

Chapter 5: Reaction

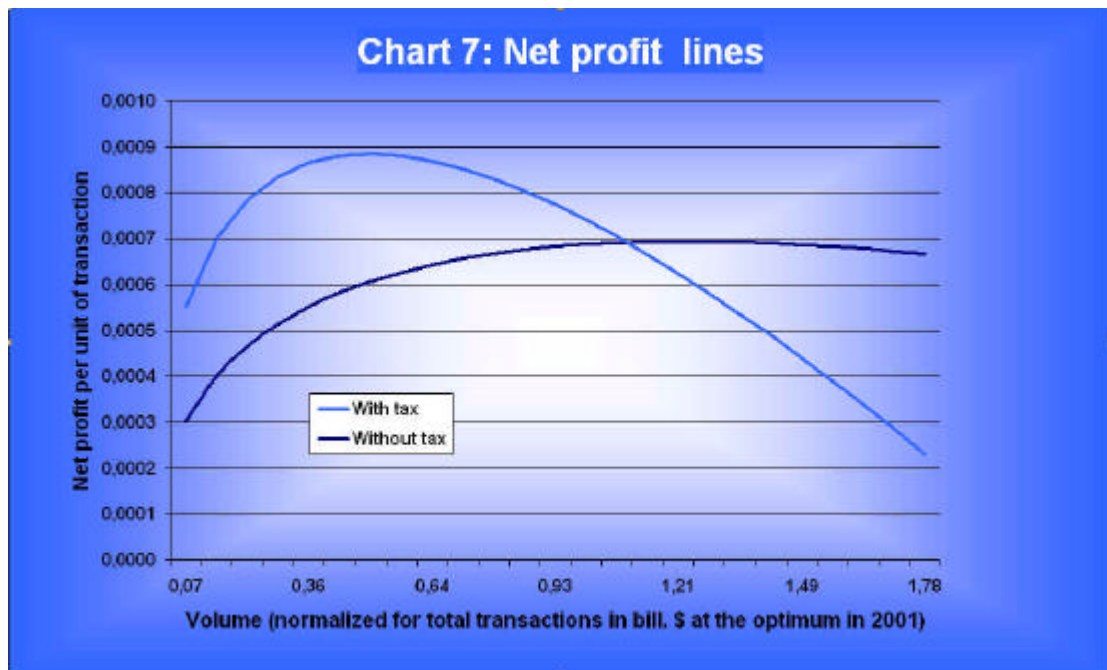
How could the PFTT affect market behavior?

In this concluding Chapter some considerations are given to the possible reactions of actors in foreign exchange markets in response to a PFTT. I shall also venture a rough estimate on the possible revenue of a PFTT.

► **Behavioral reactions.** It can be assumed that a PFTT would affect the various segments of the market in a very different way.

On the one hand there are the wholesalers whose costs have been falling dramatically as a consequence of technological developments, although they remain in fierce competition among each other at a global scale, and they rely on high transactions volumes to remain profitable in view of minute profit margins, despite of cost decreases.¹ A tax on foreign exchange transactions must increase the bid-ask spread of traders and reduce the volume of trading. At the same time the average maturity of foreign exchange transactions would increase in length. This is explained by a relatively strong decline of spot transactions relative to outright forwards. Both effects are intended by the PFTT.

¹ „A more controversial feature of the new shape of the financial system is that the bulk of its participants now have a vested interest in instability because the advent of high-technology dealing rooms has raised the level of fixed costs. High fixed costs imply that high turnover is needed for profitability. But high turnover tends to occur only when markets are volatile” (Walmsley, Julian (1988) *The New Financial Instruments: An Investor's Guide*. New York: John Wiley & Sons; quoted according to Felix and Sau (1996, p. 231).



The effects of a Tobin tax on net profits and trading volumes of wholesalers can be illustrated by a simple model calculation. This is represented in Chart 7.²

But there is also trade with various final customers: exporters and importers, direct investors or portfolio investors (such as hedge funds, investment funds, insurance companies) and other institutional investors. Also the government and central banks will take part as actors on foreign exchange markets. Finally, a small proportion of the trade is executed in re-

tail transactions through commercial banks or credit card companies for tourism or for cross-border transactions of private households.

In the ambit of final customers and in particular in the retail segment of the business traders operate with significant margins. These margins are the higher, the lower the volume of transactions, the lower the liquidity in the particular segment of the market, the less price-elastic local demand, and the higher the degree of information asymmetry that warrants some monopoly rents.

If the effect of the tax will be a widening of the spreads and a reduction of the volume in wholesale trading, as I would expect, this would affect different market participants in the following way (see also Felix and Sau 1996, p. 230ff.):

- ▶ At the „shortest end“ of the market, i.e. in particular for „covered-interest-rate arbitrage“, transactions costs have always created something like a “neutral zone” within which there are no profits from arbitrage and transactions will therefore not take place at all. This zone would undoubtedly be widened by the transactions tax.

² These calculations were made using the Model described in Appendix 2. For the present Chart, the following (not implausible, but freely chosen) parameters were used that do not have any empirical relevance: $a = 0.5$; $b = 0.95$; $g = 0.0005$; $t = 0.0001$. The Chart has been normalized in such a way that, for the maximum net profit margin before tax, the transactions volume for the year 2001 is reproduced (in bill. \$ per day). One could use the model to calculate the tax elasticity eventually, i.e. the reduction of the trading volume in response to the tax rate. For this set of parameters it would be 77 percent for one basis point. I think the tax elasticity to be significantly lower however (see below).

On the dollar-euro market, the neutral zone represents now some 10 to 15 “pips”, or roughly one basis point. A PFTT of one basis point would extend the neutral zone by two thirds to 100 percent. For that reason this type of trade would be hit particularly hard. Foreign currency traders would find it more difficult to pass on their “hot potatoes” onto other traders with a small risk once they have taken them up. If a customer insists on selling/buying foreign currency in spite of these increased costs, the trader will ask for a higher premium in compensation for the higher transaction risk. He/she will (have to) shift the tax burden to a large degree if he/she wants to continue operating profitably.

- ▶ This statement has to be put in perspective however. It must be reminded that transactions costs in foreign exchange trading have been falling significantly over the last years. Today the spreads in the dollar-euro market are in the order of one basis point; at the time of my first study in 1995 the usual margins were about 4-5 basis points. Even though the spread would be widened by 100 percent through a PFTT, it would still be at least 50 percent *below* the margins of six years ago. Then the daily transactions volume was roughly one billion US dollars—only 17 percent below the volume of the year 2001.³ This is an argument against the contention that even a small PFTT would wreak havoc in world financial markets, and the negative impact of the tax on the volume of liquidity trade appears to be utterly exaggerated.

³ The comparison of trading volumes across time is of course problematical in view of continuous structural changes in the market (consolidation, introduction of the euro, etc.).

- ▶ Also risky trading of currencies of developing countries will be affected by the tax. However in this market there are often no mature forward markets that would allow covered-interest parity trading. Therefore the risks are already higher in the primary trade than in the previous case, which is of course expressed through higher spreads. A uniform PFTT whose tax rate is tailored to the most liquid market (for instance one to two basis points) would then be a comparably small additional charge in relation to the already high margins of the primary business. It is unlikely to lead to a significant contraction of trade. The tax burden on developing countries is therefore *relatively small*. Of course the volume of trading in this market segment is almost insignificant in the global context of currency trading, albeit not necessarily for the respective countries themselves.
- ▶ Interestingly, a similar argument also applies to currency trading by the so-called hedge funds that engage in highly speculative and risky businesses. Because the risks of such trading at uncovered interest parity (i.e., the deliberate exposure to risks through “open positions”), typically even leveraged by borrowing, are extremely high, this market segment must operate with large margins. This is why a transactions tax with a relatively small rate adding to an already large neutral zone for trading is unlikely to exhibit deterring effects.

However Felix and Sau point to two side effects in this context that could eventually play a role:

First, a Tobin tax could contribute to lower volatility and therefore limit the scope of action for speculative trading by hedge funds. I personally doubt the validity of this argument because less liquid markets (as emphasized several

times before) are typically characterized by *higher volatility*.

Second, the authors argue that the central bank could use the greater freedom to act under the umbrella of a Tobin tax to *speculate against the hedge funds* and therefore reduce (or even eliminate) their profits. This argument is yet less convincing, even adventurous. Greater freedom to act of the central bank means primarily to be capable of concentrating on domestic policy objectives and to ignore the exchange rate. The more abstinent a central bank, the better it is for the stability of its currency. There are also cases (such as the speculation against the Bank of England in 1992) that demonstrate a central bank to be powerless against speculative hedge funds because an important instrument regularly used by hedge funds is problematical in her hands: the leverage effect through borrowing.

I fear that central banks that engaging in counter-speculation would drive the exchange rate from its intrinsic value over time. They would fall prey to depending on foreign debt more and more deeply, and would ultimately have to give in under market pressure anyway. Unfortunately the empirical evidence lends support to this thesis all too often (see also Appendix 3).

I interpret “freedom of central banks” primarily as having the option *to refrain from intervention* in foreign exchange markets, i.e. *not to act* in response to alien interference. Under no circumstances should it be interpreted as “freedom to counter-speculate”. The neutrality of central banks in foreign exchange trading is even a crucial if a shifting back of the Tobin tax onto the central is to be avoided, which would run counter the objective of the tax.

► **Who bears the tax?** It should be clear from the previous discussions that wholesalers are likely to shift a substantial part of the tax onto their

final customers (in order to secure profitability). As mentioned already before this would leverage the tax burden for this group of participants. Since final customers have only 13.3 percent of the market, a tax of one basis point would quickly be transformed into 7.5 basis points onto final customers (see page 40).

It is an open question to which extent such tax shifting will be successful however.

- Tax shifting is the easiest in retail trading because demand is relatively price-inelastic and locally limited, which allows certain monopoly rents.
- Tax shifting is easier for investors of smaller and medium-sized companies than for multinational firms. The latter possess a much stronger position toward foreign exchange traders given their higher trading volumes. Eventually multinational firms can even run own foreign exchange departments, which would intensify competition.
- Also institutional portfolio investors make a distinction as to their readiness to take on the tax burden.

For instance *insurance companies* take a very long-term perspective and they guide their behavior by institutional rules as to the composition of their portfolios (through “gatekeepers” mentioned above). Moreover the volume of transactions is comparably small in relation to their stock of assets, in contrast to other portfolio investors such as investment funds. This renders insurers more ready to take on the tax burden, especially as they can expect to shift the tax burden onto their clients over a long period of time.

In contrast, investment funds pursue a strategy that is much more short-term oriented because their

relative success is continuously being monitored against certain performance indicators. If an institute falls behind the average performance of the branch, it risks an increase of disbursements, i.e. these institutes have to be continuously solvent. Therefore they concentrate on securities that are short-term market favorites, and they rely on frequent changes in the composition of their portfolio. It also implies a frequent change of currencies.

If the change of securities denominated in different currencies is more costly through the tax than trading securities of one single currency, portfolio investors will focus on the latter and avoid foreign exchange trading as far as possible. It implies that shifting the tax burden onto this group of market participants is more difficult than for longer-term investors such as insurance companies.

But even within the investment fund branch there are significant differences. For instance those funds that specialize in securities of industrialized countries will have no difficulty to change their strategies, because there are deep and liquid markets within the respective currency areas that do not necessitate frequent changes in currency positions. This is less compelling for fund that specialize in securities of developing and emerging economies.

► **What could be the revenue of a PFTT?** It should have become clear from this study that any attempt to estimate the potential revenue of a PFTT is fraught with severe difficulties and risks. The process of consolidation of international foreign exchange trading is far from being completed, and further structural developments can be expected to take place in these markets (for instance the continuous

link settlement). Moreover it is not clear at which point the tax should be levied, at the trading desk or at payment. There are further complications through the recording of netting operations (in house, and bilaterally), and there are problems relating to the inclusion of foreign exchange operations by producer companies. This all renders it difficult to define the tax base.

Finally the possible reactions of market participants are all but clear. These will severely be affected by decisions as to the level of taxation, the tax rate, the tax base, and the dosage of the tariff when introducing the tax.

As I have argued before I plead for a very small tax rate in the range of one half to one basis point at both ends of a currency trade, but only on the “euro leg” that is settled through TARGET and corresponding clearing operations before settlement.⁴

A rough estimate on the basis of information by the BIS is given in Table 7. On the one hand it is likely to be on the safe side as far as the tax base is concerned because foreign exchange transactions by producing firms are not included. One can also expect the tax base to increase over time again once the consolidation of the financial industry has come to an end.

On the other hand it could be questioned whether the corrections necessary to cope with possible reactions of market participants have been assessed appropriately. There is of course no information on the price-

⁴ I have also argued that Switzerland would have to cooperate in collecting the tax. This does not necessarily imply the inclusion of the Swiss franc into tax obligation as long as it is traded against other currencies than euros. This is not without problems since the franc could then play an increasing role as a euro substitute, especially if the Swiss central bank pegs its currency to the euro. The same is true for pound sterling.

course no information on the price-elasticity of foreign exchange trading as a whole, let alone for market segments. It is also unclear whether the tax base is sufficiently protected against loopholes.

As a whole a PFTT with a tax rate of one basis point could eventually yield a yearly tax revenue of 16.6 bill. euros. This assumes that the tax to be paid at both ends of the trade, implying a tax of 2 basis points for whole-

salers. If one follows the method proposed by Kenen according to which the tax rate is 2 basis points for all transactions, and wholesalers would carry only half the rate, the yearly tax revenue could amount to 20.8 bill. euros. In this calculation I only count that part of the trade whose leg is settled in euros. Neither pound sterling nor the Swiss franc is included unless traded against euros.

Table 7: Rough estimates of the revenue of a PFTT

Daily values (except for the last two rows)	Total in bill. US \$	Euro leg in bill. US \$	Revenue in mill. US \$
Total turnover (in 2001 US dollars)	1,210.0		
Minus estimates by the BIS	-36.0		
Preliminary basis	1,174.0	440.0	
Non-taxed instruments	-20.0		
Contraction of trading volume	-173.1		
Total taxable trading volume	980.9	367.6	58.34
Trader-trader transactions	575.7	215.8	43.15
With other financial institutions	274.9	103.0	10.30
With non-financial institutions	130.3	48.9	4.89
Yearly amount in mill. US \$		91,907.2	14,585
Yearly amount in mill. euros	(Tax rate 1 basis point)		16,573
Yearly amount (alternative)	(Tax rate 2 basis points with half the rate for wholesalers)		20,800

► **Summary.** The introduction of a PFTT will provoke very different reactions by actors in foreign exchange markets.

Generally one may expect that the trading volume will decline, and the spreads will widen. But at a reasonable rate of one basis point the spreads for liquidity trading would still be lower than several years ago. Nevertheless the question is open as to who would finally carry the additional costs.

The strongest impact will undoubtedly be on arbitrage trading, but in this segment of the market the spreads are so low that the tax *must* be passed on to other sectors, i.e. the tax has to be carried by producing firms and households (private and public). To what extent this will occur is again an open question.

The proper speculators in the market, for instance hedge funds, are held back by the tax only little, because they operate with significantly larger margins than liquidity traders.

Of institutional investors, insurance companies are likely to carry a relatively higher tax burden, because of their lower turnover rotation and their longer-term perspective, than investment funds. Among the latter, those groups that specialize in trading securities of industrialized countries can avoid the tax more easily.

Cautious estimates of the potential revenue of a PFTT indicate that the tax could yield some annual 17 to 20 bill. euros with a tax rate of one basis point for the area of the European Union plus Switzerland. This estimate does not include transactions that are carried out in British pounds or Swiss francs against non-euro currencies.