquidity as a desirable quality. Thus, the liquidity premium component of required rates of return rises when the market liquidity diminishes[11]. To say it in other words, the discount rate increases. Therefore, the asset price shifts away from its fundamental value[12].

3.2 The Liquidity Effect under Misguidance

Bernstein (1999) argues that the efficient market theory can not be the relevant theory for the world in which we live. He states, that "a market can never be efficient unless equilibrium prices exist and are known. Equilibrium prices are impossible in a dynamic and restless world [...]."[13] The conclusion would be that we are not able to determine excess volatility, which we use here as the measure of market inefficiency. But what we want to do in this paper is not determine excess volatility explicitly. The aim of our analysis is to detect factors that drive efficiency or inefficiency respectively. We do not have to know the fundamental equilibrium price explicitly to find out that lacking liquidity e.g. leads to higher volatility, which cannot be explained by

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[11]See Kupiec (1995).

[12]If the liquidity is cut due to a transactions tax, Kupiec (1995) shows that there will be price movements that more than offset the increased liquidity premium effect.
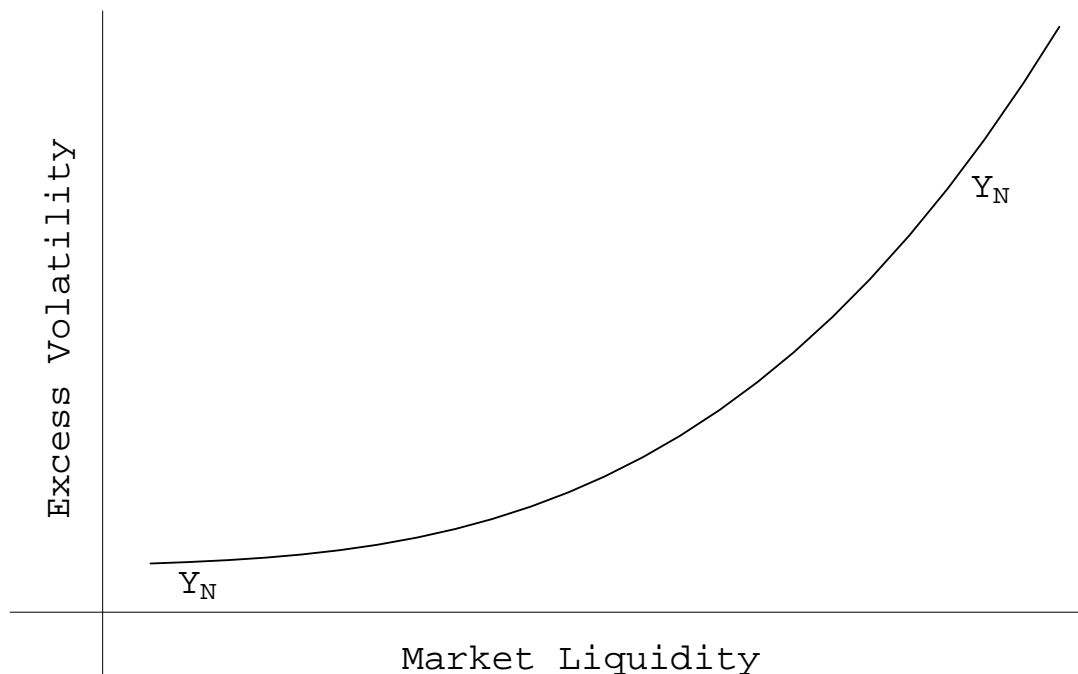
[13]See Bernstein (1999), page 136.

Figure 3.2: The Liquidity Effect under Misguidance.

fundamental market data (section 3.1).

In this subsection we allow for heterogeneous market participants with different expectations and forecasting techniques[14], bubbles due to herd behavior[15] and bandwagon effects[16], chaos[17] and externalities[18]. As we will see, this inefficient market microstructure combined with market liquidity misguides the price from its intrinsic value.

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[14]See for example Frankel/Froot (1990b).

[15]See therefore Banerjee (1992) and Shiller (1995).

[16]Examined in Cutler/Poterba/Summers (1990).

[17]See De Grauwe/Dewachter/Embrechts (1994).

[18]In Summers/Summers (1989), too much resources are wasted owing to rent seeking, and the behavior of noise-traders generate additional market risk as modelled in DeLong/Shleifer/Summers/Waldmann (1990).

Misguidance:

Misguidance is to be understood as inefficient market structure or market reaction. In contrast to section 3.1 the market does not find the market price according to its fundamental value. In the following, we concentrate on misguidance explained by the microstructure approach[19], although other approaches regarding political surprises, learning, and macroeconomic shocks and crises try to explain price movements in financial markets, too.[20]

One important finding of the microstructure approach is the distinction between two classes of market participants. The literature distinguishes between fundamentalists, who make up their price expectations on fundamental data, and chartists, who forecast by extrapolating recent trends through technical analysis.

According to our definition of market efficiency, fundamentalists do not contribute to excess volatility in contrast to chartists (often called "noise traders"), who exacerbate swings of the market price due to bandwagon effects. This not fully rational behavior and their noise-guided demand for risky assets in combination with limited arbitrage is examined in Shleifer/Summers (1990). The authors argue that this approach to financial markets explains more of asset price determination than the efficient market paradigm.

Another result from the literature is the assumption that the heterogeneity of expectations drives market volume or the frequency of transactions respectively. We conclude that in the presence of heterogenous participants liquidity is positively related to excess volatility. Also Frankel/Froot (1990a) suggest that the dispersion leads to volume of trading, and that market vol-

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[19]Königsmarck (2000) and Sarno/Taylor (2001) offer a good overview. See also Lyons (2001) and Frankel et al. (1996).

[20]See for example Garfinkel et al. (1999), Wuthe (2000) and Agenor/Montiel (1999).

ume exacerbates excess volatility.

Lux/Marchesi (2000) find out that outbreak of volatility occurs if the fraction of agents using chart techniques surpasses a certain threshold value.
In the often-cited paper of DeLong/Shleifer/Summers/Waldmann (1990) excess price volatility in the framework of heterogenous market participants increases with the fraction of noise traders[21].
Our conclusion is that excess volatility is positively associated with market liquidity and that the degree of misguidance generating excess volatility depends on the portion of noise traders N (see the graph $Y_N Y_N$ in figure 3.2). There may exist markets of similar liquidity, but one attracting more speculation than the other. This means that speculation explains more of the volume in the first market than in the second. The curve in figure 3.2 would lie above the other. This leads to the question, which kind of market participant dominates the market. Frankel/Froot (1990b) and Allen/Taylor (1990) report that mainly chart techniques are used to form expectations at short horizons, and fundamental analysis in the long run. Moreover, the predominance of chartists over fundamentalists is the reason for the occurrence of speculative bubbles.

The positive relation between volatility and volume on financial markets is documented by numerous researchers.[22] Bessembinder/Seguin (1993) examine the volatility-volume connection in future markets. They show that distinguishing between expected and unexpected components of the total market volume explains more of market volatility. Unexpected volume shocks

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[21]See page 711.

[22]For references see the introductions of the research papers named thereafter.

have a larger effect on price variability.

In contrast to Sarwar (2003), who suggests that information-based trading effects trading volume, Huang/Cai/Wang (2002) show that trading frequency is consistent with information-based trading. Using daily data of NASDAQ securities, Jones/Kaul/Lipson (1994) find that trading volume has no information content for price volatility. It is the number of transactions (frequency) that generates volatility. No matter whether it is more trading volume or trading frequency that drives volatility - since liquidity contains volume and frequency, we can delineate a positive relation between excess volatility and market liquidity. Figure 3.2 shows one possible graph.

3.3   The Total Effect

In section 3.1 we have motivated the negative relation between excess volatility and market liquidity under the assumption of an efficient market structure, where market participants are homogenous and behave rationally. The only limitation is that they don't know about the expectations of others. That is why it takes volume to move prices to its fundamental value, and liquidity enhances this approximation process. Section 3.2 deals with heterogenous market participants (fundamentalists and noise-traders). This dispersion not only generates high market volume but also misguides the asset price from its intrinsic value, dependent on the degree of heterogeneity. We argue that excess volatility must be negatively correlated with market liquidity.

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In the following analysis we assume that both effects overlap. A low volume level implies that there is no much dispersion between market participants or the asset is not interesting to speculate on. Thus, it is more the lack of market liquidity that exacerbates volatility, whereas at a high volume level the misguidance owing to speculative purposes dominates the effect on excess volatility. Our suggestion is that the total liquidity effect on excess volatility is the summation of the two single effects. The one under an efficient market structure exists always (benchmark), overlayed by the one according to misguidance.

The last depends on the degree of misguidance owing to the fraction of noise traders N. Figure 3.3 shows the vertical addition of the graphs in figure 3.1 and figure 3.2. What all volatility-liquidity curves have in common independent of the fraction of noise traders[23] is that they show an U-shape with an optimal liquidity, where excess volatility is minimized.

4   The Imposition of a Transactions Tax

Given the pattern of figure 3.3 we now want to analyze the effect of a transactions tax on market volume and excess volatility. One may argue like Kupiec (1996)[24] that a securities transactions tax decreases market liquidity, which is endogenously determined, however. But just suppressing the symptom (liquidity) and not the cause for market dysfunction can not be successive in dampening excess volatility.

This may be correct for a lump sum tax, which does not have any deterrent

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[23]Except for the case that N equals 0. But on most financial markets today heterogeneity and thus misguidance seems to be high.

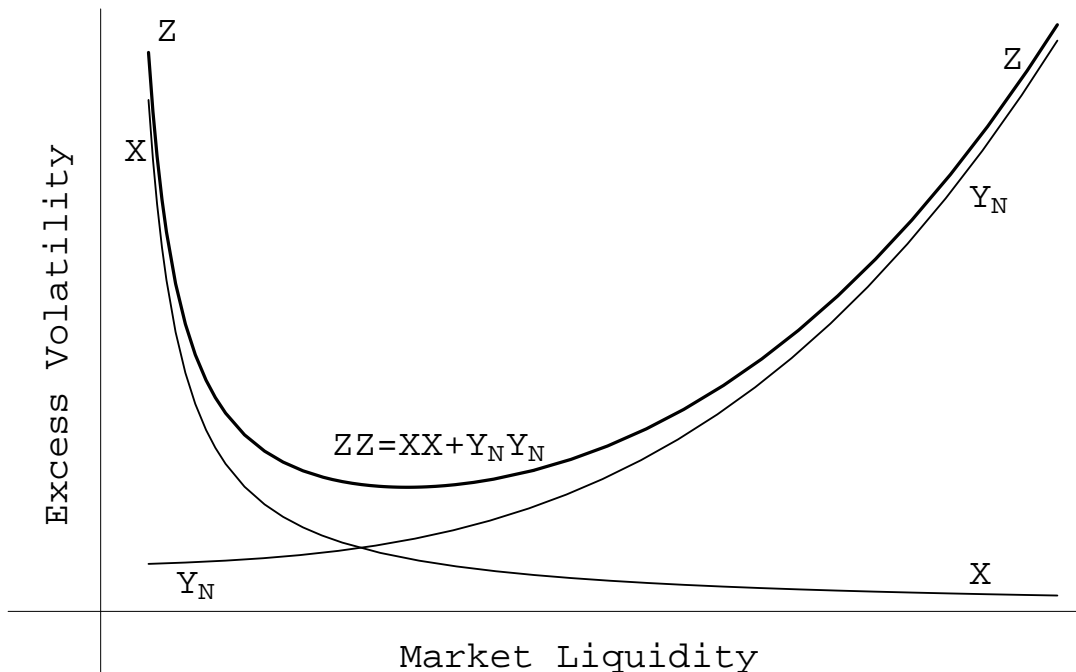[24]See therein the last paragraph on page 128.

Figure 3.3: The Total Effect (Z) as a Combination of the Two Effects.

or substitution effect. But an ad-valorem transactions tax does influence the behavior of market participants, since it generates a lock-in effect and punishes short-term investments, to which we will refer below. Thus, the tax does not exogenously lower market liquidity but diminishes endogenously incentives of (speculative) trading.

The aim of this paper is to provide some evidence that a transactions tax on highly speculative markets might lower excess volatility. On illiquid markets, however, the tax could generate a destabilizing effect. To yield an unambiguous tax effect we assume the pre-tax condition to the right of the minimum in figure 3.3. This assumption is supported by the literature mentioned in section 1, in which a transactions tax on markets with high (excess) trading volume is proposed. The authors do not claim less liquidity but excess

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trading and excess market liquidity that generate excess volatility. In different words, in these markets the liquidity effect under misguidance seems to dominate the effect under an efficient market structure.

The imposition of a securities transactions tax will have two effects, which we call volume effect and structural effect. The next three subsections deal on these issues with the result that for small rates a transactions tax mitigates excess volatility when trading volume is high.

4.1   The Volume Effect

A securities transactions tax at a positive rate reduces volume on international financial markets[25]. This effect is threefold:

First, it is the tax rate per se, which reduces market volume. But this effect will be very small, since reasonable tax rates are proposed between 0.1 per cent and 0.5 per cent. Moreover, this income effect has got more of the character of a lump sum tax and does not explain much of the excess volatility reduction.

Second, there appears the so-called lock-in effect. The imposition of a transactions tax will change investor's behavior in such a way that they will have less of an incentive to rebalance their portfolios when faced with new information influencing their expectations. Kupiec (1995) and Haberer (2003) show this volume-reducing effect. Kupiec concludes, that the lock-in effect

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[25]Despite an adjustment effect to new tax rates in the short-run as Haberer (2003) shows regarding portfolio choice.

reduces the information efficiency of financial market prices.

Third, an ad-valorem transactions tax discriminates against short-term investments. Frankel (1996) shows that the tax burden is inversely related to the holding period. Thus, short-term transactions become less profitable and - dependent on the tax rate and the holding period - many of them will not be carried out or transactions are done less frequent. By this disincentive, a transactions tax even at a very small rate can generate enormous reduction in market liquidity. Frankel (1996), Felix/Sau (1996) and Arestis/Sawyer (1998) assume that a transactions tax could reduce financial flows to 70 per cent or even 10 per cent, dependent on the tax rate up to 0.5 per cent.

All three effects reduce market volume or liquidity respectively and can be shown in figure 4.4 as a walk to the left from point P_1 to point P_2.

4.2 The Structural Effect

Beside its effect on market liquidity, a transactions tax might change the market microstructure. As already stated above, Frankel (1996) shows that the transactions tax discriminates against short-term investments. Frankel/Froot (1990b) and Allen/Taylor (1990) suggest that at short horizons market participants tend to use extrapolating forecast techniques, while in the long-run forecasts are based on fundamentals. Thus, a transactions tax will be more burdensome to chartists and therefore will crowd out destabilizing speculators.

As a result, more weight is put to stabilizing fundamentalists by the tax levy, making the market structure more efficient. The portion of noise traders in

the market shrinks (smaller N) mitigating the level of misguidance. Even Kupiec (1996), one of the critics of a securities transactions tax, suggests that such a tax might have the potential to reduce excess price volatility[26].

This is exactly what Westerhoff (2003) finds out. He examines the effect of a Tobin Tax when implied in a simulation model with chartists and fundamentalists on the foreign exchange market. He shows that the imposition of the tax first crowds out chartism, and therefore stabilizes the market. Palley (1999) detects some negative externality of noise traders on fundamentalists. He shows that a transactions tax can internalize this externality and thus makes the market structure more efficient. The effect of a transactions tax on speculative bubbles is examined by Menkhoff/Michaelis (1993). They find out that the tax has the potential to prevent bubbles from emerging, and makes the bubble burst earlier.

But one may argue that taxation affects all types of traders. Also stabilizing fundamentalists will be crowded out of the market, if tax rates are too high. The result would be a price disconnection from fundamental value. However, these misalignments will be small at low tax rates and increase with higher rates, because fundamentalists seem to trade less frequently (long horizon) than chartists (short horizon).

We conclude that for small tax rates the imposition of a transactions tax improves the market microstructure, so that for every given liquidity excess volatility is below the non tax case. The findings of Westerhoff (2003) support this assumption. "By imposing a small transactions tax, the prof-

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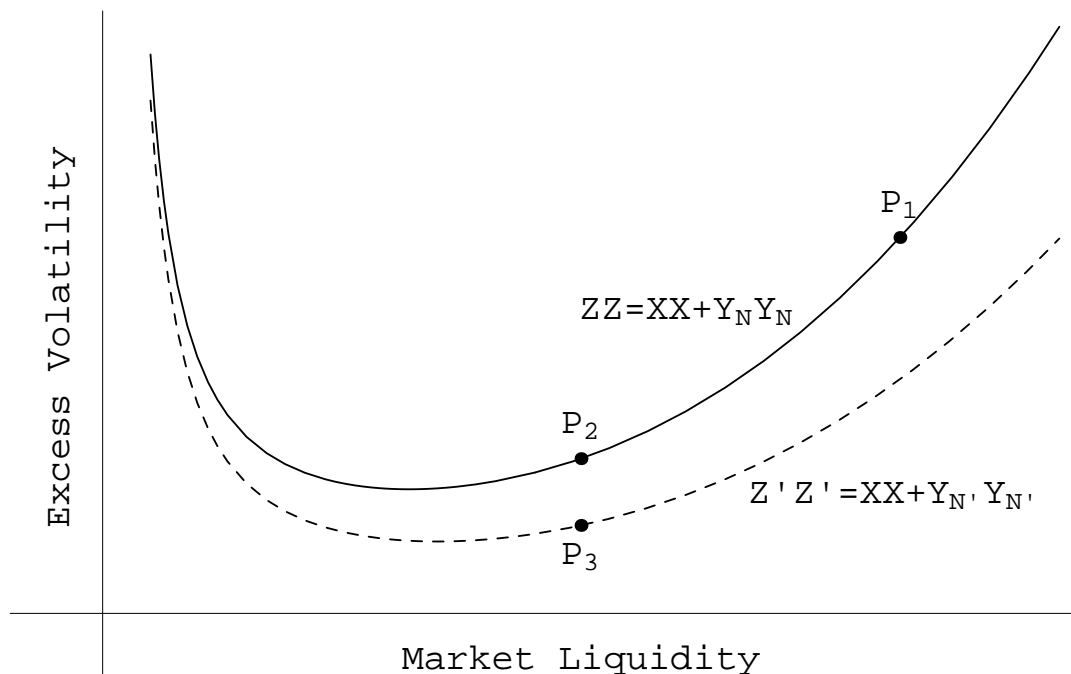[26]But he offers some evidence, that a transactions tax increases the return volatility.

Figure 4.4: The Imposition of a Transactions Tax.

itability of trading declines and speculators leave the market. [..] If the tax rate exceeds a critical value, deviations of exchange rates from fundamentals start to rise."[27] He shows that a tax below around 0.5 per cent improves the market structure by crowding out chartism more than fundamentalism. At higher tax rates misalignment increases. The structural effect is shown in figure 4.4 by a downward shift (broken line), represented by the move from point P_2 to point P_3 on the new curve $Z'Z'$.

4.3   The Total Tax Effect

The total tax effect consists of both, the volume effect and the structural effect. It can be shown as the move from point P_1 to point P_3 in figure 4.4.

[27]Westerhoff (2003), page 69.

Since in our example the volume effect reduces excess volatility and so does the structural effect, the overall effect is unambiguous. This holds for highly speculative markets with high trading volume and a small tax rate. However, illiquid markets (P_1 to the left of the minimum) run the risk of being more volatile after taxation. The same happens when a high tax rate makes the market illiquid. In both cases P_3 could lie above P_1, which means that a transactions tax might increase excess volatility.

5   Concluding Remarks

This paper offers some evidence from the literature that a securities transactions tax on international financial markets could lower excess market volatility, provided that taxed transactions take place in highly speculative markets with high trading volume and tax rates are small. Otherwise the tax levy might increase excess volatility.

First, we detect a liquidity effect. Liquidity under efficient market structure enhances the price adjustment to new fundamental equilibrium, thus negatively related to excess volatility. Second, under misguidance due to speculative noise-trading and chartism oriented on the short-horizon, liquidity aggravate market efficiency. We conclude that there must be an optimal liquidity, which minimizes excess volatility.

The imposition of a transactions tax generates two effects. The volume-reducing effect decreases excess volatility only when the pre-tax case is situated on the right hand side of the minimum. There is strong evidence that

the structural effect enhances the functioning of international financial markets, therefore reducing excess volatility as well. Then, the total tax effect is unambiguous.

To sum up the assumptions and conclusions we have made to derive these results:

- Liquidity enhances price adjustment when the market structure is efficient, and worsens price adjustment when herd behavior and bandwagon effects are prevalent.

- We assumed specific shapes of the two curves in figure 3.1 and figure 3.2, which meet the deduced requirements.

- The observed superefficient financial market suffers from excess trading volume (on the right hand side of the minimum).

- We analyze tax effects when tax rates are small (below 0.5 per cent).

- At small tax rates, positive structural effects caused by the crowding out of speculative and destabilizing market participants exceed misalignments due to price disconnection and crowding out of fundamental traders.

It seems to be true for many international financial markets that speculation generates excessive volume and excessive volatility. But there may be some illiquid non-speculative markets. Since a transactions tax is an instrument, which does not distinguish between assets of liquid and illiquid markets, the tax levy could increase excess volatility in some financial markets. Moreover, taxation generates a price distortion through a fall in the asset's price as agents discount the future tax liability associated with risky asset ownership (Kupiec 1995).

What our analysis does not examine is the efficiency according to all of Tobin's efficiency concepts and the costs of taxation. First, desirable foreign exchange transactions owing to international trade will be taxed, too. Second, the lock-in effect does not only lead to reduced market volume but also raises market risks, since portfolios are not fully adjusted to new circumstances. Moreover, the passing of unwanted positions from dealer to dealer following an initial customer foreign exchange order - the so-called hot potato trading - would face a high tax burden, since many transactions are executed. Reducing hot potato trading would raise market risks, too (Lyons 1997). Third, Kupiec (1996) finds that the return volatility might increase when a securities transactions tax is imposed.

In addition, our paper does not offer any evidence that a Tobin Tax on foreign exchange transactions is an effective instrument to mitigate the negative consequences of globalization.

Our argumentation is based on separate findings of the literature. In order to weigh up the effects, which are deduced in this work, one needs a general equilibrium model with heterogenous traders, dynamic adjustment, and transactions taxes. Further research would be finding such a model that incorporates these effects.

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