

Currency Trade, Capital Flows and the Tobin Tax

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A year ago Finland's Ministry of Finance commissioned an expert group to evaluate the measures proposed to promote the stability and smooth functioning of international capital movements. The expert group submitted its report at the end of November 2000. The English version of the report was published in February 2001.¹⁾ This article draws on the analysis of the expert group, although the focus is much narrower.

The currency transfer tax – better known as the Tobin tax – is one of the proposed measures to promote the stability of international capital movements. On this proposal the expert group came to the conclusion that it would not meet the objectives set for it. The tax would not provide scope for monetary policy autonomy, or dampen exchange rate fluctuations in a floating exchange rate regime, or protect pegged currencies from speculative attacks. Nor would it generate significant revenue. The following is an attempt to explain why this is the case.

Currency Trade

The Bank for International Settlements (BIS) has been compiling data on the currency trade volumes of banks at three year intervals since 1989. The latest available data are from April 1998. According to these statistics, currency trade volumes at the time totalled USD 1,500 billion per day, the equivalent of USD 360,000 billion per year. This is an astronomical figure if compared to OECD gross domestic product or the value of world trade – not to mention the

OECD countries' official development aid. By contrast, the figure is not especially large if compared to the flow of payments through the U.S. Federal Reserve or the European Central Bank gross payment systems (see table below).

Currency Trade Volumes and Comparison Figures in April 1998

Currency trade	USD	1 500 bill./day
	USD	360 000 bill./year
<i>In comparison with</i>		
OECD GDP	USD	25 000 bill./year
World trade	USD	7 500 bill./year
OECD countries' development aid	USD	55 bill./year
<i>Gross payment flows</i>		
US Fedwire	USD	2 000 bill./day
ECB Target	EUR	1 200 bill./day
- of which cross-border payments	EUR	500 bill./day

The latter comparison is justified because inter-bank currency markets are a significant component of the global payments infrastructure, which comprises numerous convertible currencies

Table on the next page shows the distribution of daily currency trade flows by trading counterparty and transaction type. Spot transactions

¹⁾ Berglund, T., S. Honkapohja, A. Mikkola and A. Suvanto, *Promoting the stability of international capital movements*. Ministry of Finance Research Reports 1/2001. Helsinki 2001.

Daily Currency Trade Volumes, Counterparts and Maturities in April 1998

	USD billion	%
Spot transactions	578	100
- other dealers	347	60
- other financial institutions	121	21
- other customers	110	19
Forward transactions*	864	100
- other dealers	562	65
- other financial institutions	155	18
- other customers	147	17
Total	1 442	100
<i>Maturities</i>		
- spot	578	40
- 7 days or less	596	41
- over 7 days - 1 year	252	18
- more than 1 year	16	1

* Includes outright forwards and currency swaps.

Source: BIS, *Central Bank Survey of Foreign Exchange and Derivatives Market Activity 1998*, Basle, May 1999. Table E-1.

account for 40 % of daily trade volumes. The settlement time for spot transactions is two banking days. The forward transactions in the table cover both outright forwards and currency swaps. In outright forwards, currency is exchanged at a specified future date at a price agreed upon today. Currency swaps combine a spot transaction and its reversal at a future date at a price agreed upon today. The maturity of forward agreements is also usually very short.

The combination of huge volumes and short maturities in currency trading have resulted in much admiration and fear, and in this way also in numerous misunderstandings. Below are two citations, variations of which one repeatedly discovers in newspaper articles and web sites:

"The world sees USD 1,500 billion of currency trades every day. Of these, 80 per cent are less-than-one-week investments." (Helsingin Sanomat 13.5.2001)

"Big investors, with huge sums at their disposal, can make enormous daily profits by anticipating marginal fluctuations in foreign exchange rates. According to the Bank for International Settlements, 80 per cent of currency transactions have a maturity of less than one week." (www.kepa.fi)

The first sentence of the first citation is more or less correct – although the daily trading volume of USD 1,500 billion refers to currency trade conducted by banks in April 1998. The total volume of currency trade is even larger. But the second sentence, as well as the second citation in full, is based on a gross misunderstanding. The mistake is in identifying capital flows with the turnover in the currency market.

When a Finnish company buys dollars to pay, e.g. for a 0.5 million dollar import transaction, it is a payment and not an investment. When a bank acquires the currency needed by the company from the interbank markets, another spot transaction occurs, but this is not an investment either. Correspondingly, when the very same company at another time sells its export earnings to the bank, the bank buys the currency not for investment purposes but to re-sell it as soon as possible. If it cannot find another non-bank customer, the bank sells the currency to another bank in order to unload its foreign currency risk. And when the purchasing bank covers its position in turn, a whole chain reaction of transactions is initiated – none of which represent a short-term investment, even though the maturity of these spot transactions is two days.²⁾

When companies engaging in foreign trade seek to avoid foreign exchange risks, they must, regardless of the situation, repeatedly return to the forward currency markets, make currency swaps, take foreign currency denominated short-term loans or place their foreign currency receivables in short-term foreign currency denominated financial instruments. When a Finnish company buys foreign exchange with a one month currency forward to cover the for-

²⁾ The microtheory of currency trade is discussed in Suvanto, A., *Foreign Exchange Dealing. Essays on the Microstructure of the Foreign Exchange Market*. Helsinki: ETLA A19, 1993.

eign exchange risk of an import payment due in one month's time, in all likelihood the bank will cover its risk by buying the currency spot and then investing this sum in another bank. This is a short-term investment, but it has nothing to do with foreign exchange speculation or speculative short-term capital flows. When banks cover their own positions in the interbank markets, the volume of transactions created is high in relation to foreign trade payments.

The vast majority of currency trade takes place among banks. Less than 20 per cent is conducted between banks and institutions outside the financial sector. The main reason for this is that banks have very low transaction costs. In terms of the spread between buy and sell rates, currency trade transaction costs in the main currencies are only in the vicinity of a few-hundredths of a percent. Such low transaction costs make it cheap for banks to cover their positions in the interbank markets, and that is why one currency transaction usually initiates a whole chain of similar transactions. The volume of transactions is increased also by the US dollar's role as a vehicle currency. This means

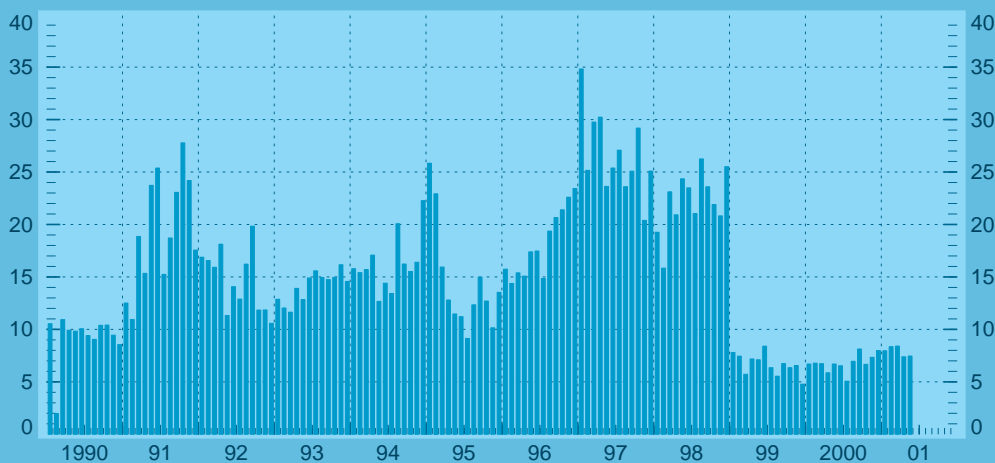
that banks acquire the currency needed by the customer by first buying dollars and then using the dollars to buy the required currency.

Surely such low transaction costs also increase the kind of trading that does not directly involve the management of foreign currency risk. Banks request prices from each other and trade only in order to keep up with the others' quotations. Banks can build positions during the course of a day while they wait for some significant news and try to guess its immediate effect on exchange rates. And when this risk is restricted with currency options, the volume of transactions is further increased. To my knowledge, no dealer or investor has been able to systematically "make enormous daily profits by anticipating marginal fluctuations in foreign exchange rates" on such very short-term position taking.

Currency Trade by Finnish Banks

The currency trade volume of Finnish banks today totals more than EUR 1 billion (FIM 6-7 billion) every day (see figure below). In 1998, before the switch to the euro, the volume was three to four times greater, i.e. about FIM 20-25

Currency trading by Finnish banks in Finnish markkas/euros



ETLA S01.3/f32

billion per day, over FIM 5,000 billion per year or 7 times the value of GDP. Yet nobody claims that 1998 was financially unstable or that short-term speculative financial flows would have hurt the economy. During that very same year, the Bank of Finland's real-time gross payments system handled payments flows of FIM 40-50 billion each day. Although the volume of banks' domestic customer payments was small in comparison, about FIM 5 billion a day, even this is more than twice the value of GDP on an annual level. Currency trade and domestic payments have no direct connection with speculative activity.

In the 1990s, until the arrival of the euro, currency trade volumes grew rapidly also in Finland. Figure on previous page reveals several months during which daily volumes were especially high. For example, peaks were reached in November 1991 and in September 1992, when the Finnish markka was under heavy attack. The soaring volumes in those months is to a great extent explained by the fact that the Bank of Finland undertook extensive foreign exchange sales to protect the currency. In January 1997, the situation was reversed. During that month the Bank of Finland bought vast quantities of foreign exchange to inhibit the excessive appreciation of the Finnish markka. But there are other peaks as well, entirely unconnected to any kind of tensions in the currency market.

Currency Transfer Tax

A currency transfer tax is a small proportional tax levied on all foreign exchange transactions. If operational, it would therefore be similar to the stamp tax incurred in share trading. The currency transfer tax is usually referred to as the Tobin tax, after James Tobin, the American economist who first introduced the notion in the early 1970s.

The popularity of the Tobin tax is based on two factors. First, if 80 per cent of currency trade is viewed as speculative investment activity, then it is considered to be good to tax such harmful behaviour. Second, because currency trade volumes are considered to be exorbitantly high, it is believed that the tax can reap significant returns that can then be used to fight global concerns. Identifying such untapped tax potential is a favourite pastime of politicians, especially

when it can be targeted at others than the country's own citizens.

Tobin first argued such a tax could be useful in order to guarantee some autonomy for national economic policy and to reduce exchange rate volatility. Such emphasis is understandable because it dates to the beginning of the 1970s – when the Bretton Woods system had collapsed and the main currencies had switched to the float. It was really only after the experiences of the 1990s – e.g. the ERM and the Southeast Asian crises – that crisis prevention, or at least the reduction of the likelihood of its occurrence, became a justification for the Tobin tax. Tax revenue to fight global concerns became the fourth justification.

Further arguments in favour of the tax have recently been made. For new citizens' movements, most notably ATTAC (*Association pour une Taxe sur les Transactions financières pour l'Aide aux Citoyens*), the tax has emerged as a symbol in opposition to the free movement of capital and the power of financial markets in general. The citizens' movements see the Tobin tax as a solution to the difficulties faced by the developing world. This is somewhat surprising because the share of developing countries in world currency trade is insignificant and also because most capital flows are between developed countries.

The Effect of the Tax on the Rate of Return and the Cost of Borrowing

The currency transfer tax would lower the return on foreign currency denominated investments and increase the costs of foreign currency denominated loans. The effect increases as the duration of the investment or loan in question shortens. For example, a one per cent tax would increase the cost of a one year foreign currency denominated loan by two per cent; the tax would first be paid when the loan was taken out and then again when it was paid back. The same one per cent tax would increase the cost of a one month loan by 27 per cent per annum. This means that a one year foreign investment would have to yield two per cent more than a domestic one. Correspondingly, a one month foreign investment would have to earn 27 per cent more than a domestic one before it would become profitable. In this way, though the tax would effectively destroy

any incentive for short-term foreign exchange denominated investments or loans, it would not have such a great impact on the costs of long-term investments or loans. The effect on five year investments would be barely one-half of a percentage point. Even at low tax percentages, the effects would be high in terms of annual rates. A 0.25 percent tax, for example, would raise the cost of a one month foreign currency denominated loan by 6 per cent. It would increase the required return on investment by the same amount.

The above examples also indicate that domestic interest rates at the very shortest end of the yield curve could fluctuate rather freely without resulting in capital flows. This would improve, it is claimed, the scope for independent interest rate policy. Such an autonomy of interest rate policy would not, however, extend to longer-term rates.

Similar calculations can also be used to show that even a one per cent tax will be meaningless if the exchange rate is expected with high probability to move in a certain direction by two per cent within a short period of time. If faith in the ability of the authorities to maintain the currency is lost, even a high tax will not protect the currency from speculative attack. An attack would occur if the expected exchange rate movement, multiplied by its probability, were greater than twice the tax percentage. The tax would not have hindered attacks during the Finnish, U.K., Italian or Southeast Asian currency crises. Still, the tax might inhibit the testing of the determination of the authorities to defend the currency in situations where the expected change and the probability are small to begin with. Such testing did occur against the French, Belgian and Danish currencies in connection with the ERM crisis.³⁾

The Role of the Exchange Rate Regime

At least in theory, the currency transfer tax would provide a degree of independence to interest rate policy in situations where the fixed exchange rate is fully credible. But this room for manoeuvre would only apply to the very

shortest end of the interest rate curve. From the perspective of monetary policy, such autonomy would be worthless. The central bank would not, for example, be able to set its own inflation rate target. Under a credible fixed exchange rate regime the tax would not be needed to combat speculative attacks, because none would arise.

The attempt to use the autonomy brought about by the tax for an independent goal would destroy the credibility of the currency, and the possibility of an attack on the currency would return. When the credibility of the currency is weak, the independence of monetary policy disappears because it must be used to defend the currency. The tax would not change this situation. Citizens always pay for lack of credibility in terms of higher interest rates. The short-end interest rate policy independence made possible by the tax would not alter this fact, as the tension between monetary policy and exchange rate goals would only tighten, and in this way even lure people to speculate against the currency.

In a world of floating rates interest rate policy independence exists without the tax. The central bank can also set its own inflation target and, in addition, monetary policy can be used to support other economic aims, e.g. stable economic growth. The autonomy of monetary policy is therefore secured on a broader scale. Though it is true that there would be greater leeway in interest rate policy with the tax, also under floating rates, it would only result in disturbances and noise in the yield curve. Under floating rates, the tax would be unnecessary also in combating speculative attacks, because they would not occur. If expectations turn against a currency under floating rates, the currency depreciates at once, which does not necessarily require a single currency transaction.

A certain degree of exchange rate volatility is inescapable in the floating exchange rate regime. This volatility, however, has not increased at all since the early 1970s, even though world trade, capital flows and currency trade volumes have soared. Most likely, introducing the currency transfer tax under floating rates would

³⁾ A comprehensive discussion of different types of currency crises is found in Lauri Kajanoja's Ph.D. dissertation, Kajanoja, L. *Essays on Currency Crises and Exchange Rate Expectations*. University of Helsinki, Department of Economics, Research Report No. 88:2001.

increase rather than decrease short-term currency fluctuations because of the lower liquidity of the market.

As floating rates inevitably involve a degree of exchange rate uncertainty, it follows that there is a need for protection from currency risk. Hedging implies that there will be many more currency transactions than what are directly required for foreign trade payments. Let us assume that a Finnish company needs to pay USD 0.5 million for imported components this week and that it also knows it will receive the same sum from an export delivery the following week. In such a case, the company should remove the currency risk with a one week currency loan. If the tax amounted to 1 %, the risk covering operation could cost the company up to EUR 10,000 in extra expenses. This is equivalent to the monthly labour cost of three workers. In terms of annual interest rates, the additional expense would be 180 per cent. The cost of covering one's position would be great even at lower tax rates. In the transaction above, a 0.25 per cent tax would cost an additional EUR 2,500.

Many variations exist between the worlds of purely fixed or purely floating exchange rates. Many countries, including Finland, have resorted to a currency band, i.e. a pre-determined central rate and a fluctuation range. Other countries, such as Poland, have established a crawling peg and permitted fluctuation zones around the pegs. At best such arrangements allow a degree of monetary policy flexibility, in that short-term exchange rate movements can be dampened and that domestic interest rates can be influenced to some extent. This flexibility and limited autonomy is quickly lost, however, if faith in the ability of economic policy to operate in line with the exchange rate target is lost. Then even these systems will be vulnerable to speculative attacks.

An alternative version to the Tobin tax has been presented in the literature. Paul Berndt Spahn formulated in the mid-1990s a model of a two-tiered Tobin tax.⁴⁾ This model combines a currency transfer tax and a target zone, i.e. a new exchange rate regime. A target for the cur-

rency could be established, for example, on the basis of observed inflation differentials and the target zone could be defined by setting a permitted fluctuation zone around this target. The main idea behind the model is that currency transactions would incur a very low tax rate when the exchange rate is inside the target area and that it could become very high once the exchange rate goes above or below the target zone.

This model is problematic in many respects. First, even a small tax would reduce the liquidity of currency markets because transaction costs are already extremely low, especially in interbank trading. Second, the resort to high taxes at the borders of the target zone might end currency trade instantly. The approach of the exchange rate to the border would be a signal that there have been more buyers of foreign currency (against domestic currency) than there have been sellers. How would a tax attract the missing supply? Is it assumed that the central bank would interfere by selling currency? If so, then the system would be akin to a fixed exchange rate regime in which there is no longer credibility in the parity, and the situation would be ripe for speculative attacks. Third, determining the target zone is by no means unproblematic. How can a global target zone be established for all currencies? Which country's currency and monetary policy would be the anchor of the system? In the present situation it seems that the only anchor could be the U.S. dollar.

Tax Revenue

Estimating potential returns from a currency transfer tax requires that one knows or can estimate the tax base, i.e. the currency trade volumes, and the tax rate. With respect to the tax base, one must know or estimate the reaction of transaction volumes to increases in transaction costs (price elasticity) as well as transaction costs before the tax. One also needs to know the possibilities for tax evasion.

Transaction costs are very low. They can be measured by comparing the differential between currency buy and sell quotations. This is

⁴⁾ See, Spahn, P.B., "International Financial Flows and Transaction taxes: Survey and Options". IMF Working Paper W/P/95/60, and a shorter version, Spahn, P.B., "The Tobin Tax and the Exchange Rate Stability". *Finance & Development*, June 1996.

very low in trade between banks, a few hundredths of a percentage point. The low transaction costs explain the huge currency trade volumes and why most trade occurs between banks. The differential is slightly higher in trade between other customers and banks.

No statistical estimates of the elasticity of transaction volumes to transaction costs are available. Related evidence is available from the stock markets, however. There the elasticity is significant.⁵⁾ General observations that currency trade tends to fall significantly after higher spreads between buy and sell rates due to temporary increases in uncertainty also indicate that the elasticity is very high. A higher spread between buy and sell rates amounts to a fall in liquidity, and therefore also lower trading volumes. In the extreme case, the markets dry up completely, i.e. neither side offers a supply to meet the other's demand.

Tax evasion does not refer to tax havens only. Large multinational corporations can shift to the use of just one currency, in which case they no longer need to resort to the currency markets.

Hypothetical calculations of tax incomes following various combinations of tax rates, transaction costs and elasticities show that the tax return is unlikely to be large. For example, if one assumes that transaction costs are the current ones, that the price elasticity in interbank currency trading is > 1 , that the price elasticity in currency trading between customers and banks is < 1 , and that there is a 1 per cent tax, the report calculates a total of USD 70 billion tax income per annum.⁶⁾ This calculation does not account for a rise in transaction costs outside the banking sector before tax caused by lower liquidity in interbank trade. It also does not account for the shift of currency trade to tax havens. If these are included, the tax income is much lower. Though a higher tax rate would generate more tax income, it would be targeted primarily at retail customers because interbank trade would practically disappear. The tax would therefore be regressive.

Conclusions

The currency transfer tax would not meet the objectives set for it. The tax would not provide scope for monetary policy autonomy, or dampen exchange rate fluctuations in the floating exchange rate regime, or protect pegged currencies from speculative attacks. Nor would it generate significant revenue.

As the tax would not achieve its objectives, discussions about the implementation of the tax in practice or about political realism are of secondary value. Concerning the latter, one can refer to the experience of the EU countries.

The minimum harmonisation of interest income taxation has been on the drawing board for 15 years, and still no results have been achieved. At the same time, however, it has been possible to plan, decide upon and implement a single currency for the EU.

Do any alternatives exist, then, for strengthening the international monetary system and the reduction of instability in international capital movements?

One alternative would be to switch to a single world currency. This seems unrealistic and, probably, undesirable. Even if it could be achieved, it would by no means remove instability in capital flows nor the possibility of financial crises – capital can always cross borders even if there is only a single currency.

Another alternative would be to return to a direct controls of capital flows. It would return autonomy to economic policy, but it could not be implemented without simultaneously interfering with free trade. Free trade is not necessarily a sacred thing, but the resulting contraction in world trade would inevitably also lead to global contraction of economic activity, which is something nobody wants.

The remaining measures are reformistic and partial in scope. Their implementation takes time and their effects are slow to surface. This kind of work is in progress on many fronts and some effects have already become visible. The transparency of the International Monetary

⁵⁾ Swan, P.L. and J. Westerholm, "The Impact of Transaction Costs on Turnover and Asset Prices: The Cases of Sweden's and Finland's Security Transaction Tax Reductions". The Helsinki Swedish School of Economics and Business Administration, 2001 (mimeo).

⁶⁾ See Berglund, et. Al, *ibid.*, pp. 47-50.

Fund has increased. Policy discussions have already addressed conditionality and private sector participation. The capital adequacy requirements of financial institutions are being reformulated, with the intention of improving risk assessment, strengthening surveillance and improving market discipline. The possibilities for transatlantic co-operation to limit capital flows related to tax evasion have improved. The OECD has undertaken substantial measures to deter money laundering and the prohibition of bribery. In this connection, the EU should be

quick to ratify the recommendations of the Lamfalussy Group for the integration of the European financial markets (simultaneously improving surveillance) and for progress in the harmonisation of capital income taxation. The Financial Stability Forum has initiated projects for the establishment of standards for the financial markets and the identification of good practices. The G20, which also includes a group of developing countries, is also undergoing discussion on how to improve the stability of the international financial system.