A NEW PROPOSITION FOR THE TOBIN TAX

A report
by Sony Kapoor for
The Tobin Tax Network
July 2004

The Currency Transaction Tax

enhancing financial stability and financing development

produced with support from The Co-operative Bank
Customer led, ethically guided

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Foreword

The Tobin Tax

The idea of taxing the trade in currencies was first suggested by Nobel prize-winning economist, James Tobin. This is why the currency transaction tax (CTT) is often referred to as the *Tobin Tax*. Today's CTT proposition is for a variable tax with two different rates. A very low rate used in normal market conditions that would generate substantial revenues for international development and a very high rate employed at times of exceptional volatility to prevent financial shocks and create greater economic stability.

A few weeks ago Belgian parliamentarians made a historic vote in their Assembly when they passed legislation for a currency transaction tax (CTT).

More than 30 years since James Tobin first proposed the concept of taxing the currency trade, the tax that popularly bears his name is now widely known by politicians, financial journalists and millions of people across the world. Yet it has taken until this time to be expressed in such a form that is both technically feasible and politically acceptable. This is the breakthrough the Belgian legislation represents. The purpose of this report is to detail how the present CTT proposition is not only possible but eminently desirable. From the world's poorest communities, who would benefit from the revenue it can generate, to the world's business community, who would benefit from far greater market stability, it is clear that the advantages of a CTT are so considerable that failure to make progress along this road would be very costly.

We have designed this report to be easily accessible to various audiences. The main body is comprised of very concise chapters. If a reader would like to go deeper into the background of the conclusions, they will find more detailed research and analysis presented in the appendices. The report also contains a comprehensive 'frequently asked questions' section and a glossary.

Since James Tobin first presented his tax on currency trading, the market in foreign exchange has expanded one hundred times. It is not surprising, therefore, that his original concept has been seriously modernised to fit with today's market conditions. In this respect, we acknowledge the important work of German economist Paul Bernd Spahn, who developed the idea of a two-tier Tobin Tax that lies at the heart of our CTT proposition. Our report builds on the foundations laid by Spahn, improving certain aspects by drawing on the expertise of academics and finance professionals.

James Tobin's great idea was to tax the trade in currencies. We believe that with this report we can show how a modern version of his concept is now not only possible but makes absolute sense in order to create a more stable financial environment for business, for trade, for employment and to generate urgently needed revenue to benefit the world's poor.

About the Tobin Tax Network

The Tobin Tax Network is a coalition of more than 50 charities, campaign agencies, faith groups and trade unions set up at the end of 2001 to campaign for the currency transaction tax. The combined memberships of all these organisations number many millions of UK citizens.

Executive summary

How is the market organised?

The currency market is the largest market in the world, with a turnover of US$300,000 billion every year. It is loosely regulated and, despite its size, is highly concentrated. Most of the trading is carried out by about 30 large banks trading mostly G7 currencies in eight major locations.

How are exchange rates determined?

The price at which one currency can be exchanged for another is not constant but varies in response to changes in inflation, interest rates, unemployment and other economic factors. It is also influenced by other factors, such as speculation and market psychology, which affect the supply and demand for a currency.

Surveys[1] of currency traders show that economic fundamentals are relatively unimportant in trading decisions up to a six-month horizon. Since more than 90% of market transactions have a time horizon shorter than six months, it follows that most currency trading decisions do not reflect the true underlying economic value. As a consequence, exchange rates do not reflect the true relative strengths of economies and can lead to bad investment decisions. More than 75% of currency traders believe that speculation is the single most important reason why currency values do not reflect economic fundamentals.

What is currency volatility?

Though major economic variables change relatively infrequently, it is common for exchange rates to change up to 100,000 times in a single day.[2] While most of these changes are small, they can sometimes add up to as much as 20% or more over the span of weeks or even days.

Currency volatility is a measure of this change in the price of a currency. The larger and the more frequent the fluctuations in the exchange rate, the higher the currency volatility. When this volatility is very high, involving several large changes in prices, it causes instability in the financial system.

How does currency volatility affect us?

Financial instability is one of the most serious problems currently confronting the world. High volatility in financial markets, even when it does not lead to spectacular crashes of the kind seen in South East Asia in 1997–8,[3] carries high social and economic costs. It acts as a tax on trade, investment, social welfare and growth and can undo in days what has taken years of development effort to achieve.

Currency instability is by far the most pernicious form of financial volatility because of the severity of its impact. While excessive volatility in the stock or the bond markets is harmful, damage is limited to certain sectors of an economy and the people associated with those sectors. Instability in the currency markets, on the other hand, affects all aspects of the economy and can have disastrous effects on millions of people.

1 From surveys of currency traders by Cheung et al, 2000; Cheung Y and Chinn MD, 2000; Hutcheson T, 2000. See Appendix IV

2 Bloomberg

3 See www.ids.ac.uk/ids/global/Finance/easia.html

How does currency volatility come about?

Currency instability does not arise because of the actions of 'evil speculators' but is a natural outcome of the incentive structure built into the market. The actions of a limited number of currency traders just doing their jobs can inflict damage to whole economies and have ruinous consequences for their populations.

What can we do to reduce currency volatility?

When the actions of a few can affect the welfare of many, there is a strong justification for public policy intervention. However, there are many who believe that 'markets know best'. There is a way of striking a compromise between the two beliefs, using a market-based solution. The currency transaction tax changes the incentive structure in the market and works by discouraging instability-causing behaviour amongst currency traders.

While there have been various proposals for a tax in the past, they have either been impractical or incomplete. Both by building on the work done by others and using our own original research, we have proposed a comprehensive, pragmatic and feasible version of a currency transaction tax that would stabilise the currency markets. It would also reduce the occurrence of the kind of currency crashes that were seen in South East Asia, Mexico, Russia and Brazil.

What is our currency transaction tax (CTT) proposal?

Our proposal for a CTT is a market-based mechanism which, by changing the incentive structure in the market, helps discourage excessive speculation and encourages traders to give greater importance to economic fundamentals. It comprises a very small (0.005%) tax that will be levied on all exchange transactions in a particular currency and a higher variable tax that will apply only in highly volatile markets and act as a circuit breaker to stabilise markets.

This is a 'mainstream' proposal that combines two distinct instruments – security transaction taxes and circuit breakers – both of which are widely used in financial markets the world over. Security transaction taxes are currently in operation in many countries such as the United Kingdom, the United States, France and Belgium. Circuit breakers of various kinds such as trading halts or price limits are in existence in most major stock exchanges in the world, including the New York Stock Exchange.

Our proposal is unique in the sense that it not only successfully addresses the criticisms levelled against previous CTT proposals, but also takes on board concerns expressed by both the financial and the political community. It is for this reason that we advocate a very low tax rate that the financial markets can easily afford to bear.

What would it achieve?

Our version of the CTT is expected to mobilise net revenue of $15 billion without disrupting the current structure of the market. This revenue can be used for urgently needed international development programmes. All UN countries have signed up to the Millennium Development Goals (MDGs) to halve world poverty by 2015 – however, it is widely acknowledged, by HM Treasury amongst others, that there are presently insufficient funds to pay for them. This report

shows that our proposition for a CTT would deliver a realistic, sustainable and powerful income stream.

The CTT would also reduce both the volatility in currency markets as well as the likelihood of the occurrence of currency crashes. This reduction in volatility would be extremely beneficial for the global economy, with both international trade flows and foreign direct investment (FDI) expected to increase significantly. In addition, a reduction in the occurrence of financial shocks such as currency crashes would also help the global economy pursue a path of higher growth. Developing countries, in particular, stand to benefit from higher trade and FDI flows.

How would a currency transaction tax work?

The CTT can be implemented unilaterally by any country and will apply to all foreign exchange transactions that involve its currency. This is possible, as a currency has no meaning outside the jurisdiction of the central bank that issues that currency. Even offshore US dollar deposits, for example, are eventually held as '*nostro*' accounts by US banks in the United States. So if a country signs up to a CTT, the central bank of the country is in a position to effectively oversee compliance with the tax regime.

We suggest that all currency transactions be subject to the CTT – since trade and investment flows account for only a very small proportion of the total currency trading, they would not bear most of the cost of the tax. The incidence of the tax would fall mainly on large banks, where currency trading profits account for 5%–10% of the total profits. Evasion would be expensive and carry the risk of loss of reputation. With the tax rate as small as 0.005%, the low cost of compliance would not justify the risks and costs associated with evasion.

The CTT can be collected at the point of settlement, either through the Continuous Linked Settlement system or through a country's gross payment settlement system that is overseen by the central bank or the finance ministry.

While it is possible that derivatives instruments may be used to try and evade the tax, this is not feasible on a large scale, as the derivative market can not effectively operate in isolation. Transactions in the derivatives market would show up in the settlement system in one form or another.

What specific benefits would accrue from the introduction of a CTT?

The CTT creates a directly quantifiable benefit in the form of a powerful income stream. This has been widely discussed in previous literature on the Tobin Tax as funds to be designated to international development. The UN Millennium Development Goals (MDGs) are recent globally agreed targets to focus resources to urgent human need. Our contention is that revenue generated from a CTT by OECD (Organisation for Economic Co-operation and Development) countries ought, by agreement with finance ministries, to be channelled towards international development objectives set out in these Goals (see Appendix VII).

The indirect benefits of the CTT are perhaps more challenging to quantify but potentially of far greater financial value than the tax revenue itself. These accrue through enhanced economic stability, a serious decrease in financial shocks caused by speculative attacks on currencies and

a consequent reduction in the levels of foreign exchange reserves being held in order to guard against these attacks.

Developing countries, especially after the South East Asian crisis of 1997–8, have accumulated $1,500 billion of foreign currency reserves, primarily to prevent the recurrence of another currency crisis. These reserves are invested mostly in short term OECD government bonds that pay an interest of only 1%–2% every year. The introduction of the CTT would, by reducing the likelihood of the occurrence of another currency crash, free up potentially 50% of these reserves – that is $750 billion – for more productive uses that generate returns as high as 20% every year.[4]

Businesses, especially multinational corporations (MNCs), stand to gain from the implementation of a CTT due to the higher levels of trade, investment and growth this will bring. The CTT would directly reduce the risk of investing abroad. It would make a currency crash, where the value of overseas investments of MNCs would plummet, less likely. The cost of hedging foreign currency income streams and expenses would also diminish with the reduction in currency volatility that a CTT would bring. The mergers and acquisitions (M&A) and overseas lending operations of large banks suffer when currency volatility is high, even as the currency trading operations make money. A lower volatility would make both M&A and overseas lending more safe and attractive.

In the past 40 years there have been more than 300 chronicled speculative attacks on currencies. Of these, 105 have been successful and have resulted in a significant and sudden change in the value of a currency.[5] The South East Asian crisis was an extreme example where the countries involved suffered serious economic and social consequences. However, even if such an attack is unsuccessful, the country suffers from serious economic costs as a result of the high interest rates that are needed to defend itself. By making the occurrence of a crisis less likely and by making the defence of a currency more effective, the CTT can help countries have lower interest rates which stimulate growth in an economy.

We expect that the total benefits from the higher stability brought about by the CTT will add up to as much as $150–$300 billion every year globally. While both developed and developing countries stand to gain, the bulk of the benefits will accrue to developing countries in the form of more productive resource use and a more stable and sustainable growth path.

Conclusion

Not only can the CTT help fund the UN Millennium Development Goals to halve world poverty by 2015, but of even greater value is its ability to help grow the size of the global economic cake, with benefits to millions in poor, middle-income and rich countries. The passing of the CTT legislation in Belgium in recent weeks is a testament to the fact that the modern CTT proposition is technically possible and politically acceptable. The opportunity of this report is to dispel the doubts generated by previous incomplete versions of the CTT proposition and finally present a robust proposal that can be implemented in the near future.

4 Appendix V

5 See Kary Aart (2001)

Introduction

The CTT we propose fulfils two distinct goals: enhancing financial stability and financing international development. In this introduction, whilst acknowledging the great potential of the CTT to create considerable revenue to pay for the Millennium Development Goals, we focus on how the CTT can enhance financial stability.

The problem of financial volatility

SOUTH EAST ASIA CRISIS

In 1997–8, Thailand, Indonesia, the Republic of Korea, Malaysia and the Philippines suffered serious financial crises. These were triggered by, and their effects intensified by, speculation on currency markets.

Large numbers of companies went bankrupt, leading to massive job losses. Consequences were not confined to South East Asia, the International Labour Organisation estimated that the crisis caused the number of unemployed worldwide to rise by 10 million.

Source: Costing the Casino, War on Want, March 2002.

'Currency crises have been the subject of considerable interest, following the crises in Asia, Russia and Brazil. These crises were for the most part unforeseen and affected countries that had for several years been regarded as subjects for emulation by other developing countries. Few emerging markets may now presume to be immune to the destabilising fluctuations that affected Indonesia, Korea, Thailand, Russia and others.' IMF PAPER[6]

'Since the early 1970s, long-term growth in the major industrial countries has been cut in half, from about 5% a year to about 2.5% a year. Although many factors contributed to this decline in different countries at different times, low growth has been an international problem, and loss of exchange rate discipline has played a part.' [7]

'... my argument is that people do not realise how much ... volatility affects a small open economy ... you get a sharp fluctuation in the exchange rates in those countries and you are talking about half the economy being knocked off course and the exchange rate and the interest rate going up and down in a wild swing in a way that is not very manageable.' [8]
PAUL VOLCKER, FORMER CHAIRMAN OF THE US FEDERAL RESERVE

'Financial globalisation has led to growing frequency and severity of systemic financial crises. The adverse effect on economic and social welfare has raised the stakes for making financial stability an explicit objective in the design and implementation of monetary policy.' IMF[9]

These statements coming from the International Monetary Fund (the body ultimately responsible for the stability of the international financial system) and the ex-chairman of the US Federal Reserve (the most powerful central bank in the world) need to be taken very seriously. They highlight the facts that financial (including currency) crises are becoming more frequent[10] and that no developing country is immune. Volatility has also reduced growth in the industrial world.

Why is currency volatility such a serious problem?

At one level, a currency can simply be seen as another asset class, such as shares or bonds. Like them, a currency fluctuates in value and offers a rate of return – the central bank interest rate. Just as shares and bonds are a claim on the real assets of a company, a currency can be seen as a claim on the real assets of an economy. With pound sterling in hand, for instance, one can go and buy goods and services produced in the UK.

6 Predicting Emerging Market Currency Crashes, Kumar et al. IMF Working Paper, 2002.

7 Ev II, Q 1757, Globalisation, House of lords select committee on economic affairs, 2002

8 Bretton Woods Commission 1994 p.4

9 Challenges to Central Banking from Globalised Financial System, Editors: Piero C. Ugolini, Andrea Schaechter, and Mark R. Stone, IMF 2003

10 'We find that crisis frequency since 1973 has been double that of the Bretton Woods and classical gold standard periods and is rivalled only by the crisis-ridden 1920s and 1930s.' – Bordo, Eichengreen et al

At another level, currency markets are special. Companies do not use shares and bonds to carry out their normal business. Shares and bonds are issued rather infrequently in order to raise money for the operations of a company. Even if there is a large fall in the value of the shares of (say) IBM, it would not really have a very significant effect on the day to day operation of IBM. However, this is where currencies differ from other asset classes. India, for example, uses the Indian rupee every day in order to price its exports. The imports, even of essential commodities such as oil, are affected by the daily exchange rate between the US dollar and the rupee. The value of investments flowing in and out of India on a regular basis fluctuates along with the exchange rate.

If there were, for instance, a large fall in the value of the rupee, it would result in a serious disruption of the economy, even over the short horizon of a single day. India's exports would bring in less money and imports would become much more expensive. Moreover investors, seeing the value of their investments in India fall, could rush to try and repatriate these in order to limit their losses. In short, even a temporary deviation of a currency value from its fundamentals can have an immediate and serious impact on an economy. Moreover, while the change in the value of an IBM share could affect hundreds or perhaps thousands of people, a currency price fall has the potential to disrupt the lives of millions.

Between 22 May and 30 June 1998, the South African rand fell by 22%. *The Economist*[11], exploring the reasons behind this fall, said that *'... in South Africa itself nothing happened to cause so drastic a collapse. Nelson Mandela remained president and the respected Chris Stals – despite oft-repeated rumours to the contrary – stayed on as governor of the central bank. Trade figures were good, and the government maintained its conservative economic policies. The action that sent the rand to a record low took place in the dealing rooms of London and New York, where hedge funds and speculators reduced South Africa's currency at one point to 6.20 to the dollar, 22% below its level on 22 May.'*

It then went on to say, *'Some saw it as just South Africa's turn – a typical attack by currency speculators on a vulnerable target at a time of nervousness about emerging markets, whether in Africa, Asia or Latin America. But the reason South Africa is vulnerable is that the dealers know the central bank is reluctant to raise interest rates because that would stifle a struggling economy and add to already high unemployment. They also know that the bank has little foreign exchange with which to defend the currency.'*

How do currency traders increase currency volatility?

The problem is not one of 'evil' speculators deliberately out to wreak havoc on a country's economy – not all speculation is bad. The real problem is much more subtle and lies with the incentive structure in the market. Currency traders, just doing their jobs, can collectively end up destabilising a currency, even without setting out with a deliberate intent to do so.

As a trading manual[12] from a major US investment bank says, *'Price is not just a result of news events or economic data, but a representation of emotions, expectations, and the logic of trading participants.'* It then goes on to say *'...prices move in trends, and we prefer to trade in the direction of those trends until that trend shows signs of reversing.'*

11 Down with the Rand, *The Economist* July 2nd 1998

12 Fixed Income Technical Analysis, August 1999, Lehman Brothers, Vol. I, No. 6

This 'chasing the trend', a common trading philosophy in most financial markets, is at the core of the problem of currency misalignments. It makes financial sense for an individual trader to trade in the direction of a currency trend, even if the trader believes that the price is moving away from the fundamentals; the potential risks of bucking the trend can be too great. These risks arise because of two main factors: currency overshoots and trading risk management methodology.

How does the market structure affect the behaviour of currency traders?

Currency markets have a reputation for overshooting[13] and then reversing their direction. Given that no one has yet succeeded in predicting the degree of overshoot, it then makes sense for a trader to trade in the direction of the overshoot and hope to catch the price reversal early.

Imagine you are a trader who thinks that the (US dollar) $/£ (British pound) exchange rate justified by the economic fundamentals is 1.5, but that the market is seeing a trend of a rising pound and the $/£ rate is already 1.6. If you were confident that the $/£ rate would fall to 1.5, the sensible way of making money would be to:

- sell £100,000 @ 1.6 and receive $160,000
- wait for the $/£ exchange rate to fall to the fundamental value of 1.5
- use $160,000 to buy pounds @ 1.5 and receive £106,667.

This transaction produces a profit of £6,667.

However, that fall from 1.6 to 1.5 may be a long time coming – it is not uncommon for currency markets to deviate sometimes as much as 50% or even more from the value justified by economic fundamentals (overshoot). It is very possible then that the price may – over a period of many days or months – rise to a level as high as 1.9.

All traders are allocated a certain 'risk capital' and maintain a profit and loss account (P&L) that records the gains and losses they make by trading in the currency markets. These accounts are consolidated at the end of every day at the prevailing market rate. Those who end up with a positive balance will see a part of this profit – sometimes as much as 5%–10% – in their end of year bonus.

For those with a loss, however, the issue can be somewhat serious. Firstly, they are under pressure to make a profit in order to wipe away the loss if they want to see a bonus. Secondly, they are exposed to the danger of having their remaining 'risk capital' wiped away by a further loss – an outcome that could cost them their job.

Coming back to our example, if the $/£ rate does rise to 1.9, your P&L would register negative numbers and by the time the price hits 1.9 you would have recorded a cumulative loss of £15,789 – almost 16% on your position.

It is very likely that long before you hit this point either your manager or the risk management system of the bank would have forced you to liquidate your position – limit your loss – by making you buy back £100,000 at (say) 1.7.

In most instances though, you would not let that situation arise, but recognise the trend in the market and buy pounds at 1.6, even when you know that the value justified by economic

13 For example 'Currencies rarely spend time in tight trading ranges, and there is a tendency for strong trends to develop. Over 80% of trading volume is speculative in nature, so the market frequently overshoots before correcting itself.' www.fx-forex-trading.com /fx_stks.htm

fundamentals is only 1.5. Others will do the same and, through their collective action, drive up the value of the pound further away from what is justified by economic fundamentals alone.[14]

Actions that make perfect sense for an individual may end up destabilising the system as a whole. Similarly, while a single currency trader doing their job by trying to make a profit cannot cause a currency crash, it is possible that many currency traders just doing their jobs can systemically cause a currency to crash.

Do currency markets benefit from higher volatility?

In addition to the problem described above, there is a further problem of collective action and the incentive structure in the currency market. Currency traders stand to make most money when the currency markets are highly volatile. The rapid price movement gives traders more opportunities to make profitable bets – it also makes corporations and investors trading or investing money across borders buy more risk management products (hedging instruments) from currency traders in order to protect themselves against unforeseen changes in the value of their goods/services or investments.

As Ivan Ritossa – Global head of foreign exchange at Barclays Capital – said,[15] '*Active and volatile currency markets in 2003 helped UK banks across the board to increase profits from FX dealing. There has been a strong pick up in volatility in the market, which has brought increased client activity. FX volumes are up across the board.*' A report[16] by a city recruitment firm, Napier Scott, says '*The early signs for 2004 are that currency moves will remain volatile and banks' earnings from this sector will remain strong. It promises to be a rewarding year for professionals and, in particular, in FX derivatives.*'

Currency market traders as a group have a vested interest in volatility and this incentive structure increases financial instability. This incentive problem is not unique to the currency markets, although it is more prevalent than in other financial markets. Currency instability, however, can be especially damaging because what takes place in currency markets has economy-wide implications.

The CTT opportunity

We have described how the normal actions of a small group of currency traders can hurt millions of people, although there is no conscious intent to cause harm. Traders' actions can bring about exchange rate misalignments and cause high volatility, both of which act as a tax on economic activity.

This report seeks to provide a rigorous solution to the problem of excess volatility and frequent crashes in the currency markets through the application of our CTT proposition.

14 As in 'The present euro/dollar rate is a classic example of a currency overshoot, and the danger is that the herd instinct of markets will make dealers keep selling euros even if they think they are under-valued.' Larry Elliott 'G7 fiddles as heat on euro is turned up'. www.guardian.co.uk/euro/story/0,11306,607189,00.html

15 FX Week, February 23 2004

16 FX Week April 5 2004

1 The foreign exchange market[17]

The foreign exchange (FX) market is the generic term for the worldwide institutions that exist to exchange or trade currencies. This is the largest market in the world, with a massive turnover of more than $300,000 billion – three (3), hundred (00), thousand (000), billion (000,000,000) – and is characterised by loose regulation and a high degree of concentration.

Size of the market

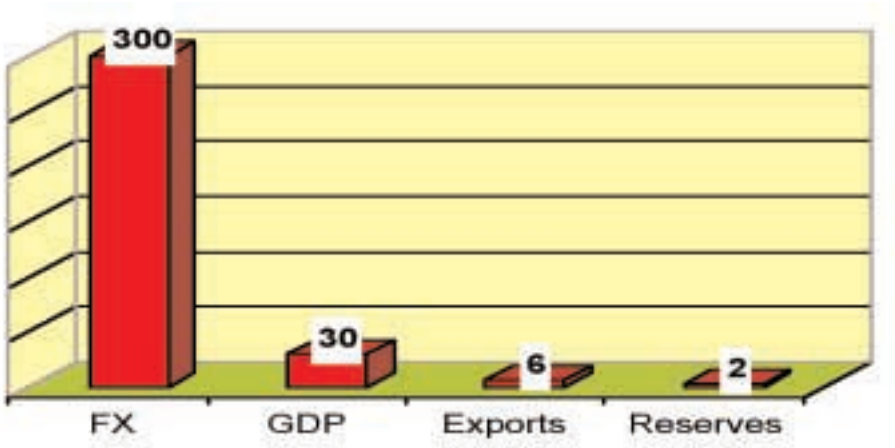
The FX market has grown exponentially since the collapse of the *gold standard*. The market turnover expanded from US$15 billion per day in 1973 to about US$150 billion in the mid 80s and stood at US$1,200 billion per day in 2001. With 250 trading days in a year, the turnover of the FX market in 2001 was a staggering $300,000 billion.

The FX market dwarfs world exports which stood at US$6,121 billion for the year 2001. This means the ratio of global trade to global foreign exchange turnover is only about 1 to 50 – an enormous change from about 1 to 3 in 1977. The entire world output of goods and services – Gross Domestic Product (GDP) – at $30,000 billion, is equivalent to just 10% of the turnover in the currency markets (Figure 1).

In 2001, global official *foreign exchange reserves* totalled over $2,000 billion, having steadily increased from 25 % of global exports in 1992 to 33 % in 2001, especially in the wake of several *currency crises*.

FIGURE 1
The relative size of the FX market

Size in thousands of billions of US$

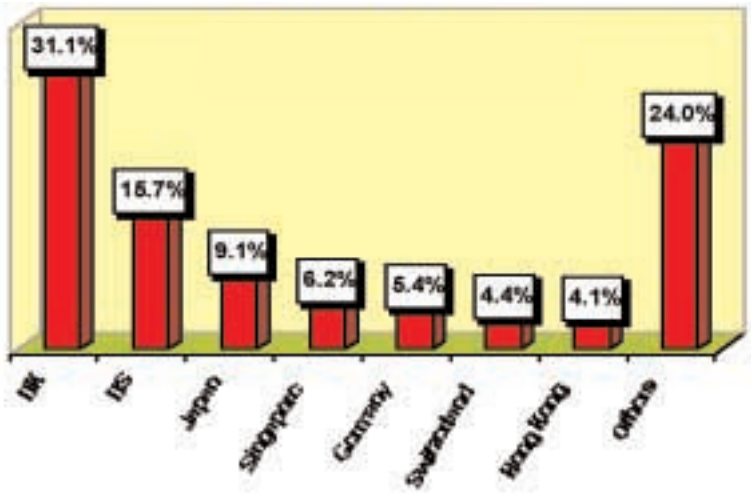


Concentration of the market

Despite being the biggest market in the world, it is dominated by relatively few financial institutions, comprising the biggest investment and commercial banks, trading mostly G7 currencies in a limited number of locations. In 2001, just 30 large banks accounted for more

17 See Appendix I for a much more comprehensive treatment

FIGURE 2
Market share by country



than 80% of the market, with 55% of the trading concentrated in just three countries – the UK, US and Japan (Figure 2).

The market is also heavily concentrated in OECD (Organisation for Economic Co-operation and Development) currencies and is especially dominated by the dollar, euro, yen and sterling, which together account for more than 75% of market turnover. In stark contrast, developing country currencies comprise only about 5% of the total volume.

Nature of the market

The trading is dominated by large banks and trades outside the financial sector accounted for only 13% of the total market in 2001.

The dominant instruments[18] are *swaps* (55%), *spots* (33%) and *forwards* (11%); *options*, *futures* and other *derivatives* make up the remaining 1%. More than 75% of these trades have an average maturity of less than a week, reflecting the short-term focus of the market.

The market is also highly competitive, with the transaction costs on most trades of the order of only 0.05%–0.01%. It operates on a razor thin margin, with profits on a majority of trades being of the order of a few basis points. So although total market turnover is about $300,000 billion per year, total annual FX profits for financial institutions are of the of the order of $30–$40 billion.

18 See Glossary for an explanation of all the foreign currency instruments

2 Our currency transaction tax (CTT) proposition

Background

The CTT is a proposed tax on all currency transactions and named after James Tobin, the late Nobel Prize winning economist, who first suggested the idea during a lecture at Princeton University (1972). Tobin realised that *speculation*[19] in the currency markets, besides acting as a tax on growth and productive economic activities, also compromised the ability of governments to exercise policy choices suitable to their economies.

He suggested that introducing a small tax on currency transactions would help reduce disruptive speculation in FX markets by raising the cost of engaging in such activities. This would give governments more room for making independent policy decisions, essentially giving them greater *choice* of economic options. This motivation for a CTT may be described as the *Discourse of Choice*.

The CTT has evolved much from its original conception as the foreign exchange market has grown and developed at an exponential pace. The currency market is now almost 100 times larger and much more complex than it was when James Tobin first put forward his idea.

Following the US stock market crash of 1987, where speculation threatened the very stability of the financial system, both Joseph Stiglitz (1989), another Nobel laureate, and Lawrence Summers (1989), a US Treasury Secretary under President Clinton, threw their weight behind the idea of taxing financial transactions to curb speculation in order to make financial crises less likely. This motivation for a CTT may be described as the *Discourse of Stability*.

In the *United Nations Human Development Report* of 1994, James Tobin drew attention to the revenue-raising potential of the CTT. Even a minuscule tax on the thousands of billions dollars of currency currently traded in a year would generate enormous revenues that could be used to combat poverty. This motivation for a CTT may be described as the *Discourse of Social Justice*.

In 1994 Mexico was hit by a major financial crisis. This was followed in 1997 by a series of crises in South East Asia, seriously affecting the Republic of Korea, Thailand and Indonesia, and also slowing growth the world over. Further crises struck Russia in 1998, Brazil in 1999 and Argentina in 2001. Speculation, whilst not the sole source of a country's economic crash, exacerbates the depth of each crisis. Each crash seriously increases unemployment and causes severe cuts to public services, creating poverty and disadvantaging the poorest sections of society.[20] In response to this, campaigning organisations began to work on this issue from the late 1990s, signalling their deep concern that a small set of players in the market could play a part in causing such devastating economic damage.[21]

In 1996, Paul Bernd Spahn, a German economist, combined the Discourse of Stability and the Discourse of Social Justice. The *Spahn variation* of the CTT, as it is now called, envisages a variable two-tier tax system. The first tier is a small base rate tax on all foreign exchange transactions, that could raise revenue for international development. The second tier involves

19 Speculation is the act of buying or selling a currency with a pure profit motive and no linkage with either trade or investment

20 See Section 7

21 This can also cause political instability, as recently seen in Argentina where there was a succession of short-lived governments in the immediate aftermath of the financial crisis.

hiking the tax rate up at times of severe currency volatility, thus making it unprofitable to continue to trade currencies, thereby preventing financial shocks.

Since then, several academics have strengthened the CTT proposal, most notably Rodney Schmidt[22] with his excellent work on taxing the point of settlement of FX trades, which helped demonstrate the feasibility of the proposition.

Our CTT proposition[23]

We are advocating the introduction of a currency transaction tax (CTT) to help create a more stable and improved climate for trade, investment and development. The CTT would achieve this by limiting the speculative and destabilising movements of capital while maintaining its free movement for productive purposes.

The CTT would also reduce the likelihood of the occurrence of currency crashes, a significant cause of poverty, and thus mitigate the social, economic and environmental costs associated with such crises. The CTT would generate substantial revenues to help pay for the UN Millennium Development Goals, which include halving world poverty by 2015 and provide significant improvements to healthcare and education.

The mechanism of the CTT

Our version of the CTT builds on Spahn's proposal[24] of a variable two-tier tax. It envisages a very small base rate of half a basis point (one basis point is equal to 0.01%, so half a basis point is 0.005%) applicable to all transactions with the primary goal of raising revenues and reducing intraday volatility.[25] It also features a very high, punitive, rate of the tax that kicks in to act as a circuit breaker, in order to reduce excess volatility whenever a currency is threatened by a sharp, substantial change in value. The base rate tax is applicable to all currency transactions. At 0.5 basis points, it would raise from $10–$15 billion revenue without seriously disrupting the market.

Speculative attacks induce sharp changes in currency rates. A punitive tax rate as high as 50% would apply whenever the currency changes in value by more than a normal amount in a trading period (the tax would apply only to the value of the currency outside the normal band) and act as a deterrent against speculation. This normal fluctuation can be based on a 5% (or any pre-specified amount) deviation around the exchange rate prevailing at the close of trading on the previous day.[26]

In Figure 3, for instance, a 5% variation around the closing exchange rate from the previous day is used to define the band (corridor) of normal fluctuation. Any time the currency value falls outside the band, the punitive tax rate would be triggered. On day 41, for example, the corridor minimum is 1.425 but the actual exchange rate has fallen to 1.39, thus triggering the punitive tax (between the two small squares on the graph). In order to avoid paying this prohibitive tax, most participants would either wait till the rate normalises or will transact at the corridor minimum rate of 1.425 where only the base rate of taxation applies.

This circuit breaker and pause (slowdown) in currency trading gives the government time to take appropriate policy measures to prevent further speculative attacks. A number of times, for

22 A feasible foreign exchange transaction tax, Rodney Schmidt, North South Institute, 1999

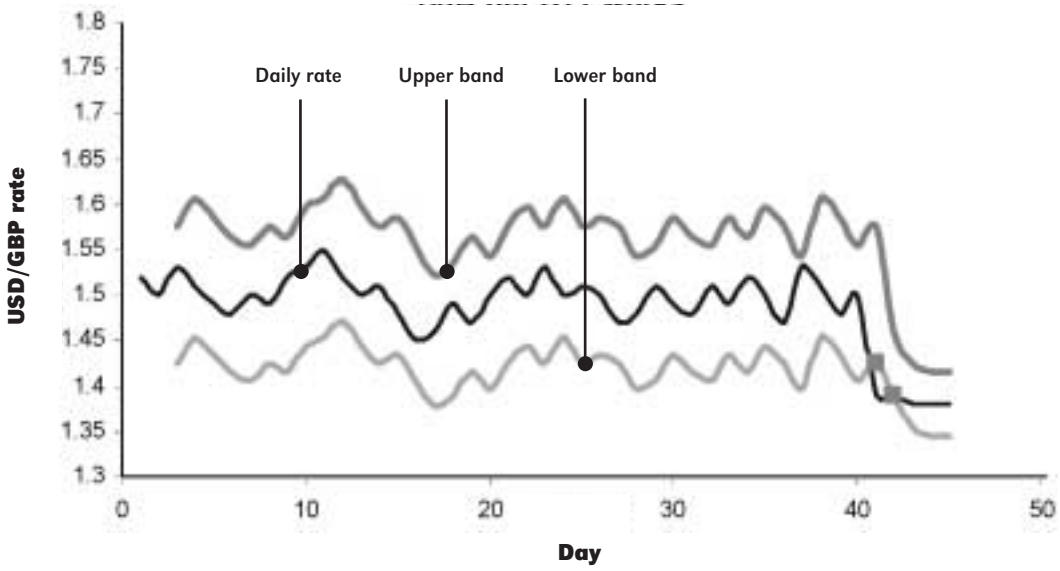
23 See Appendix II for a comprehensive treatment

24 On the feasibility of a tax on foreign exchange transactions, Paul Bernd Spahn, 2002

25 Rapid change of prices from minute to minute and hour to hour within a day

26 In fact, for reasons explained in Appendix II, we believe that it is best to use the closing exchange rate from the previous day, and not the moving average for a number of days, to determine the band of normal fluctuation.

FIGURE 3
How our CTT works



instance, these attacks are an overreaction to a piece of news or a statement by a central bank or finance ministry official. The overreaction to such news/statements on the foreign exchange markets would be significantly reduced by the CTT.

Also, the triggering of the circuit breaker can prove to be very costly to speculators who tend to make highly *leveraged* (with borrowed money) bets against a currency. It both increases the cost of speculation and reduces the likelihood of successful speculative attacks. At the same time, this would not affect the readjustments to currencies arising out of fundamental long-term economic factors.

The basic parameters of the CTT[27]

The actual form of the CTT that a country applies can vary a lot, but we propose the following parameters as general guidelines.

We propose that instead of having a single base currency on which to centre calculations, it is more prudent to use a weighted average of the four most frequently traded currencies in the world – namely the US dollar, the euro, the Japanese yen and the British pound.

For determining the width of the 'normal band' on either side of the base average rate, either a fixed percentage of the order of 2.5%–5%, or a measure of variability about 1 *standard deviation*[28] in magnitude could be used. This standard deviation should be calculated based on the exchange rate variability in the most recent 10–20 day period.

The collection and enforcement of the CTT

Under our proposal, the CTT would be levied on a currency, not jurisdiction. So, for instance, were the UK to implement the CTT, pound sterling transactions all over the world would be taxed and transactions in non-sterling currencies in the UK would not be taxed.

A currency is nothing but a claim on the central bank of a country. As the Malaysian government demonstrated at the time of the South East Asian crisis, it is possible for central

27 For a detailed discussion see Appendix II

28 A mathematical measure of currency volatility

banks to know every major transaction that happens in their currency. India is another country where the central bank keeps close tabs on foreign exchange transactions involving the domestic currency, the Indian rupee.

A pound sterling balance, for instance, has no meaning outside of the territorial borders of the United Kingdom. Even the so-called *eurocurrency* deposits held off shore eventually have to be held as pound balances within the UK. A simple disclosure requirement can allow the Bank of England to follow any major FX transaction that involves pound sterling.

The CTT can be implemented unilaterally, as shown by Chile, which operated a successful 'unremunerated reserve requirement' (a form of CTT) regime in the late 1980s. Brazil and Turkey currently tax some foreign exchange transactions.

The evolution and exponential growth of the *Continuous Linked Settlement Bank*[29] (CLS Bank), which was created exclusively for the purpose of the settlement of large FX transactions provides a very convenient mechanism for the CTT to be collected centrally at a very low cost.

Any additional legislation required to introduce the CTT can build on the laws introduced in the wake of September 11 to control money laundering and prevent terrorist financing. In fact, as the former prime minister of India pointed out, the regulatory burden imposed by any CTT legislation would actually be much lighter than the stringent measures spelled out in UN Security Council resolutions 1373 and 1456.[30] The Indian leader said that measures like this, to which all countries are committed by the UN charter 'would be of far greater magnitude than those required for monitoring and taxing capital flows'.

While there is a risk that some financial institutions might seek to evade payment of the CTT, how many banks or large financial institutions would seriously risk their reputations and relationships with government for the sake of evading a 0.005% tax? While it is true that a proportion of people and companies may seek to evade taxes, such as income tax, VAT or inheritance tax, this is not a reason not to tax them. Despite the efforts of some to evade payment, the vast majority do pay their taxes and the revenues collected are considerable. What is required is the political will to implement currency transactions taxation and provide the necessary legal enforcement to ensure payment and penalise evasion. Dean Baker of the Centre for Economic and Policy Research says, *'If the Tobin Tax is implemented by a government committed to enforcing it, then it will prove enforceable.'*[31]

Typically, the tax would be collected electronically at the point of settlement, either at the CLS bank or under the gross currency settlement systems of each country, and would be directly payable to the central bank of the country.

29 See Appendix II

30 http://www.globalpolicy.org/socecon/glotax/currtax/2003/0223india.htm

31 'Tobin Taxes: Are they enforceable?', Debating the Tobin Tax, New Rules for Global Finance 2003

3 CTT: a radical proposal or a mainstream idea?[32]

Opponents of the Tobin Tax often try and dismiss it as a utopian and outlandish idea. However, this could not be further from the truth.

Conceptually, the first tier (base rate) CTT is very similar to Security Transaction Taxes, which are taxes levied on the buying and selling of financial securities such as bonds, stocks and property deeds. Countries such as the UK, US and Belgium have existing and well functioning security transaction taxes in operation. The UK, for instance, makes more than £4 billion annually from the Stamp Duty Reserve Tax. Similarly, security transaction taxes in the US (which include a 0.2 basis point tax on stock trading) raised $2.2 billion in 2000.[33]

The second tier (surcharge) part of the CTT is nearly identical in its effect to circuit breakers that exist in stock exchanges in various forms, such as price limits or trading halts. These circuit breakers work to reduce excess volatility and speculation and to stabilise market conditions. These mechanisms have been in place for several decades but their scope was expanded sharply following the US stock market crash of 1987. They now operate in one form or another in almost all major stock exchanges such as the New York Stock Exchange and Bombay Stock Exchange.

Currency transactions are already taxed in some countries such as Turkey, Brazil and Venezuela. A majority of countries have some form of controls applicable to currency trading, such as withholding taxes and dual exchange rate regimes. The regulation needed to support such measures is far stricter than the controls needed to implement the CTT.

This shows that the ideas and methods behind our proposal for the CTT are neither radical nor new but merely combine the existing mainstream ideas of security transaction taxes, circuit breakers and currency oversight into one viable proposal for a CTT.

In fact, these three existing regimes – security transaction taxes, circuit breakers and currency oversight – can be used to provide realistic inputs into, respectively, the design of the base tax, the design of the tax surcharge and mechanisms to ensure compliance with the CTT.

32 See Appendix 3 for a comprehensive discussion

33 India has just introduced a security transaction tax that is expected to generate more than $800 million of revenue every year.

4 The CTT: raising revenue, reducing the likelihood of currency crises and decreasing volatility[34]

Raising revenue

A small base tax at 0.5 basis points, when applied on all FX market transactions that amount to $300,000 billion annually, is expected to generate about $10–$15 billion of tax revenue every year. The incidence of the tax will fall mostly on the thirty or so largest banks in the market which account for a majority of the transactions. While they will be able to pass on some of the additional cost from the tax to their customers (mostly other financial institutions), the highly competitive nature of the FX market will mean that most of the tax revenue would come out of their own profits.

The total annual profits from trading in the FX market – about $30–$40 billion – accrue mostly to the major banks and constitute 5%–10% of their total profits. We expect the costs to the banks of the CTT to be offset by the positive impact on their profits of increased trade, investment and growth.

Reducing the likelihood of currency crises

The CTT would go a long way to reducing the likelihood of currency crises. There have been over 300 speculative attacks on various currencies in the past thirty years of which about a third have been successful, resulting in currency crashes.[35] However, even the unsuccessful attacks have severe economic and social costs associated with them. These come about as a direct result of actions taken to fend off speculative attacks such as a sudden increase in interest rates.

The CTT would not only act as a disincentive to speculation through the levy of a punitive tax, but would also significantly increase the cost of being wrong. Speculators do not always make money and the CTT would skew the odds against them profiting and thus discourage the behaviour of making big bets against a currency. Consequently, the CTT would significantly reduce not just the likelihood of a speculative attack succeeding, but also the total number of such attacks.

Countries would benefit profoundly, with huge savings in social and economic costs through fending off, or through not succumbing to, concerted efforts to force their currencies to devalue.

Decreasing volatility

Even in the absence of a currency attack triggered by speculators, currency values fluctuate wildly and most changes reverse themselves over very short horizons of a matter of a few days. These result in excess volatility, which acts as a tax on growth, trade and investment by making them more risky. This means that buying insurance against unforeseen currency fluctuations

34 See Appendix IV for a detailed treatment

35 See Aart Kray (2001)

(also called *hedging*) is more expensive for both investors and counterparties to international trade.

By imposing an additional cost on each transaction and specifying a normal band of fluctuation for each currency, the CTT will help significantly reduce this additional volatility. The more volatile a currency normally is, the more effective the CTT would be in reducing this volatility. Our estimates[36] show that for the more unstable currencies, volatility can be reduced significantly and hence have a major positive impact on trade, investment and growth.

36 Refer to author for details of estimates

5 Benefits of the CTT for the world economy and sovereign states

General macroeconomic effects of the CTT

Currency volatility, like pollution is a negative externality, which means that the actions of a few (currency speculators in this instance) have adverse consequences on the welfare of market players engaged in trade and investment and the well-being of whole populations. Speculators aggravate volatility and this harms businesses, trade, investment, development and economic stability alike. There is every reason to extend the consensus on taxing polluters to currency speculators. The CTT achieves this aim, without incurring the downside costs such as increased potential for corruption, black market transactions and investment inefficiency that are associated with capital controls.

Increased investment efficiency

The idea that the invisible hand of the market efficiently allocates resources and prices assets according to some measure of 'fundamental value' has been largely discredited in mainstream literature and is best exemplified by the recent excesses of the 'dot com bubble'.

The existence of 'rational' speculative bubbles involving misallocation of resources and overshooting of prices resulting in economic disruption is well documented in markets for currencies, commodities, property and stocks. The disruption caused by these speculative excesses acts as a tax on economic activities in general and growth and development in particular.

Basic economic theory shows that uncertainty acts as a tax on investment and reduces economic efficiency. Hence the reduction of currency volatility that is likely to result from the imposition of the CTT would allow investors, businesses and governments alike to make more efficient investment decisions.

Stabilised trading patterns

As exchange rates fluctuate, trading and production patterns shift and adjust to try to maximise profitability. This adjustment, occurring often at times of crisis, is not frictionless and has many economic and social costs associated with it. As the currency volatility and likelihood of a crisis decreases, more stable and robust trading patterns emerge.

Increased international trade

Currency volatility acts as a tax on international trade. Reduced volatility in the currency markets would serve to increase international trade flows. Trade between the members of the European Union, for instance, increased dramatically after the introduction of the ERM[37] that limited the fluctuations of European currencies against each other.

There is empirical evidence[38] that shows that a 1% reduction in G-3 currency (dollar, euro and yen) volatility leads to a 2% increase in the real exports of developing countries. In fact, reduction in the volatility of any currency results in an increase in trade, but reduction in volatility of currencies belonging to the world's largest economies has the most significant effect.

37 Exchange Rate Mechanism

38 See Esquivel and Larrain, 2002

Impact on developing countries

Volatile exchange rates have a large negative impact on developing country economies as the currencies of these countries are typically considered to be more vulnerable. At the extreme, currency crashes of the kind experienced by Mexico and countries in South East Asia can disrupt a country's whole economy and have disastrous consequences on the welfare of citizens. However, even in the absence of dramatic currency crashes, exchange rate volatility has a serious negative impact on the economy of developing nations by making borrowing more expensive, reducing trade and FDI (foreign direct investment) flows and acting like a tax on growth and development.

High exchange rate volatility, for example, has had a negative impact on both growth and investment in sub-Saharan Africa.[39] An increase in the volatility of developed (not just developing) country currencies can also increase the likelihood of the occurrence of a currency crisis in developing countries.[40]

As developing countries stand to gain a lot though the introduction of the CTT, there has been a recent surge of support for the idea. Leaders of both India and Brazil have spoken in support of the introduction of a CTT.

Increased aid flows

Many countries, especially in sub-Saharan Africa, are abjectly poor and are becoming worse off – average per capita real income in the poorest of these is about $300 a year, down from about $400 in 1980.[41] Life expectancy has fallen dramatically in many countries as the pandemic HIV-AIDS spreads. This emergency is compounded by other problems of lack of infrastructure in developing countries, such as clean water supply, electricity and medical provisions and facilities.

In light of this, the world's leaders met in the United Nations General Assembly in 2000 to set out a new global vision for humanity. They agreed to goals, subsequently known as the Millennium Development Goals (MDGs)[42] – to halve world poverty by the year 2015; to achieve universal primary education; to promote gender equality and empower women; to reduce child mortality; improve maternal health; to combat HIV/AIDS and other diseases; and to ensure environmental sustainability.

It has been estimated that funding these goals requires an additional $50 billion every year. This money could be raised if OECD countries met their pledge – made in 1970 – of disbursing 0.7% of their GDP as overseas development aid (ODA) to poor counties every year. However, most have failed to meet this pledge. The ODA of the United States, for example, is only about 0.12% of its GDP.

In the absence of higher aid flows from donor countries, the revenues raised by the CTT could significantly contribute to plugging the resource gap that exists in order to fund the MDGs.[43] Moreover, this represents a stable source of revenue, with money being generated every year.

39 See Bleaney and Greenaway, 2000

40 See Esquivel and Larrain, 2002

41 World Bank's World Development Indicators

42 See Appendix for a list of MDGs

43 It could contribute $15 billion of the total $50 billion needed annually

Increase in desirable investment flows

The Economist[44] recently revised its thinking when it conceded that some form of capital controls in developing countries may be desirable in order to shift the flow of foreign capital from destabilising short-term portfolio-type flows to longer term FDI-type flows. Various controls of such types have worked successfully in Chile, Brazil and Malaysia, creating a safer investment environment and making the countries more attractive for FDI.[45]

As all capital flows in and out of a country have to go through the currency markets, the imposition of the CTT will achieve this aim without the need for an imposition of capital controls. The decreased volatility and reduced likelihood of currency crises would further cement this shift in investment from short term to longer term. Additionally, this would make the FDI inflows safer and thus act to encourage increased inward investment into developing countries.[46] Work done at Harvard University[47] supports the view that a reduction in currency volatility leads to higher FDI flow into developing countries.

Many economists have shown that increased FDI flows can help accelerate development, especially in countries where the domestic capital formation is low because of abject poverty and poor savings (such as countries in sub-Saharan Africa).

High reduction in currency volatility

On an absolute volatility reduction scale, developing country currencies stand to benefit disproportionately as, typically, the base levels of volatility for these currencies is higher. Under our proposition, the higher the volatility for a currency, the more effective the CTT would be in reducing it.

In terms of doing business with developing countries, exchange rate risk (volatility) is the single biggest risk hindering investment and trade. Any reduction in currency volatility would go a long way to improve the attractiveness of developing countries for both investment and trade.

Freeing up wasteful foreign currency reserves

The high volatility of developing country currencies necessitates the holding of high foreign exchange reserves to mitigate significant exchange rate fluctuations. These foreign exchange reserves suck liquidity out of the local economies and effectively act as a tax on growth and investment by leading to higher real interest rates. There is also a high *opportunity cost* of investment associated with these reserves as they are unproductively invested mostly in low yield OECD government bonds (mostly US Treasuries). These also serve to keep the interest rates in the US artificially low and hence have the effect of subsidising consumption there at the cost of local developing country growth.

Developing countries together hold more than $1,500 billion in foreign exchange reserves. *'Most countries invest their foreign-exchange reserves in relatively safe, short-term assets, such as US Treasury bills. The yields on such instruments are currently very low – well below the interest rates that developing countries pay on their debt.'*[48] The average yield on such investments is less than 2% – so the reserves generate less than $30 billion every year. Brazil, for example, has about $50 billion of foreign exchange reserves that earn an interest income of about $1 billion every year. At the same time, however, Brazil has dollar debts at an interest rate in excess of 13%. So this means that by holding these reserves, Brazil is losing 11% of $50 billion or $5.5 billion – more than 1% of its GDP – every year.

If these reserves were instead invested within the developing country they could generate much higher returns of more than $90 billion at an average interest rate of 6%.[49] This shows that

44 A slightly circuitous route, The Economist May 1st 2001

45 See Cordella, 1998 and Edison and Reinhart 2001

46 Tornell (1990) shows how the existence of a Currency Transaction tax increases the Real investment flowing into developing countries.

47 See Esquivel and Larrain, 2002

48 World Bank, Global Development Finance, 2003

49 Average interest rates within developing countries are higher than in developed countries

every year there is a very considerable opportunity cost, almost $60 billion, associated with the holding of these reserves. If one were to consider the potential returns from social and infrastructure-related investment in developing countries, then these can be as high as 20% annually. In this case, the opportunity cost of holding FX reserves to developing countries is as high as $270 billion every year.

In addition, the dollar has fallen by more than 12% against a trade-weighted index over the past 18 months, and more than 60% of the total reserves are held in dollar-denominated assets. This means that merely by holding these reserves, developing countries have lost an additional sum of about $108 billion.

While there are also other reasons for holding FX reserves, any reduction of volatility accruing from the CTT would free up a proportion of these reserves for more productive and much needed investment in social, health and business infrastructure. This would also have the effect of increasing the availability of credit in the economy and lower the interest rate which, in turn, would encourage local business investment.

Given the abject poverty that exists in so many developing countries, it is urgent to address the opportunity cost of tying up so huge an amount of resources unproductively. It is our contention that more than half the total reserves that have been accumulated in the aftermath of the South East Asian currency crisis to protect against potential speculative attacks can be freed up by the introduction of a CTT. (See Appendix V for a detailed treatment.)

Increased policy independence

One of the biggest public policy concerns in the developing world is the pursuit of market confidence. Financial markets are quick to penalise perceived 'misbehaviour', current or future. This transgression is deemed to occur with the departure from policies prescribed by investment bank economists or their IMF/World Bank counterparts and mostly fails to take into account the unique social and economic needs of the developing countries concerned.

A clear example of this is the fall in the value of the Brazilian Real[50] (causing the interest rates on the public debt to climb to punishing heights) as the fortunes of the left-wing presidential candidate Lula rose in the polls. Investors were in effect telling the electorate that voting for Lula would mean that the economy would be crushed. Once elected, Lula was faced with the choice of exacerbating the financial crisis or making massive cuts in welfare-enhancing public spending programmes. He chose the latter.

While the CTT would not altogether remove such problems, it would certainly mitigate both their likelihood and severity. The CTT amplifies the effectiveness of public policy measures taken to defend against a sharp fall in currency values[51].

Decreased social costs

The negative impact of currency crises and instability on the social fabric and infrastructure of countries includes increased levels of unemployment, higher poverty, a worsening public health situation, political tensions and accompanying effects such as environmental problems (increased exploitation of forests for food and fuel). It is estimated that the South East Asian crisis resulted in a loss equal to about 10% of the region's GDP. In addition, it indirectly (through weak market confidence, reduced demand for exports and lower commodity prices) cost sub-Saharan Africa more than 5% of its GDP. The CTT alleviates the occurrence of such crises and thus decreases the high social costs that accompany them.

50 Emerging Market Weekly

51 See Appendix 4

Lessen the need for central bank intervention

Many central banks buy and sell foreign exchange in the currency markets to stabilise their currencies against short-term fluctuations. There are costs associated with these interventions because, in order to stabilise the market, the central bank mostly buys or sells against the trend. The Japanese ministry of finance (in the role of the central bank), for instance, lost $306 per citizen due to its intervention in the currency markets in the six months up to September 2003.[52]

A less volatile exchange rate resulting from the introduction of a CTT would reduce the need and hence the costs of intervention.

Impact on developed countries

A number of the effects of the CTT documented above would also in large measure apply to developed countries.

Developed countries stand to benefit significantly from higher investment efficiency, more stable trade patterns and increased international trade, as they are the source for much capital and are also by far the most significant players in world trade.

Additionally, lower financial volatility and a reduced likelihood of currency crashes would help developed countries by reducing the costs associated with these. In the US, for instance, more than 500,000 jobs were lost as a result of the SE Asian crisis[53]. Financial shocks of any kind, such as the Argentine crisis, now have impacts all over the world. The Russian bond default in 1998 triggered the now famous LTCM crisis[54] that sent tremors through the US banking system and almost caused a collapse.

Increasingly, it is not just developing countries that depend on developed countries for growth but also the other way round. The US and Japan both export significant amounts of goods and services to developing countries such as China, and are thus increasingly dependent on growth in these countries for their own economies to prosper. Additionally, a large pool of pension fund money from developed countries is invested in developing country assets. In the recent Argentine crisis thousands of retired people from both Italy and Spain[55] lost their life savings and this, in effect, will have a significant impact on the aggregate demand levels and growth in Spain and Italy.

Most of all, however, developed countries would prosper through a better commercial climate for their businesses that would then translate into higher profits and hence higher tax revenue for the governments (see Section 6). Empirical evidence[56] shows how high exchange rate volatility makes US MNCs (multinational corporations) more risky.

In aggregate, the total benefits of the CTT accruing to both developing and developed countries would be in the range of $150–$300 billion every year. While the CTT is progressive in its total impact, transferring more resources to poorer countries than to richer countries, it is important to note that it is not redistributive, as no one is becoming worse off.[57] In its impact on the world economy, the CTT acts not so mush as a tax, but rather as a tax credit by increasing the absolute size of the global economy. It does this by setting the world on a path of higher, efficient and more stable growth.

52 FX week, 5th Jan 2004

53 Palley, 2000

54 See http://www.erisk.com/Learning/CaseStudies/ref_case_ltcm.asp

55 They were persuaded by their banks to invest in Argentine government bonds with the assurance that such investment was perfectly safe.

56 See Bartov et al (1996)

57 While banks may see a initial dip in profits because of higher tax and lower volatility, we expect that the opportunities provided by a better business climate would more than compensate this loss of profits.

6 The business case for the CTT

As discussed above, the CTT would serve to make the international and domestic environment more stable and hence more conducive to growth in trade, productivity and investment. This would help increase both growth and profits for businesses significantly.

Decreased risk with cross-border investment

Currency volatility and political uncertainty are the biggest risks facing a company making any cross-border investment decision. The mitigation of the currency risk would encourage businesses to make more investments, especially in developing countries.

This benefits developing countries, where such investment generates growth and employment; and benefits companies for whom developing nations represent growth markets.

Enhanced trade flows

Most businesses stand to gain from increased trade flows. The increased stability brought about by the CTT would lead to significantly higher global trade volumes and bring about dividends to both companies and consumers the world over.

Decreased risk doing business with international partner firms

The business world is full of alliances, partnerships and dealings between cross-border entities. In an uncertain exchange rate environment, there is a significant risk involved in doing business with partners located in another currency area. A reduction in currency volatility would directly reduce the risk associated with entering into long-term contracts and strategic partnerships.

Lower cost of foreign exchange hedging

The need for and the cost of foreign exchange hedging are directly related to currency volatility. The reduction in volatility brought about by the CTT would lead to lower costs for hedging instruments such as swaps, options and forwards.

At present, most small businesses and some large MNCs do not hedge their foreign exchange exposure. A reduction in currency volatility would decrease the potential costs of not hedging this exposure and hence reduce the risk of taking such decisions.

The following statements highlight the risk of not hedging foreign exchange exposure in a volatile environment.

'We always hedge our exchange exposure. But hedging has its limits. We always hope for a stable exchange rate.' TOYOTA SPOKESPERSON ON THE FIRM'S $250 MILLION OPERATING INCOME EXCHANGE RATE COSTS[58]

'The cost of failing to hedge FX risk was brought into sharp focus last week, when mining firm Anglo American said its 2003 earnings were down nearly $600 million as a result of currency movements.'[59]

58 FX week Jan 5th 2004

59 FX week Jan 12th 2004

'The world's biggest mining company, BHP Billiton, based in Australia, said adverse exchange rate movements accounted for a year-on-year downturn of US$ 455 million for the six months to December 2003.'[60]

Some of these benefits would be offset because banks will pass on some of the increased transaction costs to companies. However, the overall effect of the CTT on hedging costs would still be highly beneficial.

Decreased likelihood of shocks to the global financial system

Currency crises act as shocks to the global economy and international business dealings. Each shock acts as a brake on growth, trade, investment and development and serves to harm business interests. It results in an inefficient allocation/reallocation of scarce resources, as seen in the aftermath of the Argentine crisis when many exporters relocated from Brazil to Argentina in order to take advantage of the low exchange rates. Some have subsequently moved back as the Argentine peso has climbed and reduced the relative cost advantage of Argentina over Brazil.

The CTT would help businesses, not only by decreasing the actual occurrence of the disruption wrought by currency crises, but also by reducing the opportunity costs associated with inefficient business decisions based on the expectation of the occurrence of such crises.

Higher growth and lower interest rate environment

Governments, especially in developing nations, often keep the real interest rates artificially high as a preventative measure against a run on their currency. As the CTT decreases both currency volatility and the likelihood of currency crises, governments can shift policy and reduce real interest rates without the fear of speculative attacks on currencies. The freeing up of a proportion of non-productive foreign currency reserves would also increase the availability of domestic credit and contribute towards a lower interest rate environment. This lower interest rate regime would foster growth.

Europe in the 1980s provides a good example of the opportunity costs of high real interest rates. The high interest rate policy pursued by most European governments to guard against currency crises directly resulted in a sustained period of low growth and high unemployment.

Effects on banks

We have stated that the *incidence* of the CTT would fall mostly on the largest banks involved in the FX market. However, it is not certain that they would lose out in terms of their overall profitability, as the analysis below demonstrates.

Banks are diversified entities, often with many different areas of operation. Currency trading profits constitute only 5%–10% of the total profit, even in the banks most active in the currency markets. In fact, banks are so well diversified that different parts of banks sometimes operate as distinct entities with little or no knowledge of what another part of the bank is doing. This means that sometimes, different parts of the bank could end up acting at cross purposes – something like the left arm pulling when the right is pushing.

'Foreign exchange volatility[61] *might be offering traders unprecedented opportunities in the currency markets, but sales dealers are paying for it with the loss of cross-border mergers and acquisitions (M&A) business. When a corporate makes an investment, its foreign direct*

60 FX week Jan 12th 2004

61 FX Week March 15th 2004

investment horizon is long term,' said Shahab Jalinoos, senior FX strategist at ABN Amro London. *'Currency volatility impacts upon this, so it does not encourage activity.'*

Large commercial banks such as Citibank, HSBC, UBS and Deutsche Bank – all large players in the FX market – lend money not just to overseas subsidiaries of MNCs but also to local companies in developing countries. They also have significant operations in many developing countries. When currency traders at these banks increase the volatility of developing country currencies or cause a currency crash though their actions, the loan operations and overseas subsidiaries of these banks stand to lose significant amounts of money, even as the currency traders make substantial profits.

The introduction of the CTT would in effect serve to redistribute income within the banks away from currency trading to M&A, lending and overseas operations. Though the revenues of the currency operation may fall, the bank may not see any erosion in its total profits. In fact, some banks may actually increase their profitability as a result of the CTT. A more buoyant business environment, higher trade and FDI flows and lower interest rates would all have a positive influence on bank profitability.

7 The social and economic consequences of a currency crisis[62]

Currency crises, like all financial shocks, have severe adverse economic and social consequences, not only on the country in which they occur but also, increasingly, on the world as a whole. Most major financial crises in the past fifteen years were triggered and their effects intensified by speculation on the currency markets.

While this volatility in the currency markets has enabled a few banks and investors (George Soros, for instance, famously made more than $1 billion in 1992 by speculating against the British pound) to make millions of dollars in profits, for the most part it has had disastrous economic consequences and inflicted acute social distress, especially on the poor. Vulnerable groups such as women, children and the elderly have been hit particularly hard.

The SE Asian crisis of 1997–8, for instance, translated into near economic collapse in the region and growth rates that had previously averaged around 7% per annum fell to minus 10%. The long term economic cost to the region was in excess of 12% of the aggregate GDP. Countries experienced rising rates of unemployment and inflation which led to a large increase in poverty (Table 1).

The International Labour Organisation estimated that, as a direct result of the crisis, the number of unemployed in the world went up by more than 10 million. In Korea, for instance, more than 1.2 million workers were laid off, and more than six million people became unemployed in Indonesia. There were significant costs in the developed world too – in the USA, for instance, more than 0.5 million workers lost their jobs in the aftermath of the crisis.[63] In the resulting economic depression there was a significant erosion of worker rights as people became desperate for jobs.

The number of poor in the region doubled to an estimated 90 million and years of progress were reversed within a few months. Rising poverty caused parents to withdraw their children from school and there was a significant reported increase in child prostitution. Health benefits were eroded, the crime rate escalated and social security spending was slashed as governments were forced to tighten their budgets severely.[64]

TABLE 1
The effects of the South East Asian crisis 1997–8

Country	Increase in number of poor – millions (% of population)	Due to unemployment – millions (% of total increase)	Due to inflation – millions (% of total increase)
Indonesia	**39.9 (20%)**	12.3 (30.8%)	27.6 (69.2%)
Republic of Korea	**5.5 (12%)**	4.7 (85.5%)	0.8 (14.5%)
Thailand	**6.7 (12%)**	5.4 (80.6%)	1.3 (19.4%)

The Brazilian currency crisis of 1998, for instance, saw both unemployment and inflation register a sharp rise, and this was accompanied by a near halving of the budgetary allocation for agrarian reform, health, housing and environmental protection. Following the devaluation of the Mexico peso in 1994, unemployment doubled and wages fell by 30%.

62 Costing the Casino, www.waronwant.org

63 Palley, 2000

Millions of Argentines have fallen into poverty as a consequence of the recent financial crisis of 2001. Images of people who had held respectable jobs in the society, scavenging for food in dustbins after nightfall, have been splashed around the world.[65] The 2001 currency crisis in Turkey resulted in a loss of 500,000 jobs and a 30% rise in the price of basic foodstuffs.

Financial crises also have environmental costs in the form of increased deforestation (as seen in Indonesia and Brazil when people could no longer afford to buy fuel and they cut down trees) and reduced expenditure by the governments to protect the environment. Additionally, in developing countries, financial crises are also followed by a sharp increase in logging (both legal and illegal) and extractive industry.

65 BBC News and documentaries

8 The Millennium Development Goals and financing international development

'We will spare no effort to free our fellow men, women and children from the abject and dehumanising conditions of extreme poverty, to which more than a billion of them are currently subjected. We are committed to making the right to development a reality for everyone and to freeing the entire human race from want.'[66]

At the start of the new millennium, the world's leaders met in the United Nations General Assembly to set out a new global vision for humanity. From these fine words the Millennium Development Goals (MDGs) – as they were subsequently named – were born. The MDGs include: halving the number of people living in poverty by 2015; reducing child mortality; combating HIV/AIDs and other diseases; achieving universal primary education and ensuring environmental sustainability (see Appendix VII).

To achieve these goals will require a substantial increase in development spending. Former President of Mexico, Ernesto Zedillo, in his *Report of the High Level Panel for Financing for Development*,[67] has concluded that additional resources of at least $50 billion per year will be needed to meet these targets worldwide. This estimate is based on detailed costings in some of the key goal areas by UN bodies such as UNICEF, the World Health Organisation and the World Bank. Since overseas development assistance (ODA) flows are presently of the order of $50 billion annually, to achieve the MDGs effectively means doubling current levels of spending on aid.

Urgency

Desperate poverty and the acute disparity between the rich and poor countries of the world require an urgent response from many perspectives. From the humanitarian point of view, millions of lives are lost to hunger, malnutrition and water-borne diseases every year. Each life lost, or blighted, is a personal tragedy.

From a wider health perspective, poor countries are fighting a losing battle against HIV/AIDS, the most serious pandemic to affect the world since the Black Death (bubonic plague) 650 years ago. In 2003 alone there were 3 million AIDS-related deaths and 5 million new infections. The number of children who have lost one or both parents to the illness has now reached 15 million and is expected to rise to 18.4 million by the end of the decade. The inability to contain such a virulent disease in poorer parts of the world is a threat to health further afield, especially in this age of unprecedented global travel.

From the perspective of stability and security, poverty is a serious trigger of conflict. This translates to wide, sometimes global, repercussions. *'Violent conflict disrupts lives and livelihoods, destroys societies and economies, and reduces people's access to basic services. It often leads to large-scale population displacement and abuse of human rights, and can leave a legacy of bitter social and ethnic division which can last for generations.'*[68]

66 United Nations Millennium Declaration 2000: www.un.org/millennium/summit.htm

67 www.un.org/reports/financing/index.html

68 DFID Conflict Reduction and Humanitarian Assistance, DFID Policy Statement, 1998.

Financing international development is not an act of charity, it is a cool-headed investment in a safer, more secure world. The 2015 target for achieving the MDGs is of vital importance because the immediate and severe nature of the developmental problems facing the world require an extraordinarily urgent response.

Paying for the MDGs

It is the contention of this report that no one income stream ought to bear the burden alone of the exceptional extra funds required to pay for the MDGs. Rather, that complementary initiatives are required. HM Treasury, for instance, are putting their weight and resources behind the International Finance Facility (IFF),[69] which is a bold proposal to frontload $50 billion of aid by borrowing against future ODA flows. The Tobin Tax Network describes the IFF plan (in its policy paper on the subject – see appendix VIII) as *'a refreshing and brave departure from the languid pace that has beset development finance in the past.'* However, as our paper goes on to assess, the IFF may not receive the level of political backing it requires to raise $50 billion each year. And even if it were to, the IFF offers no provision for funding after 2015. Once having seriously increased the pace of development progress, we contend it would then be irresponsible suddenly to slash resources when there would undoubtedly be so much still to achieve – the MDG target is to halve world poverty by 2015, so the job by that date will, at best, only be half done.

The CTT, by contrast, is estimated to raise in the region of $15 billion annually and to be a continuous source of funding (as long as FX markets continue to operate). It can clearly make an extremely beneficial contribution towards the doubling of world aid levels and the achieving of the MDGs. Additionally, as already described in Section 4, the CTT would decrease the likelihood of financial shocks in developing countries, which is often a cause of widespread poverty in the first place.

How will the CTT be raised and its revenues spent?

The two principle issues in relation to implementation of the CTT are firstly, technical considerations relating to imposing the tax, and secondly, political considerations involved in the distribution of the tax revenue.

Countries that levy a CTT would collect the taxation through their central banks (see 'The collection and enforcement of the CTT' in Section 2 of this report). These revenues would then be transferred to an international disbursement fund. The creation of such a fund can be achieved either through international agreement or treaty. Clearly, those countries that contribute through their CTT to building the international disbursement fund will want a say in how the money is spent. It is not the remit of this report to pre-empt the detailed discussion by ministers on how to administrate this fund.

Although the bulk of work on the CTT to date has been to deliver a tax proposition that is feasible and effective, there has been a scoping of different possible international bodies that ministers may consider in relation to disbursement of funds.[70] Our conclusion, at this stage, is that funding from CTT revenues to meet the MDGs is likely to be through an international disbursement body linked to the United Nations, rather than the IMF or the World Bank, with input from OECD countries that have adopted a CTT.

69 www.hm-treasury.gov.uk /documents/international_ issues/global_new_deal /int_gnd_iff2003.cfm

70 The Robin Hood Tax, report by War on Want and New Economics Foundation, 2001. Fax: 020 7261 9291

9 CTT progress and next steps

James Tobin first proposed the CTT in the 1970s, but it was not until the 1990s that the Tobin Tax started to be discussed by campaigners and politicians. It was particularly as a result of the South East Asian crisis of 1997–8 that campaigning organisations such as War on Want (UK), the Halifax Initiative (Canada), ATTAC (France) and 11.11.11 (Belgium) started to address seriously the problem of currency speculation. In all these countries except the UK we have seen progress at a governmental level, most recently with CTT legislation passed in Belgium on 1 July 2004. In the UK, the Chancellor of the Exchequer, Gordon Brown, has stated on many occasions that he views the CTT with an 'open mind'[71] as a possible means of financing international development.

The suggested use of CTT revenue to pay for poverty reduction is a comparatively recent development. This dimension of the CTT was not in James Tobin's original proposition because in the 1970s the market was one hundred times smaller than it is today. By the time campaigning organisations began to work for a Tobin Tax in the 1990s the FX market was turning over more than one thousand billion dollars each day. A great enthusiasm was generated over the potential of raising enormous revenues for international development by taxing the trade in currencies.

The momentum for the CTT to be used as an innovative income stream grew even greater as the world moved into the 21st century and its leaders signed up to the Millennium Development Goals (MDGs). In order to match the Tobin Tax to modern circumstances it became clear that the CTT proposition needed to focus both on how to prevent financial shocks and how to generate revenue. It was in response to this that Paul Bernd Spahn developed the two-tier Tobin tax, a variable CTT which normally operates at a very low rate to raise revenue for international development but can be raised significantly to curb excessive speculation. Over the last few years this Spahn variation of Tobin's tax has become widely recognised as the modern face of the CTT. Once combined with a base tax rate in the region of one basis point (0.01%), the CTT has become a realistic proposition to today's decision-makers.

It is this two-tier tax that has just passed into law in Belgium. The legislation is a blueprint of how to implement the tax in the UK, to pass it at an EU level and as the basis for an international CTT agreement. Its passage through the Belgium parliamentary process is testament to the fact that the currency transaction taxation is technically feasible. The reality now is that we are talking about a simple, inexpensive transaction charge on an area of the financial market that has hitherto enjoyed exemption from a tax on this aspect of its business. Governments can implement a CTT as they could any tax. The issue is one of political will.

Next steps

In 2005 the UK will hold the presidency of the G8 and the EU. It will be ten years to go to 2015, the date for many of the MDG targets to be met. The government has publicly stated great support for the MDGs but openly acknowledges that they cannot be paid for without doubling present levels of aid, an increase of fifty billion dollars each year. HM Treasury is keen to see

71 Gordon Brown explicitly supports exploration of innovative sources of financing development from November 2001 in a speech to the Federal Reserve in New York: www.staff.city.ac.uk/p.willetts/PIE-DOCS/GB161101.DOC

this immense funding gap filled by its flagship initiative, the International Finance Facility (IFF). It is our analysis that many complementary funding streams will be required in addition to the IFF if the MDGs are to be adequately financed (see Appendix VIII for the Tobin Tax Network's position paper on the IFF).

In the UK the Treasury is open to discussion on the merits of the advanced CTT proposition. In Europe, building on the significant recent progress in Belgium, campaign groups from across the continent are working together in an unprecedented coalition to achieve a CTT on the euro. Belgium is also now the strongest contender as a country to call for an international CTT conference where a timetable can be set for an international CTT agreement.

10 Responding to criticisms of the CTT[72]

The opponents of the CTT have made many criticisms in the past, the major ones of which are rebutted here, including those made by the IMF,[73] HM Treasury,[74] European Commission[75] and UK parliamentarians.

Most of these criticisms have been directed against earlier CTT propositions that envisaged a single-tier tax as high as 1%. Many of these criticisms do not apply to the advanced proposition of the CTT put forward in this report which sets out a much lower base tax rate of 0.005%.

1 The CTT would need to be put in place universally for it to work.

Technically there are two different ways to impose a CTT – either taxing the currency trading desks in a particular jurisdiction (eg: in the UK), or taxing the currency itself (eg: pound sterling). Our proposition is that the CTT be levied on currency, not jurisdiction. This would mean that once a country adopts a CTT, all FX trades involving its currency would be taxed, wherever they take place in the world.

A country's currency has little meaning outside its territorial borders. For example, pound sterling balances cannot exist outside the UK, so all non-UK financial institutions holding pounds[70] need to hold them in '*nostro*' accounts with UK-based banks. Hence, no two financial institutions can settle an FX transaction in pounds outside of this country.

When a country adopts the CTT, the central bank (or financial regulator) which oversees the settlement system in the local currency would need to take steps in order to ensure compliance with the CTT regime. If the UK adopts the CTT, the Bank of England (or Financial Services Authority) would require that all banks registered in the UK comply with the CTT regime by deducting the appropriate tax from currency transactions involving pounds.

Since all transactions involving the pound would need to go though UK banks, no matter if they are transacted in the US or the Cayman Islands, they would be subject to the CTT when they are settled in the UK.

This means that any country can unilaterally impose a CTT on its currency. The premise that the CTT has to be universal to work is simply not valid when this mechanism of taxing the currency itself is adopted. Clearly, in order to raise revenue for international development, it would be preferable for as many countries as possible to adopt the CTT. However, it is simply untrue to state that every country has to participate in a global regime for the CTT to work. Chile in the 1980s and Malaysia in the 1990s have successfully imposed taxes on their domestic currencies.

72 See Appendix VI for more technical rebuttals

73 Comments on the UNU/WIDER Project on 'Innovative Sources for Development Finance', Helsinki, September 2003, by Teresa Ter-Minassian, Director, Fiscal Affairs Department, IMF

74 Based on the author's conversations with HM Treasury officials.

75 'Responses to the Challenges of Globalisation', Commission of the European Communities, 2002

76 Including Eurocurrency pound sterling

2 It is pointless to implement the CTT as it would be evaded and avoided. Would the financial markets not invent new instruments? Would currency trading not migrate to offshore tax havens and other non taxed jurisdictions?

Contrary to what critics say, incentive for the evasion and avoidance of a CTT levied on a currency (as opposed to the jurisdiction in which a currency trade takes place) is very limited. Incentive to evade the CTT (or any tax) is to a large extent based on the level of the tax. Banks and other financial institutions will weigh the potential cost of evasion (penalty, suspension of licence, reputation risk and the actual technical costs of evasion through new legal entities and new instruments) against the costs of compliance (a small percentage of their total profits). At a very low tax rate of 0.005% the incentive to evade would seem to be very small, as the costs of evasion would appear to be much higher than the cost of compliance.

The scope for avoiding the CTT by using new instruments is also very limited. In our proposal we suggest that the CTT be levied on all transactions, regardless of their type and duration. This means that there is little scope for using exotic financial instruments to circumvent the CTT regime. There are costs associated with new financial instruments – given the small rate of the base tax, the additional costs of inventing substitutes would be higher than the tax that needs to be paid. Also, each type of a foreign exchange instrument serves a unique function and finding a perfect substitute that is not subject to tax is very difficult (see item 3 below). Tax regimes in a country are not static. The collection of taxes such as income taxes is a cat and mouse game in which tax payers constantly try to pay as little as possible and the tax authorities try to collect as much as possible. New rules and regulations can always be made to bring new instruments into the tax net.

The scope for avoiding the tax by relocating is also limited as, under our proposal, the CTT would apply to currencies not jurisdictions. This means that once a country implements the CTT, foreign exchange transactions involving its currency would be taxed no matter where they take place. Currencies of countries which have not implemented the CTT would not be taxed even if they were transacted in a country that has adopted the CTT. This means that there would be no benefits from relocating to offshore havens. In fact, such a move has significant relocation costs.

It can be argued that a proportion of companies will always try to evade taxes – such as income tax, VAT, inheritance tax – but this not a reason not to tax them. Despite the efforts of some to evade payment, the vast majority do pay their taxes and revenues collected are considerable. Also, due to the nature of the market, evasion is now technically difficult as virtually all foreign exchange transactions can be electronically traced. What is required is the political will to implement currency transactions taxation and provide the necessary legal enforcement to ensure payment and penalise evasion.

3 If the UK implements the tax unilaterally, will the FX transactions not simply migrate abroad and erode the market dominance of the City of London?

If the UK implements the CTT, it would mean that all transactions involving the pound will be taxed, not all transactions taking place in the UK. As the pound transactions will be taxed whether they happen in the UK or elsewhere there is no incentive for them to migrate. For the currency of another country such as Switzerland, that does not sign up to the CTT, trading

would not change, as no tax would be levied on the Swiss franc. Once again, there is no incentive to migrate.

This establishes that the introduction of the CTT by a particular country would not create any incentives for the geographical migration of trades to offshore havens or non taxed centres, as it would not create any additional advantages. In fact, moving operations is expensive and, given that the CTT would still be payable, there would be no incentive to move. The market dominance of the City of London would not, therefore, be affected by the UK adopting a CTT.

4 The tax would be difficult to collect due to the electronic nature of the market.

Some critics have said that the electronic nature of the market would make it easy to evade the tax, as currencies can move at the click of a button. As stated in response to item 1 above, the CTT would apply to all transactions, no matter where in the world they are traded, so moving a currency electronically would not allow traders to evade the tax.

In fact, the electronic nature of the market has made it much easier to collect the CTT inexpensively and reliably. Most transactions in the currency markets are already electronically recorded and settled. This means that the CTT can be automatically collected, either at the point of recording the deal or at the point of settlement, simply by adding a few additional lines of software code.

The electronic nature of the market also means that there is always an e-trail of transactions so that financial institutions would know there are clear risks if they were to attempt to evade the tax.

5 The higher costs of currency transactions would adversely affect trade and investment.

The CTT, at 0.005%, would result in a small increase in the cost of currency trading. This increase is insignificant as compared to the 5%–10% profit margin that is typical on export transactions.

We discuss in Section 5 how the reduction of volatility brought about by the CTT would actually increase world trade and investment and also enhance growth. The additional benefits accruing to both developed and developing country governments as well as businesses would, in fact, stimulate economic activity in all spheres of the economy and increase earnings.

6 The CTT would reduce the liquidity[77] in the market and this could increase volatility.

While opposing the practicality of the CTT, some economists have argued that implementing it would result in a much lower liquidity which, in turn, would lead to discontinuities in the currency markets. They have then gone on to argue that these 'gaps' in prices would actually increase volatility. While such a criticism might have had some validity for the single-tier CTT with a high tax rate of up to 1%, it is not valid for the two-tier version where the base tax is as low as 0.005%.

77 Liquidity is measured by the presence of sufficient numbers of buyers and sellers for a particular currency so a single deal does not change the price of a currency significantly. High liquidity comes about as a result of a diversity of beliefs not high volumes of transactions (See Appendix IV)

Technological developments have brought down the transaction costs in the foreign exchange markets, so now they are sometimes as low as 0.01%. The introduction of a CTT would increase the transaction costs in the FX market. However, even after including the CTT, the transactions costs will be lower than the levels prevailing in 1998 when currency markets were equally as liquid as they are today.

A detailed treatment in Appendix IV demonstrates that liquidity will not suffer[78] and the CTT would significantly decrease volatility.

7 The CTT, instead of stabilising currency markets, could actually hinder market stabilisation by preventing necessary adjustment in countries recovering from financial crises.

The CTT does not prevent a readjustment of exchange rates, especially when it is based on economic fundamentals. It merely allows such a readjustment to happen in a more controlled manner with less overshoot. Hence, it would also help bring about a more orderly readjustment in a country that is recovering from a crisis. Appendix IV shows how the introduction of the CTT significantly reduces the likelihood of the occurrence of a financial crisis in the first place.

8 The tax revenue would not contribute to development as money does more good if allocated by the market.

Currently, there is more than $50 billion that is disbursed in the form of overseas development aid (ODA) to poor countries. The IMF, the World Bank, the UN and all major donor and recipient countries agree that these ODA flows make a contribution to development and poverty reduction. That is why most governments in the world have signed up to achieving the Millennium Development Goals. The achievement of these goals requires about $50 billion of additional resources every year, of which the CTT can provide about $15 billion.

While some may feel that the money allocated by the market is more efficient, the fact of the matter is that the market is not allocating money where it is most needed. For several years now, developing countries have experienced a net outflow of resources when what they need is more resources. The CTT, by reducing volatility and freeing up wasteful currency reserves held by developing countries, helps remove some of the distortions in the international financial system. The increase in trade and investment that would result from the implementation of the CTT would encourage more market-based allocation of resources.

Some people argue that overseas aid is itself unproductive and wasteful as it does not benefit the poorest sections of society but ends up in the pockets of elite groups. It is of concern that the corrupt practices of a tiny minority undermine aid efforts and confidence in the provision of aid. In modern aid culture, transparent and accountable relationships for effective giving of aid have been developed to allay these fears. By and large, programmes and projects to provide such basics as clean water, hospitals, medicines and education are of great benefit to very many people in developing countries.

9 Would banks lose out as a result of the CTT?

The profits that accrue to the FX trading division of banks as a result of high currency volatility often come at the expense of other divisions, such as the lending division which suffers from erosion in quality of its emerging market loan portfolio.

Under a CTT, any reduction in the revenues of the FX division will at least be partially offset by higher profits in other areas of the bank's operation. These higher profits would come about as a result of lower volatility and an overall increase in the demand for banking services in a world economy enjoying higher growth, higher investment and increased trade.

So while it is true that the tax would mostly fall on the major banks involved in the FX market, it is unlikely that they would lose out a result of the implementation of the CTT.

APPENDIX I The foreign exchange market

What is the foreign exchange market?

The foreign exchange market is the generic term for the worldwide institutions that exist to exchange or trade currencies. Foreign exchange is often referred to as '*forex*' or '*FX*.' The foreign exchange market is an '*over the counter*' (OTC) market, that means that there is no central exchange and clearing house where orders are matched. FX dealers and market makers around the world are linked to each other around-the-clock via telephone, computer and fax, creating one cohesive market.

How did it come about?

The foreign exchange market has existed in one form or another as an essential complement to trade once it moved beyond just a simple barter system. Historically, most major currencies were linked to gold (the gold standard where currencies could be exchanged for gold any time), which was valued for its rarity, beauty and universal appeal. This linkage was either direct, in the form of using gold coinage, or indirect, through fixing a rate at which the currency could always be exchanged for gold. This underlying linkage to gold defined the rate at which one currency was exchanged for another.

The US and many other Western countries adhered to the gold standard during the early 1900s but it was steadily abandoned. In 1944 an agreement was reached on a new international monetary system. This Bretton Woods system, as it came to be known, was based on stable and adjustable exchange rates defined against the US dollar, which became the default reserve currency. The US dollar itself could be exchanged for gold at $35 per troy ounce. Exchange rates were not permanently fixed, but there were occasional devaluations of individual currencies to correct fundamental disequilibria in the balance of payments.

On 15 August 1971, US President Richard Nixon closed the gold window and the world entered the first era in its history in which no circulating paper anywhere was redeemable in gold. This action broke the last tie between gold and circulating currency, resulting in our modern financial system, which is called a *floating currency* system.

This advent of floating exchange rates among the major industrialised countries in the early 1970s, FX and financial market de-regulation since the late 1970s and the introduction of new technology are behind the developments in international markets for foreign exchange.

How big is the market?

The foreign exchange market is the largest market in the world, having grown exponentially since the collapse of the gold standard (Table 2). The daily market turnover expanded from $15 billion per day in 1973 to about US$150 billion in the mid-1980s to a staggering $1,500 billion in 1998. The period between 1998 and 2001 saw a marked decline in daily market turnover to $1,200 billion, mostly as a result of the introduction of the euro, though recent evidence suggests that the market is back on track for another period of explosive growth. The vast size

TABLE 2
Foreign exchange trading, world trade and global official reserves

Billions of US dollars and percentages

Source: Nissanke 2003

'Developing countries' are non-OECD countries

	1989	1992	1995	1998	2001
Annual global exports	3,027	3,762	5,130	5,444	6,121
Annual exports of developing countries	899	1,112	1,661	1,779	2,252
% share of developing country exports	29.7%	29.6%	32.4%	32.7%	36.9%
Global official FX reserves	715	925	1,385	1,638	2,039
FX reserves of developing countries	262	434	729	968	1,260
% share of developing country reserves	36.6%	46.9%	52.6%	59.1%	61.8%
Annual global FX turnover (250 trading days)	147,500	205,000	297,500	372,500	300,000
Global exports/FX turnover (%)	2.05%	1.83%	1.72%	1.46%	2.04%
Global reserves/exports (%)	23.6%	24.6%	27.0%	30.1%	33.3%
Global reserves/daily turnover (days)	1.21	1.13	1.16	1.10	1.70

of the market – $300,000 billion annually – can be represented by a stack of $100 bills that would stretch from the earth to the moon, over 200,000 miles away.

The FX market dwarfs world exports, which stood at US$ 6,121 billion in 2001. This means the ratio of global trade to global foreign exchange turnover is 1 to 50, an enormous change from about 1 to 3 in 1977. The entire world output of goods and services – Gross Domestic Product (GDP) – at $30,000 billion, is equivalent to just 10% of the turnover in the currency markets.

Global official foreign exchange reserves now total over $2,500 billion, having steadily increased from 25% of global exports in 1992 to 33% in 2001, especially in the wake of several currency crises. However, they still equal only 1.7 days of global currency transactions. This reveals the meagre capacity of monetary authorities to intervene in foreign exchange markets.

Is the market concentrated?

The foreign exchange market, despite being one of the biggest markets, is dominated by the biggest investment and commercial banks such as Citicorp, trading mostly G7 currencies in a limited number of locations.

The market is highly concentrated within established centres such as London, New York and Tokyo. In 2001, just ten countries – the UK (31.1%), the US (15.7%), Japan (9.1%), along with Singapore, Germany, Switzerland, Hong Kong, Australia, France and Canada – accounted for 85% of worldwide trading (see Table 3).

TABLE 3
Geographical distribution of reported foreign exchange market turnover

Daily averages in billions of US dollars and (in brackets) percentage share

Country	1989	1992	1995	1998	2001
UK	184 (25.6%)	291 (27.0%)	464 (29.5%)	637 (32.5%)	504 (31.1%)
UnitedStates	115 (16.0%)	167 (15.5%)	244 (15.5%)	351 (17.9%)	254 (15.7%)
Japan	111 (15.5%)	120 (11.2%)	161 (10.2%)	136 (6.9%)	147 (9.1%)
Singapore	55 (7.7%)	74 (6.9%)	105 (6.7%)	139 (7.1%)	101 (6.2%)
Germany	–	55 (5.1%)	76 (4.8%)	94 (4.8%)	88 (5.4%)
Switzerland	56 (7.8%)	66 (6.1%)	87 (5.5%)	82 (4.2%)	71 (4.4%)
Hong Kong	49 (6.8%)	60 (5.6%)	90 (5.7%)	79 (4.0%)	67 (4.1%)
Australia	29 (4.0%)	29 (2.7%)	40 (2.5%)	47 (2.4%)	52 (3.2%)
France	23 (3.2%)	33 (3.1%)	58 (3.7%)	72 (3.7%)	48 (3.0%)
Canada	15 (2.1%)	22 (2.0%)	30 (1.9%)	37 (1.9%)	42 (2.6%)

The market is also heavily concentrated in OECD currencies and is especially dominated by the dollar (45%), the euro (15%), the yen (10%) and sterling (5.5%). In stark contrast, all developing country currencies put together comprise only about 2.5% of the total volume.

The market is dominated by large international investment and commercial banks, with the top 30 such banks accounting for more than 80% of the market in 2001. There is a trend towards increasing consolidation in the foreign exchange market, driven by the big mergers seen in the financial services industry, whereby a smaller number of banks are gaining control of an ever-increasing share of the market.

Who are the main counterparties?

The market has always been dominated by inter-dealer (large banks) trading, though this has declined now from 70% of the turnover in 1992 to 59% of the turnover in 2001 (Table 4). Non-financial customer trades accounted for only 13% of the total market. Almost three quarters of inter-bank trade was international (cross-border), while nearly the same share of customer trade was domestic.

The transactions between banks and other financial institutions have increased to nearly 28% of the turnover, mostly as a result of the increasing role of asset managers (BIS 2002, p2). At the same time, the role of hedge funds in foreign exchange transactions has declined recently since the LTCM debacle[79] in 1998.

TABLE 4
Reported foreign exchange market turnover by counterparty

Daily averages in billions of US dollars

Source: BIS

Counterparty	1992	1995	1998	2001
Total	**776**	**1,137**	**1,429**	**1,173**
with reporting dealers	540	729	908	689
with other financial institutions	97	230	279	329
with non-financial customers	137	178	242	156
local (domestic)	317	526	657	499
cross-border (foreign)	392	611	772	674

What are the main instruments in the market?

The market has seen a rapid rise in the use of new and sophisticated foreign exchange instruments in the inter-bank market (Table 5). In 2001 the **spot** market, consisting of exchanges of two currencies that are settled within two business days, no longer accounted for the largest share of all activity, shrinking from 38% in 1998 to just 33%.

The **forward** market, which is similar to the spot market except that deals are settled more than two days hence, grew from 8.5% of the market to 11%. The outright forward market is suitable for hedging commercial risk. About 50% of this market is comprised of deals with customers, the balance being made up by inter-bank deals. Most trades are local and many involve domestic currency.

The **swap** market, consisting largely of agreements to exchange two currencies at one rate spot and to reverse the exchange to another rate forward, grew from 49% of the market to 55%

79 In 1998, Long-Term Capital Management (LTCM), one of the largest hedge funds, collapsed spectacularly chalking up losses of billions of dollars; this collapse threatened the stability of the global financial system and the New York branch of the Federal Reserve Bank arranged a private sector bail out in order to prevent such an eventuality.

TABLE 5
Global foreign exchange market turnover

Daily averages in April in billions of US dollars

Adjusted for local and cross-border double-counting. Source: BIS

	1989	1992	1995	1998	2001
Spot transactions	317	394	494	568	387
Outright forwards	27	58	97	128	131
Foreign exchange swaps	190	324	546	734	656
Estimated gaps in reporting	56	44	53	60	26
Total 'traditional' turnover	**590**	**820**	**1,190**	**1,490**	**1,200**
Memo: Turnover at April 2001 exchange rates	*570*	*750*	*990*	*1,400*	*1,200*

between 1998 and 2001. The swap market is suitable for hedging financial risk and engaging in *covered interest arbitrage*. Eighty-six per cent of this market is between banks, more than half of it is international and most of it involves the US dollar.

The **futures** market consists of standardised contracts for delivery of a currency at a date more than two days in the future. Currency **options** give the purchaser the right, and not the obligation, to buy or sell a set amount of currency at a set rate in the future. These two derivatives markets are growing but still constitute only a negligible share (about 1%) in terms of volumes. These are almost entirely inter-bank markets, involve the US dollar and are concentrated in the US and the UK.

Over what time period do the majority of FX transactions mature?

The FX market is characterised by a very short average maturity on all instruments. According to the BIS (Bank for International Settlement) survey, 38% of all outright forward and 69% of swap transactions have a maturity of no more than seven days – only 1% of swaps have a maturity of more than one year. Taken together with spot transactions, this means that more than three-quarters (76%) of the market's transactions have a maturity of a week or less. It does not make sense to do deals with such a short horizon for an investment motive. These transactions are mostly speculative and undertaken simply to take advantage of the rapid variation in exchange rates.

How profitable is the market?

The staggering size of the FX market may conjure up images of vast wealth and profits that must surely be generated – however, the impressions of fountains of gold are false. The market is profitable, undoubtedly, but nowhere near as profitable as it is large. The total profit in the market is of the order of $30–$40 billion[80] annually. While this is a substantial sum of money by any standards, it constitutes only about 10% of the total profits of the large banks in the world. Citicorp, the world's largest bank, for instance, earned about $1.7 billion from its FX operations in 2003 on a total profit figure of about $17 billion (Table 6).

The reason for this seeming discrepancy between the magnitude of the market and the size of actual profits, is razor thin margins. The largest inter-bank deals generate as low as 0.01% (1 basis point) in profit, although a range of 0.01%–0.04% is more typical.

This may appear surprising, since most people's experience of foreign exchange transactions is in the retail context, when changing money often seems expensive. Indeed, banks and exchange bureaus typically charge very high margins and additional commissions every time we need to

80 Some of the individual bank figures are listed in Table 6. This table, however, is not complete as it lists the FX profits only for banks that report them separately. More than half the banks, such as Goldman Sachs, Lehman Brothers, Morgan Stanley, Merril Lynch, do not report FX profits separately and hence are not on this list. The total profit figures are the authors' own estimates based on an analysis of the annual statements and conversations with industry insiders

TABLE 6
Top 30 global banks' FX dealing revenues 2003 and 2002[81]

Millions of US dollars and (in brackets) ranking

Source: FX Week 21/6/04

Bank	2003		2002		Notes
Citigroup	1,782	(1)	1,790	(1)	FX trading-related revenues
UBS	1,414	(2)	1,354	(2)	Group-wide FX and other trading income
HSBC	1,239	(3)	1,167	(4)	FX dealing profits
Royal Bank of Scotland	964	(4)	720	(8)	FX dealing profits
Credit Suisse Group	901	(5)	888	(5)	FX and banknote trading
Barclays Group	889	(6)	799	(6)	Wholesale and ??? FX income
ABN Amro	845	(7)	712	(7)	FX dealing revenue
Bank of Tokyo-M'bishi	806	(8)	550	(10)	Bank-wide FX revenue
Bank of America	549	(9)	532	(11)	FX trading-related revenues
Dresdner Group	450	(10)	316	(16)	FX and precious metals trading income
Royal Bank of Canada	439	(11)	347	(13)	FX revenue
Lloyds TSB	407	(12)	279	(17)	FX dealing profits (before expenses)
Standard Chartered	396	(13)	319	(12)	FX dealing income
S??? Street	391	(14)	300	(15)	FX trading revenue
Bank of Nova Scotia	365	(15)	285	(14)	FX and precious metals income
CIBC	336	(16)	237	(20)	FX trading and sales revenue
Bank of New York	327	(17)	234	(25)	FX and other trading revenue
Fortis?? Bank	314	(18)	254	(19)	FX gains
National Australia Bank	309	(19)	256	(18)	FX and FX derivatives income
ANZ	236	(20)	199	(23)	FX revenue
Bank of Montreal	174	(21)	141	(27)	FX trading and customer-linked revenue
Westpac	161	(22)	133	(29)	FX product revenue
Mellon Bank	147	(23)	146	(26)	FX revenue
C'wealth Bank Australia	135	(24)	137	(28)	FX earnings
Allied Irish Banks	116	(25)	82	(33)	FX profits
Northern Trust	110	(26)	106	(30)	FX trading profits
HBOS Treasury Services	109	(27)	95	(31)	FX dealing profits
Julius Baer??	90	(28)	62	(35)	FX and precious metals trading revenues
Saxo Bank	77	(29)	27	(–)	FX trading revenue (inc partner revenue)
Fleet Financial	71	(30)	59	(34)	FX revenue

exchange money for, say, travel purposes. Lloyds TSB, for instance, quoted me 1.42 sell and 1.57 buy rate for euros on 1 May 2004. This translates into a margin of more than 10% and is by no means the highest. Brokers who help remit money to developing countries can charge anywhere up to a 40% commission.

Though these retail margins are large, the total volume of retail transactions is very low, constituting only a fraction of 1% of the total turnover in the FX markets. Hence, it is correct to assume an average margin of 0.01%–0.03% for the market as a whole.

What is the structure of the market?

While the foreign exchange market is decentralised, and hence employs multiple market makers rather than a single specialist, participants in the FX market are organised into a hierarchy – those with superior credit access, higher volumes of trade, and sophistication receiving priority. At the top of the hierarchy is the inter-bank market, which trades the highest volume per day in relatively few, mostly G7 currencies.

81 Not all banks report their FX earnings. Consequently many top banks such as JP Morgan Chase, Deutsche Bank, Lehman Brothers, Morgan Stanley, Merrill Lynch are not in the table. The author estimates, that the total profits in the FX market are more than twice of what is reported in this table.

In the inter-bank market, the largest banks can deal with each other directly, via inter-bank brokers or through electronic brokering systems like EBS or Reuters. The inter-bank market is a credit-approved system where banks trade based solely on the credit relationships they have established with one another. All the banks can see the rates everyone is dealing at – however, each bank must have a specific credit relationship with the particular bank it is planning to trade with.

Other institutions, such as online FX market makers, hedge funds and corporations, must trade FX through commercial banks. Many banks (small community banks, banks in emerging markets), corporations, and institutional investors do not have access to these rates because they have no established credit lines with big banks. This forces small participants to deal through just one bank for their foreign exchange needs, and often this means much less competitive rates for the participants further down the hierarchy. At the very bottom of the hierarchy are retail customers seeking to exchange money – usually for travel related purposes – who receive the least competitive rates from banks and exchange agencies.

APPENDIX II Our proposal for the CTT

We are advocating the introduction of a currency transaction tax (CTT) to help create a more stable and improved climate for trade, investment and development. The CTT would achieve this by limiting the speculative and destabilising movements of capital, while maintaining its free movement for productive purposes.

The CTT would also reduce the likelihood of the occurrence of currency crashes – a significant cause of poverty – and thus mitigate the social, economic and environmental costs associated with such crises. The CTT would generate substantial revenues to help pay for the UN Millennium Development Goals (MDGs), which include halving world poverty by 2015, and provide significant improvements to healthcare and education.

Objectives of the CTT

The CTT will help fulfil the following objectives:

Reduction in currency volatility

The introduction of a CTT will lead to a reduction in currency volatility. This, in turn, will have a beneficial effect on growth and investment by aiding trade expansion, cross-border investment and long term planning through a decrease in uncertainty. This is fully described in Appendix IV.

Decreased likelihood of currency crises

Most currency crises are triggered by speculative attacks. It will be shown in Appendix IV that the CTT is a useful tool in defending currencies from speculative excesses. Currency crises are highly disruptive for trade, investment and development, and reducing their likelihood would help create a stable economic climate for growth.

Revenues for development

The revenues raised through the CTT would contribute to reducing world poverty and hunger and improve access to healthcare and education through the financing of the UN MDGs.

The operation of the CTT

Our version of the CTT draws on Spahn's proposal[82] of a variable two-tier tax. It envisages a very small base rate of half a basis point (0.005%), applicable to all transactions; and a very high, punitive, tax rate as high as 50% that kicks in to act like a circuit breaker in the event of high currency volatility.

The base rate tax is applicable to all currency transactions. At 0.005%, it would raise from $10–$15 billion revenue without disrupting the market seriously. The average wholesale transaction cost in the market varies between 0.01%–0.03%, having come down from 0.02%–0.04% in 1998. So effectively, the CTT would increase transaction cost to levels that are still well within those that prevailed in 1998 when the foreign exchange market was even larger and more liquid than it is now.

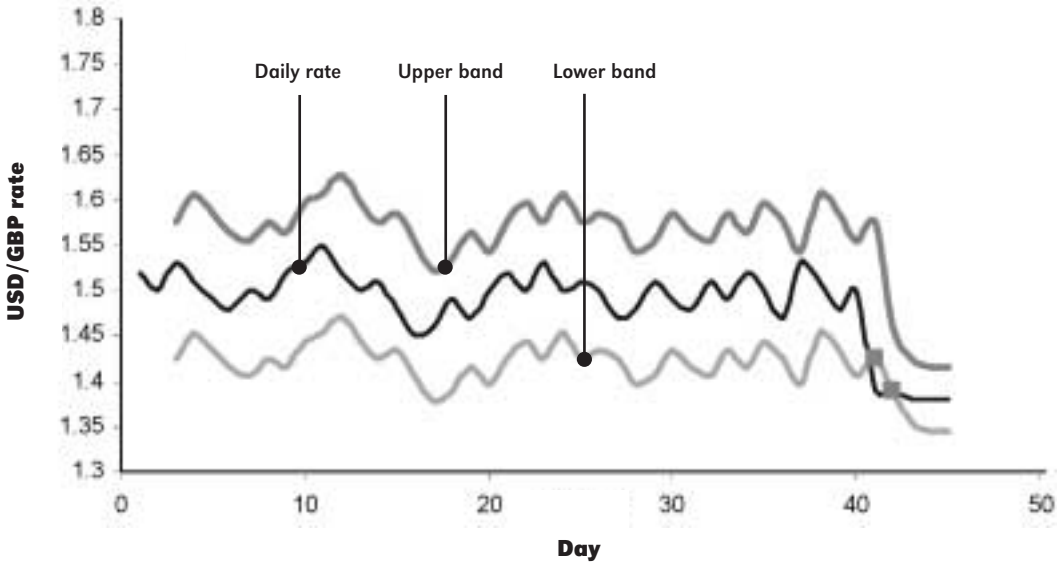
Speculative attacks induce sharp revaluations in currency rates. One way of thwarting these attacks, or at least mitigating their damaging effects, is to automatically impose a punitive tax of up to 50% whenever the currency changes in value by more than a normal amount in a trading period (the tax would apply only to the value of the currency outside the normal band)

82 See 'On the Feasibility of Tax on Foreign Exchange Transactions' Spahn (2001)

and act as a deterrent against speculation. This normal fluctuation can be based on a 5% (or any pre-specified amount) deviation around the exchange rate prevailing at the close of trading on the previous day.[83]

In the Figure 4, for instance, a 5% variation around the closing exchange rate from the previous day is used to define the band (corridor) of normal fluctuation. Any time the currency value falls outside the band, the punitive tax rate would be triggered. On day 41, for example, the corridor minimum is 1.425 but the actual exchange rate has fallen to 1.39, thus triggering the punitive tax (between the two small squares on the graph). In order to avoid paying this prohibitive tax, most participants would either wait till the rate normalises or transact at the corridor minimum rate of 1.425, where only the base rate of taxation applies.

FIGURE 4
How our CTT works



This circuit breaker and pause (slowdown) in currency trading gives the government time to take appropriate policy measures to thwart further speculative attacks. A number of times, these attacks are an overreaction to a piece of news or a statement by a central bank or finance ministry official. For example, in 2003 when Paul O'Neil, the then treasury secretary of the USA, made a statement saying he was in favour of a weak dollar, the dollar fell by more than 5% – this statement was then counteracted by other officials and the dollar bounced back. The overreaction to such news/statements on the foreign exchange markets would be significantly reduced by the CTT.

Also, the triggering of the circuit breaker can prove to be very costly to speculators who tend to make highly leveraged (with borrowed money) bets against a currency. At the same time, the CTT would not affect the readjustments to currencies arising out of fundamental long-term economic factors.

The tax would operate through dis-incentivising speculators from destabilising currencies by increasing the costs and risks involved in excess speculation. It has been argued that speculation is stabilising. However, this purely benign view of speculation has been largely discredited both in literature and practice (see Appendix IV).

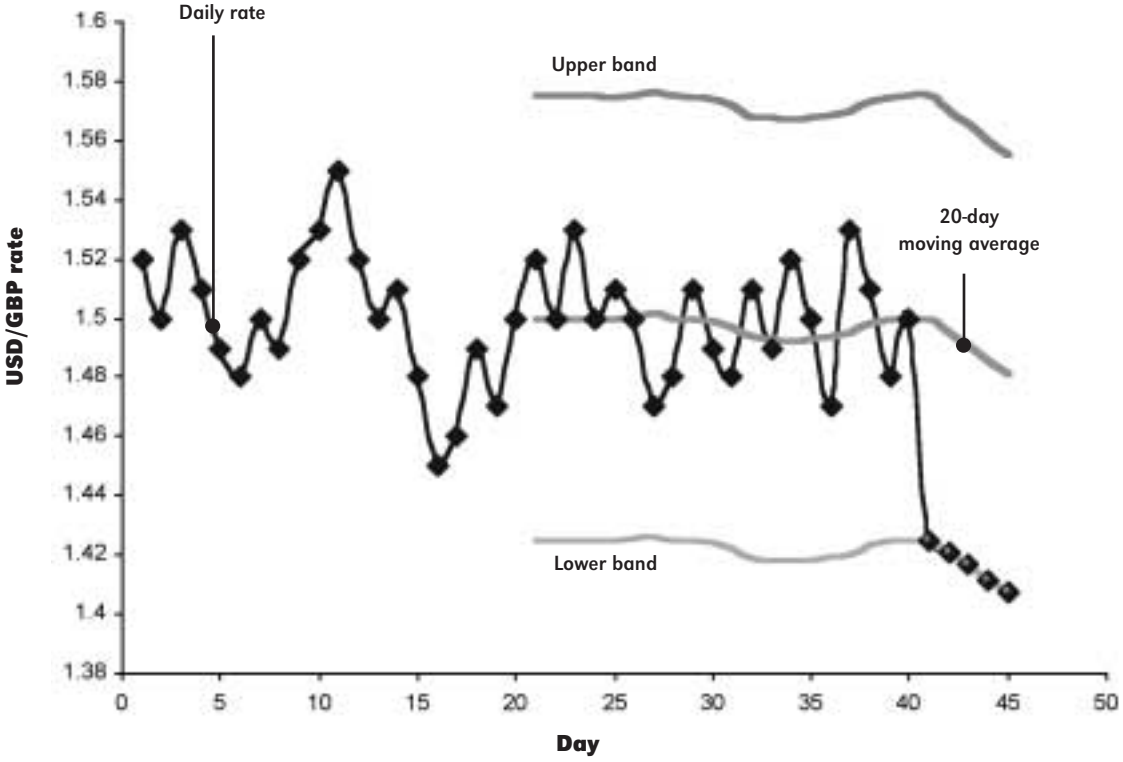
83 In fact, for reasons explained in the Appendix 2, we believe that it is best to use the closing exchange rate from the previous day, and not the moving average for a number of days, to determine the band of normal fluctuation.

Advancing on the Spahn proposal

In our CTT proposition and the proposal put forward by Spahn, the mechanics of the tax are similar. Spahn, however, suggests using a 20 day moving average (the average of the most recent 20 days) rather than the exchange rate from the previous day, in order to calculate the band of normal variation. However, this can result in some serious operational problems that our proposal overcomes.

Let us look at the exchange rate of the US dollar and the British pound. The working of the Spahn proposal is illustrated in Figure 5. Let us assume that a serious change has occurred in the relative fundamentals of the British and the American economies (such as an unexpected and large change in the interest rate by the central bank of one of the two countries) that justifies a change of 8% in the exchange rate from the level of 1.5 prevailing on day 40.

FIGURE 5
The problem with Spahn



We can see that on day 41 the exchange rate falls by a maximum permissible level of 5% and falls to 1.425. On day 42, however, the lower band has only moved from 1.425 to 1.420, despite the large fall in the exchange rate the previous day. This is because the 20 day average dilutes the effects of this fall to the extent that only about 0.25% or 1/20th of the total 5% magnitude of the fall gets incorporated into the band of normal variation. So the exchange rate (assuming it stays within normal bounds) will fall by only another 0.25% to 1.420. Now the next day, only 1/20th of this 5.25% deviation from the moving average – only about 0.26% – will show up in the band move. Even after five days of hitting the band, the currency would only be able to adjust by 6.2% against a required 8%.

Let us consider another example of a GBP/USD exchange rate (20 day moving average) of 1.5 with a normal band variation of 10%. There is a piece of bad news in the UK economy and the GBP falls in value to the limit allowed (1.65). Now the next day, the moving average base exchange rate will be 1.5075.[84] Using a 10% price limit, the most the price can fall to before the tax surcharge kicks in is 1.658 or only 0.05% lower than the price on the day before. This means that the effective 'band of normal variation', instead of being 10%, is limited to only 0.5%.[85] If the lower limit of 1.658 is again reached, only a 0.025% price fall is allowed the following day.

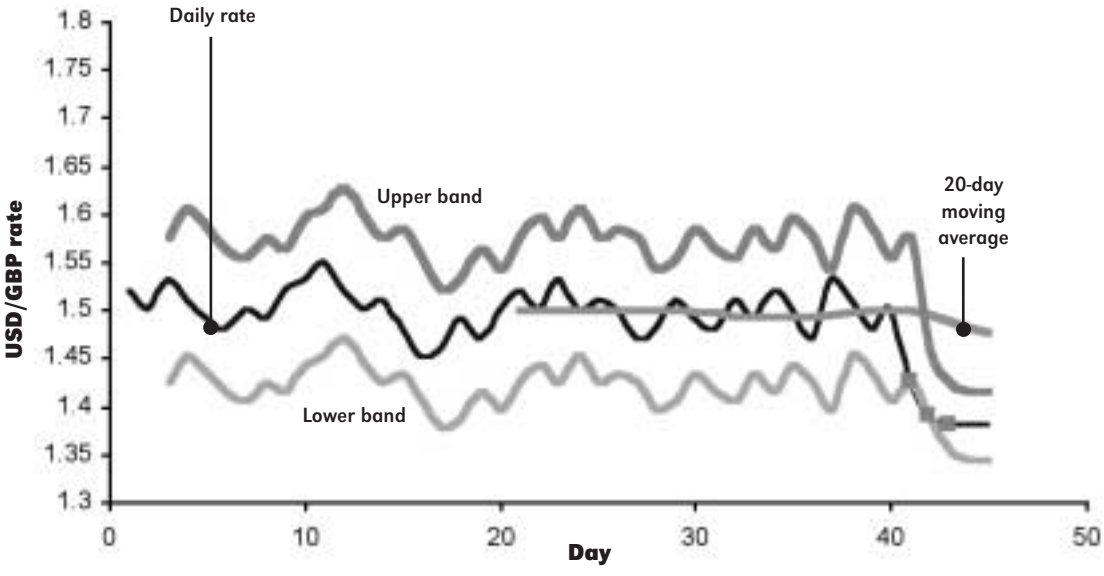
This means that, in the event of the top or the bottom of a band being reached, there is a very high likelihood of the band limit being repeatedly hit. This does not allow a proper adjustment of the exchange rate and is likely to have a disruptive effect on the market.

In order to overcome this obstacle, we recommend using the closing price from the previous day – not the moving average – to define the base rate that is used for the calculation of the band of normal variation. In case the currency has traded outside the band the previous day, we suggest that the value of the band, and not the actual currency value, be used for the next day calculation. The mechanics of our proposal are laid out in Figure 6. We also suggest that the width of the band should be reduced by about 50% in case the band has been breached any day in the most recent week.

On day 41 the exchange rate has fallen by the maximum allowable 5% from 1.5 to 1.425. On day 42 the band width has decreased from 5% to 2.5%, as discussed above, and once again the exchange rate falls by the maximum allowable limit of 2.5% from 1.425 to 1.389. On day 43 the rate falls again by 0.7% to the final adjusted price of 1.38, without breaching the limit.

Hence, under the mechanism suggested by us, the 8% adjustment discussed in the example above would take three days and not cause any significant problems with either liquidity or continuity. The Spahn mechanism, on the other hand, is much more inflexible and would need as much as ten days to incorporate an 8% adjustment, with the exchange rate hitting the limits on nine consecutive days. This can have serious adverse consequences for liquidity in the currency markets.

FIGURE 6
How our CTT works



84 Approximately (1.5 x 19 + 1.65 x 1) / 20

85 This happens as only one twentieth (1/20) of the price move of 10%, or 0.5%, is incorporated into the Base Exchange rate since it is the average of the exchange rate for twenty (20) days

The tax rate

Base rate

We propose that the CTT be introduced with a standard base rate of 0.005% (half a basis point). Once implemented, the tax rate can be varied either by individual governments or on the basis of an international agreement. The tax need not be identical across all currencies.

The market impact of the tax would depend to a large extent on the relative increase in the transaction costs after the introduction of the tax. This depends on the existing transaction costs in the market, which in a particular market segment (inter-bank for our purposes) vary across currencies, transaction size and type. Since the limiting (minimum) transaction costs are seen in the largest transactions, these are the ones we consider.

Table 7 shows the impact the CTT would have on the transaction costs of some typical currency pairs. There is no reason why different currencies cannot have a different tax rate. The Korean won leg of the dollar/won trade, for instance, can have a higher tax rate of (say) 2 basis points, while the dollar leg can have the 0.5 basis point discussed above. However, it is important to have a standard rate across a currency to prevent both the devising of transactions to minimise taxation and a higher administrative burden.

TABLE 7
Typical transaction costs in basis points

Currency pair	Typical transaction costs	Increase in costs with 0.005% CTT
Dollar / Euro	1.1	91%
Dollar / Yen	2.3	43%
Dollar / Pound	2.1	48%
Dollar / Swiss Franc	3.1	32%
Dollar / Mexican Peso	8.0	13%
Dollar / Korean Won	8.0	13%
Euro / Danish Kroner	1.0	100%
Euro/ Polish Zloty	11.0	9%
Pound / Swiss Franc	3.0	33%

Surcharge rate

The tax surcharge, applicable once a currency starts trading outside the band, needs to be punitive to be effective. What is important is that the rate is pre-specified and transparent so the market knows what to expect. The very presence of the punitive tax surcharge will act as an effective disincentive against speculative behaviour. Even without being triggered, the tax surcharge can prove to be very effective in keeping the value of a currency within the normal band.

This tax surcharge (on the amount outside the trading band) can also be seen as an equivalent higher effective tax rate on the whole amount of the currency transaction. This is clearly highlighted in Tables 8 and 9, where the first column shows the band violation. For example, if the top of the band is 102.5 but the actual exchange rate goes up to 133, then the band violation is 30%. The next sets of columns show the effective tax rate (on the whole transaction) for different tax surcharge rates of 25%, 50% and 100%.

We recommend that a lower value of close to 50% should be used at the first introduction and then, in case it proves to be ineffective, it can be revised towards 100%. Of course, different currencies can have different values for the surcharge. As a rule of thumb, currencies with a

TABLE 8
Effective tax rates when exchange rate exceeds top of band (102.5 in this case)

Band violation	Exchange rate	Effective tax rate when surcharge is set at... ...25%	...50%	...100%
0%	**102.5**	**0%**	**0%**	**0%**
10%	112.8	2%	5%	9%
20%	123.0	4%	8%	17%
30%	133.3	6%	12%	23%
40%	143.5	7%	14%	29%
50%	153.8	8%	17%	33%

TABLE 9
Effective tax rates when exchange rate falls below bottom of band (97.5 in this case)

Band violation	Exchange rate	Effective tax rate when surcharge is set at... ...25%	...50%	...100%
0%	**97.5**	**0%**	**0%**	**0%**
10%	87.8	3%	6%	11%
20%	78.0	6%	13%	25%
30%	68.3	11%	21%	43%
40%	58.5	17%	33%	67%
50%	48.8	25%	50%	100%

history of high volatility/speculative attacks should use a higher surcharge rate than more stable currencies.

The base exchange rate

We suggest that the base exchange rate should simply be the exchange rate from the previous day. This means that the normal band of variation would always allow the specified percentage price move from the closing price on the previous day. In the instance where the normal band is breached – say the exchange rate falls to 1.7, beyond the normal band limit of 1.65 – we propose that the normal band limit (1.65 in this case) be used in the calculation of the base exchange rate the next day. This means that one single transaction (say there is only one transaction at 1.7 and all the others happen at 1.65) cannot have a disproportionate impact on the exchange rate band the following day.

We would also need to specify the reference currency that is used to define the base exchange rate. For instance, the exchange rate for the Indian rupee could be defined in terms of either the US dollar or the pound sterling. The simplest answer for most developing country currencies would be the US dollar, as the dollar is on one side of about 90% of all trades in the foreign exchange markets. However, given the recent volatility of the dollar against most other currencies in the world, this may not be the best solution. A sudden change in the value of the dollar due to issues in the US economy could end up triggering the tax surcharge for a number of developing countries.

The use of a basket of currencies to determine the reference exchange rate can help mitigate the problem of volatility arising from the use of a single currency. The trade weighted exchange rate basket,[86] which is far less volatile than the simple exchange rate against the US dollar, is one such possibility, although it does make the calculations somewhat complex.

In order to achieve a balance between accuracy and administrative simplicity, we therefore propose that countries use an index constituted as a weighted average of the four most frequently traded currencies in the world – namely the US dollar, the euro, the Japanese yen and the British pound.

86 An average of the exchange rate of the home currency against the currencies of its major trading partners weighted in proportion of their share in the trade.

The timing issue

The exchange rate that is used would need to be specified in terms of: the market (inter-bank or exchange); the time (say end of business day 5pm or midday); and whether it is the midpoint, the bid or the ask rate. For the purpose of transparency and in order to avoid any ambiguity, it is best if the central bank makes an official announcement at a fixed time every day as to what exchange rate would go into the calculation.

In order to move from one base exchange rate to the next (ie: from one day to the next), we suggest that the central bank uses market opening time (mostly 7 or 8am), but this can vary across currencies.

The band width

The band width is the margin on either side of the base exchange rate within which the currency transactions would not attract a surcharge. This is the so-called 'normal' range of variation. The band width could either be specified as the European Exchange Rate Mechanism (ERM) band widths were, or be left free to be determined by the markets through the mechanism described below.

Again, there is no reason for policies across currencies to be the same and, in fact, each government can use the mechanism that they think works best for them. For governments that want slightly greater control of their markets, it makes sense to specify percentage limits such as +/– 2.5% of the base exchange rate. For governments with greater confidence in the market mechanism, the bands can be derived from recent fluctuations in the markets – a more volatile market would translate into broader bands than a more stable market, which would have narrower bands. So in this case, not just the base exchange rate, but also the band width, adjusts according to recent market developments and accounts for them, while still being grounded in fundamentals.

This market mechanism for the band width is based on a multiple of the standard deviation (a measure of variability) of the exchange rates prevailing in the most recent 20 days (or as specified).

There is no reason for the band width to be symmetric both above and below the base exchange rate, and a currency could well have width limits specified as –2.5% / +5%, which means that a maximum variation of 2.5% below the base and 5% above the base is allowed. Normally, a currency with a history of high volatility and speculative attacks would use fixed specification and tighter ranges than a currency with a stable history.

On this point, we recommend the use of market-based band width mechanisms that, if applied historically, do not get triggered more than once every six months on average. We suggest this as there are additional administrative and efficiency costs every time the surcharge gets triggered and a balance needs to be reached between discouraging speculative attacks and letting the market run its normal course.

How would the CTT be collected and enforced?

In our proposal for the CTT we suggest the tax should be levied on a currency, not a jurisdiction, and that it should be collected at settlement where possible.

A currency is a claim on the central bank of a country and only has real meaning when held either as currency notes or as a deposit in a bank that comes under the aegis of the central bank of the country to which the currency belongs. The central bank or the financial regulator in the country are very well placed to know what is going on, especially in the exchange rate market. Of course, some central banks/regulators keep a closer watch than others, but the point is that they can all play 'Big Brother'.[87]

Some argue that it is conceivably possible to hold large amounts of currency in the form of cash for the purpose of FX transactions, perhaps in offshore centres, away from the prying eyes of the authorities. But this is wholly unrealistic – it is not feasible to have a wholesale currency market settled purely in cash.

When traders buy or sell currencies, they do not hold them as cash. The currency is either put into interest-bearing deposits or used to purchase securities – mostly government bonds. If a currency were to be settled in cash and the buyer wanted to earn interest, it would be very difficult for them to circumvent the banking system, and the cash would in almost all instances need to be deposited in a bank in order to make a return. There is, of course, a black or informal cash market for foreign exchange, especially in some developing countries, but this has significant costs associated with it and transaction costs of as much as 5%–10% are the norm. They are also mostly illegal and participating in them is a criminal offence.

It is hard to conceive of currency traders operating legitimately using such a market, paying 5%–10% in transaction costs and taking considerable risks simply to avoid a 0.005% tax.

Tax base

The tax would be currency-based, not jurisdiction-based. So in the case of the UK signing up to the CTT, it would enact legislation that imposed the tax on all GBP transactions wherever they happened in the world. The non-GBP foreign exchange transactions transacted in the UK would not be covered.

Collection

We propose that the tax be collected at the point of settlement. This could either take place at the Continuous Linked Settlement Bank or through payment settlement systems such as the RTGS and/or CHAPS. The responsibility of the payment should lie with the bank responsible for the transaction or the correspondent bank (in case the transacting bank is a foreign bank) that holds the 'nostro' account.

87 'Big Brother', the ever-watchful eye of the state, in George Orwell's '1984'.

APPENDIX III The CTT is a mainstream idea

Opponents of the Tobin Tax often try and dismiss it as a utopian and outlandish idea. However, this could not be further from the truth.

Conceptually, the first tier (base rate) Tobin Tax is very similar to Security Transaction Taxes, which are taxes levied on the buying and selling of financial securities such as bonds, stocks and property deeds. Countries such as the UK, US and Belgium have existing and well functioning security transaction taxes in operation.[88] The UK, for instance, made £4.5 billion from the Stamp Duty Reserve Tax in 2003.[89] Security transaction taxes in the US raised $2.2 billion in 2000.[90]

The second tier (surcharge) part of the Tobin Tax is nearly identical conceptually to circuit breakers such as trading halts and price limits that exist in stock exchanges and is designed to have similar impacts. These circuit breakers work to stop excess volatility and speculation and to stabilise market conditions. Though they have been in existence in one form or another for many years, their use became widespread after the US stock market crash of 1987. All major stock exchanges, such as the New York Stock Exchange and the Tokyo Stock exchange, now have some form of circuit breakers.

Currency transactions are already taxed in some countries such as Turkey, Brazil and Venezuela. A majority of countries have some form of controls applicable to currency trading such as withholding taxes and dual exchange rate regimes. The regulation needed to support such measures is far stricter than the controls needed to implement the CTT.

This shows that the ideas and methods behind our proposal for the CTT are neither radical nor new but merely combine the existing mainstream ideas of security transaction taxes, circuit breakers and currency oversight into one viable proposal for a CTT.

In fact, these three existing regimes – security transaction taxes, circuit breakers and currency oversight – can be used to provide realistic inputs into, respectively, the design of the base tax, the design of the tax surcharge and mechanisms to ensure compliance with the CTT. Below we illustrate how the components of today's CTT conform with mainstream financial operations.

Security Transaction Taxes (STT) and the CTT

How is a currency a security?

A financial security is defined as a formal claim on an asset. Stocks (shares) are a good example of a security and are essentially a claim on the business (and the assets of the business) that issues them. Similarly, government bonds (treasuries in the US) are a claim on the government (and its assets) that issues them. In these terms, a currency can also be seen as a security, as it is a claim on the assets of a country. For example, a person with £100,000 could buy assets in the UK such as a property, shares or UK government bonds.

As holding a dollar does not generate a steady flow of income, a currency is more similar to a share rather than a bond. The income/loss generated from holding the currency security (dollar for instance) is through the increase/decrease in the market value of the asset currency against the home currency (pound in our case). So if a resident of the UK sells their pounds to buy dollars and then holds on to them, their income/loss would be determined by the change in the

88 Habermeier, M and Kirilenko, A 2001

89 From http://www.statistics.gov.uk/

90 Pollin, Baker, Schaberg, 2001

market value of the pound against the dollar. Of course, the dollars are unlikely to be held as an idle cash balance but would be used to buy income-generating assets such as bonds.

More recently, currency has increasingly become an important asset class (security) in itself as evidenced by the proliferation of currency only hedge funds, investment-vehicles and strategies. Another source of the evidence for the growing importance of currency as an asset is the increasing coverage in the financial press that now refers to it as an independent asset class.[91]

Does any country have security transaction taxes?

Security transaction taxes (STT) are not a new or uncommon phenomenon but instead have been around for a long time and are thriving. Most of the G-10 countries (a group of countries with the largest financial markets) have levied security transaction taxes at some point in time; Canada is the only exception having never had a STT.

Of these, the United States, UK, France, Belgium and Switzerland have existing STT regimes. The other G-10 members have (relatively recently) dismantled the STT regimes they had; Japan 1999, Italy 1998, Sweden and Germany both 1991 and the Netherlands 1990. However, while there has been some movement towards the removal/reduction of STTs, this is counterbalanced by recently imposed STT regimes in India (2004), Argentina and Colombia (2000), Greece (1998) and Finland (1997). In fact, Greece doubled its STT in 1999.

In the US, Security transaction taxes apply to transactions in publicly traded shares and exchange traded futures and options. For a long time a tax rate of 1/300 of 1% – 0.0033% applied to the face value of shares. This raised $1,090 million in 2000. In 2002, the tax was reduced to 1/883 of 1% – 0.0012% of the value of the transaction in securities. The fee is collected by the Self-Regulatory Organisations – namely the New York Stock Exchange and National Association of Securities Dealers – and goes to cover the cost of the regulator – the Securities and Exchange Commission. The public trading of futures and options is also taxed on behalf of customers; this tax was also recently lowered in 2002 to $0.10 on round-trip trades in futures and $0.05 in options.

In 1990, the US government reviewed a proposal during the budget negotiations for a broad based 0.5% tax on transactions in stocks, bonds and exchange traded derivatives. In 1993, the Clinton administration proposed a fixed 14 cent charge on transactions in futures contracts and options on futures.

This discussion clearly shows how STTs are a part of everyday life in most financial markets and that the currency market is exceptional in not having any tax imposed on it by the regulatory authorities. There is no reason why a STT should not be extended to currency markets.

Two examples of STT regimes

The best point of reference would be to start at home and look at the STT regime in the UK. This is relevant, as London is one of the most important financial centres in the world; home to top investment companies, banks and other financial institutions.

The UK has had a 0.5% (one of the highest in the world) tax on all share transactions in UK incorporated companies. It is chargeable whether the transaction takes place in the UK or overseas, and whether either party is resident in the UK or not. In 2000–2001, the tax raised

91 See the Financial Times or FX week

TABLE 10
Table of Security Transaction Taxes

Source: 'Applying a Securities Transaction Tax to the US: Design Issues, Market Impact, Revenue Estimates', Robert Pollin, Debating the Tobin Tax, New Rules for Global Finance, 2003

Country	Stocks	Corp bonds	Govt bonds	Futures	Detail
Argentina	0.60%	0.60%	0.60%	0.60%	Tax of 0.6% on all financial transactions approved by legislature March 2000
Australia	0.30%	0.15%	–	–	Reduced twice in 1990s; currently 0.15 each on buyer and seller
Austria	0.15%	0.15%	–	–	Present
Belgium	0.17%	0.07%	0.07%	–	Present
Brazil	0.3% [0.38%]	0.3% [0.38%]	0.3% [0.38%]	–	Tax on FX reduced from 2% to 0.5% 1999, stocks increased and bonds reduced
Chile	18% V*	18% V*	–	–	Present
China	0.5% or 0.8%	[0.1%]	0	–	Tax on bonds eliminated 2001, Higher rate on stocks applies to Shanghai exchange
Colombia	1.50%	1.5%	1.50%	–	Introduced June 2000
Denmark	[0.5%]	[0.5%]	–	–	Reduced in 1995, 1998, Abolished effective Oct. 1999
Ecuador	[0.1%]	1.0%	–	–	Tax on stocks introduced 1999, abolished 2001. tax on bonds introduced 1999
Finland	1.60%	–	–		Introduced January 1997; applies only to trades off HEX (main electronic exchange)
France	0.15%	See note	–	–	Present
Germany	[0.5%]	0.4%	0.2%	–	Removed 1991
Greece	0.60%	0.60%	–	–	Imposed 1998; doubled in 1999
Guatemala	3.00%	3.00%	See note	–	Present
Hong Kong	0.3% +$5 SF	[0.1%]	[0.1%]	–	tax on stock transactions reduced from 0.6% 1993; tax on bonds eliminated Feb. 1999
India	0.50%	0.5%	–	–	Present
Indonesia	0.14%+10% V	0.03%	0.03%	–	Introduced 1995
Ireland	1.00%	–	–	–	Present
Italy	[1.12%]	–	–	–	Stamp duties eliminated 1998
Japan	[.1%], [0.3%]	[0.08%], [0.16%]	–	–	Removed April 1999
Malaysia	0.50%	0.5%	.015% [.03%]	0.0005%	Present
Morocco	0.14% + 7% V*	7% V*	7% V*	–	Present
Netherlands	[0.12%]	[0.12%]	0	–	1970–1990
Pakistan	0.15%	0.15%	–	–	Present
Panama	–	–	–	–	stamp duties eliminated Jan. 2000
Peru	18%V*	18% V*	–	–	Present
Philippines	[0.5%] +10% V*	–	–	–	VAT present
Portugal	[0.08%]	[0.04%]	[0.008%]	–	Removed 1996
Russia	0.8%sec[1] +20%V*	–	–	–	Present
Singapore	0.05% + 3% V*	–	–	–	Reduced 1994, eliminated 1998; VAT present
South Korea	0.3% [0.45%]	0.3% [0.45%]	–	–	Reduced 1996
Sweden	[1%]	–	–	–	Removed 1991
Switzerland	0.15%	0.15%	0.15%	–	Present; 0.3% on foreign securities, 1% on new issues
Taiwan	0.3% [0.6%]	0.1%	–	0.05%	Reduced 1993
United Kingdom	0.5% V*	–	–	–	Present
United States	0.0012% [0.0033%]	–	–	$0.10	Present, Reduced in 2002
Venezuela	0.5% [1%]	–	–	–	Reduced May 2000
Zimbabwe	0.45% V*	–	–	–	Present

£4.5 billion in revenue and had the lowest cost of collection of all major taxes[92] (0.09% as opposed to an average collection cost over all major financial taxes of 1.11%). This shows that the STT regime in the UK is thriving and raises significant revenues (2000–2001 revenues were 14% of all corporation tax collected in the UK) at a time when some of the other major economies have dismantled their STT regimes.

The Stamp Duty on shares in the UK was introduced in 1963 at a rate of 1% and in 1974 was revised upwards to 2%. It was reduced in 1984 to 1% and then again in 1986 to the current level of 0.5%. This level of 0.5% on the market value of a security is payable by the buyer. There is at present no tax on derivative securities but the transfer of a share to a nominee owner (to be re-issued as non taxable depository receipts) attracts a triple rate of 1.5%.

Instead of focussing on both successful and unsuccessful examples of STT regimes, opponents of the CTT have chosen to talk just about the Swedish experience, which was a failure by most measures. In 1984, the Swedish government introduced a tax of 0.5% on both the sale and purchase of equities. This was payable only in the case of a Swedish Brokerage service being used. The tax went through many changes of rate but the basic structure remained the same. In 1989 a similar albeit smaller tax was imposed on the trade of fixed income securities, including government debt and associated derivatives, such as interest rate futures and options.

As a result of these taxes, a significant amount of trading in Swedish stocks migrated overseas. At the extreme only 23% of the trading in Ericsson, Sweden's most actively traded stock, took place in Sweden in 1989. The average for the market as a whole was 57%. There is little evidence of a fall in the overall size of the market; most trading just migrated overseas in order to evade the taxes imposed on Swedish brokers. In the fixed income markets the effects were even more dramatic; bond trading fell by 85% and bills trading fell by 20% within a week of the tax being introduced. This was accompanied by a sharp increase in trading in untaxed fixed income instruments such as debentures, variable rate notes, forward rate agreements and swaps all of which served as close substitutes for the taxed instruments.

The Swedish STT experiment came to an end in 1991 when all the transaction taxes were abolished. The markets in both fixed income and equities soon recovered to pre tax levels.

Can any lessons for the CTT be drawn from these STT regimes?

The two STT regimes discussed above offer many policy lessons for the implementation of a CTT.

The major difference between the Swedish and the UK STT regime was that the Swedish tax was a domestic tax on international capital whereas the UK tax is an international tax on domestically registered companies.

The lesson here for successful implementation of the CTT in the UK is that the tax needs to be imposed on the trade of all British pounds, no matter where in the world they are traded and no matter how the counterparties trade. Because if HM Treasury only taxes currency trades in the UK, similarly to Sweden just taxing their domestic brokers to levy their STT, then it would be easy to legally evade through offshore migration. For a successful design of the CTT, therefore, the tax has to apply to the British pound itself, and not to a jurisdiction or a channel of trade. If it operates in this way it would be next to impossible to evade through any legal channels.

92 Hawkins and MaCrae, 2002

The Swedish fixed income market saw a rapid migration of trades from taxed instruments to untaxed instruments that could act as close substitutes. This shows that it is important to cover all close substitute instruments when imposing a CTT. This being said, though equity derivatives in the UK are not taxed, the UK market has only seen a small migration of trades from the taxed share market to the untaxed derivative market. This shows that derivative instruments are not perfect substitutes for the underlying financial instrument. This is also partly as derivatives get less preferential treatment in the UK for accounting and reserve purposes.

The next lesson can be drawn by looking at the fact that no mass migration of shares to depository receipts has been seen in the UK market. The purchase of shares for the purpose of issuing non-taxable depository receipts, the creation of non-taxable bearer instruments and for the purpose of transferring into clearing services is all taxed at 1.5%, three times the standard tax rate. This high initial cost of transfer and the fact that these instruments are not perfect substitutes for owned shares in the UK have both helped deter a mass flight from shares into these untaxed instruments. A currency equivalent of overseas depository receipts is the offshore holding of Eurocurrency deposits. This can be discouraged either through making offshore holding of currencies illegal (as Malaysia did in response to the South East Asian crisis) or by imposing a very high exit cost as in the case of UK shares.

The original stamp duty in the UK was payable whenever there was a transfer of the paper share certificate from one owner to the other. However, when an electronic settlements system, called CREST, was introduced in 1996, a new tax called the stamp duty reserve tax (also simply called stamp duty in this text) was introduced on the electronic transfer of ownership. This made collection much easier and less expensive; only 0.02% cost of collection as compared to the 1.11% average for other major financial taxes. This shows that the recent trend of the FX market towards increased electronic trading and settlement (especially the Continuous Linked Settlement Bank) would make it much easier and cheaper for governments to administer and collect the CTT. Most of the FX is already traded electronically.

Another relevant lesson that can be drawn from the UK stamp duty experience is that international co-operation on STTs is possible. As the stamp duty is payable no matter where shares in UK incorporated companies trade, there is a need for international co-operation which has been forthcoming. Another good example of international co-operation is that between the Irish and the British governments who share the stamp duty revenue collected on the trade of Irish shares in the UK.

The UK stamp duty structure provides an excellent framework on which to develop a successful CTT regime. The fact is that the UK raises upwards of £4 billion in revenue every year through the stamp duty. As well, the London Stock Exchange remains the second largest exchange in the world despite having a stamp duty which is not payable in most competing exchanges. Both points are testament to the enduring success of the UK stamp duty regime.

Stock exchange circuit breakers and the STT[93]

There has been a sharp decline in the number of fires and fatalities caused by faulty electrical appliances. Most of this reduction can be attributed to the increasing use of electric circuit breakers at home and work. These work by automatically disconnecting the electricity supply whenever a fault in an electric appliance causes too much current to flow through the system.

93 See http://www.sec.gov/answers/circuit.htm and http://invest-faq.com/articles/exch-circuit-brkr.html

The electricity supply can then be easily reconnected once the offending appliance is removed or the circuit repaired.

On 'Black Monday' the 19 October 1987, the S&P 500 (a broad based index of US shares) lost 20.5% of its value, and the DJIA (another index of US equities) lost 22.6% of its value. This was the single biggest fall in the history of any major stock market and almost resulted in the breakdown of the whole financial system. In the wake of this, several studies were set up to determine what happened, why it happened and what could be done to avoid a recurrence. Chief among the studies were those of the Presidential Task Force on Market Mechanisms (Brady report), the Security and Exchange Commission's Division of Market Regulation (Market Break Report) and the presidential Working Group on Financial Markets (Working Group report).

Both the Brady report and the Working Group report called for the implementation of coordinated, market-wide trading halts and re-openings that would essentially work as circuit breakers. The reports reasoned that these circuit breakers were necessary to protect markets and investors from large, rapid market declines that might damage the market's infrastructure and create panic conditions. The Working Group report recommended that the US markets for equity and equity related products should halt trading for one hour if the DJIA declined by 250 points from its previous day close and for two hours if it declined 400 points. This was equivalent to about 12% and 20% of the DJIA value at that point in time.

These trading halts that serve as circuit breakers were subsequently introduced in the New York Stock Exchange. They have since been adopted by many other stock exchanges in the world such as the Taiwan Stock Exchange.

Even other stock exchanges that do not have the provision for trading halts have other forms of circuit breakers. The most common circuit breakers, which are used by almost all exchanges in the world, are price limits. Unlike trading halts, price limits have been in existence for a very long time and apply to individual stocks rather than to the whole index.

These price limits define a normal band of variation within which a stock price can fluctuate within a day. Conceptually, it is similar to the normal band of variation defined by the second tier of the CTT. All stocks on the Bombay Stock exchange, for example, have a price limit of 8% in a single day. This means that the stock exchange does not allow the trading of a stock at a price that deviates more than 8% from the closing price on the previous day. The second tier of the CTT does not quite go this far; rather than completely disallow all currency trades outside the band of normal variation, it would make them very expensive.

Price limits and trading halts for stocks, and the second tier of the CTT, both have a similar effect on market dynamics and serve to reduce volatility and discourage excessive speculation.

APPENDIX IV The CTT – decreasing volatility and reducing the likelihood of currency crises

How is the value of a currency determined?

Currency exchange rates are the most important macroeconomic price, determining the relative worth of assets, goods and services in one economy against those in another. Exchange rates ought to be determined by fundamental economic factors such as resource endowment (the intrinsic wealth of a country in terms of natural and human resources) and growth. These economic fundamentals are relatively stable over extended periods of time thus suggesting that the exchange rates should also be stable. Yet it is clear that floating exchange rates exhibit high volatility especially over short and medium term horizons. This instability is explained by the fact that currency values are also influenced by technical and psychological factors which dominate in the short to medium term.

Like all other prices, exchange rates are also determined by supply and demand at any given point in time. This supply and demand in turn is determined by the underlying need for transacting in a particular currency. This could be for the purpose of trade in goods or services, for investment (long term foreign direct investment or shorter term portfolio investment) or purely for speculation.

Currency speculation is the trade of different country currencies with the sole purpose of making an expected profit from their purchase and sale, based on their changing values. Speculative transactions have little to do with trade in goods and services or even investment in assets in an economy.

What are the factors influencing the value of a currency?

Fundamental factors

The exchange rate system that a country follows has a large impact on the value of the currency. Under a fixed regime such as the one followed by China, the exchange rate is very stable. Under a free floating regime such as the one followed by the United States, the exchange rate fluctuates significantly, day by day, month by month and year by year. There are various other regimes such as crawling pegs or dirty floats that span the space between pure fixed on the one hand and pure floating on the other. There are also currency boards, such as the one in Hong Kong, where the local currency, the Hong Kong dollar, is backed by reserve holdings of another currency, the US dollar.

A country's trade balance will have a significant impact on the underlying value of its currency with deficits exerting a downward pressure on the currency and surpluses pushing it upwards. However, in the current environment of high capital mobility, capital flows often outweigh the trade flows and thus impact the total balance of payments very significantly. The United States, for instance has had a persistent and sizeable trade deficit for more than a decade but for the most part this has been more than compensated by a massive capital account surplus as foreigners have bought up US government and private sector assets in great quantity.

Other major macroeconomic factors such as growth, inflation, unemployment, fiscal policy and interest rates also have a significant fundamental impact on the value of a currency. On average, the currency of a country with high growth and low unemployment will tend to appreciate. High real interest rates or low levels of inflation, and a tight fiscal policy, also generally exert upward pressure on a currency. It is, however, important to note that the above is theory and that in the real world, things are more complicated. Thus despite a low real interest rate and loose fiscal policy in Japan, the yen has tended to appreciate as Japan has continued to maintain a significant trade surplus.

It is not just the current values of these macroeconomic parameters that influence currency values but also expectations about future values. Their interpretation, of course, varies according to the socio-political and economic context. That is why currency markets tend to hang on every word that policy makers and central bankers utter.

Psychological factors

The foreign exchange market, in common with a number of other high turnover, fast-paced, financial markets (such as the stock market), is susceptible to herd behaviour. Investors follow the actions of other market players for no other reason than copying what they hope is a profitable initiative. This can lead to a self-fulfilling market trend that even more players then follow. This is the same phenomenon that underlay the 'dot com bubble' in the US and the property bubbles in Japan, Hong Kong and the UK. In 1999, for instance, an investor looking to make a buy/sell decision about an internet stock could not afford to ignore the massive upward trend in the prices of internet stocks and the euphoria surrounding them. Even if he fundamentally disagreed with the inflated valuation of the stocks, he would have been unwise to sell and would have lost a lot of money. The papers are full of examples of investment bankers who bought internet stocks, even though they knew they were worthless, knowing that they would be able to sell them at an even higher price. The history of financial markets is full of examples of such herd behaviour as was seen in the 'South Sea bubble' and 'Dutch tulip mania'.[94]

Even if one does not believe that the market value is based on fundamentals or even that it is sustainable, given the existence of such a trend, it would make sense to go with the trend rather than against. Many traders who have tried to outguess the market by going against the trend have incurred huge losses even though their moves were based on sound reasoning.

Keynes was the first to analyze this phenomenon and spoke of it being similar to a newspaper beauty contest where one was asked to rank photographs of women in the order of 'beauty'. There was a reward if this ranking corresponded with that of the majority of the readers. It was logical in this case to assign ranks not according to one's own personal preference but according to whom one thought others preferred. As Tobin said in 1978, the market can get to be dominated by – 'traders in the game of guessing what other traders are going to think.'

Technical factors

Technical analysis is based on the principle that the observation of past data is a good base for predicting future movements. It aims to establish trends and oscillations around the trend and also seeks to establish the momentum in the market and generates buy or sell signals on the basis of this information. An example helps illustrate the way technical analysis works.

Let us say that the 30 day average $/£ exchange rate is 1.7 when the rate moves to 1.75. This generates a 'buy signal'. Technical analysis also looks at the volume of trading; the higher the

94 See 'Extraordinary Popular Delusions and the Madness of Crowds', Charles Mackay

volume the stronger the signal. Hence, in this instance, the trader would buy $/£ in market conditions where there is already a strong momentum behind buying $/£ and thus would contribute to a price increase and a further build up of momentum which in turn will induce still more traders to make the same decision.

The role of speculation

Technical and psychological factors are interlinked and often reinforce each other. This explains why, under the current floating rate/high capital mobility regime, currency movements even when based on sound underlying economic analysis tend to grossly overshoot all the levels that could be justified by the fundamentals. It also helps illustrate why rumours, no matter how far-fetched, can often have a dramatic effect.

This bandwagon/overreaction phenomenon is exacerbated by speculation which adds to the volume of transactions, increases price movements and can lead to market prices that are totally disconnected from economic reality as speculators pile on positions to take advantage of a trend. Often, speculators can themselves start a trend through their own buying/selling actions.

But which of these factors are the most important?

The relative importance of these factors is best illustrated by looking at the results of surveys of currency dealers. These surveys go a long way to explaining the excessive volatility observed in the foreign exchange markets. The results of three recent surveys of foreign exchange dealers[95] show that economic fundamentals are almost irrelevant for determining currency values over a short term horizon.

Among other questions, traders were asked to 'select the single most important factor that determines exchange rate movements in each of the three horizons listed'. The results are presented in Figures 7, 8 and 9 which show the results of the UK survey, the US survey and the Australian survey.

It is remarkable that all the surveys obtained nearly the same results and this adds much credence to their results.

Intraday (very short term) over-reaction to news was cited most frequently, closely followed by bandwagon effects and speculative forces. Technical trading is ranked next and economic fundamentals are deemed almost irrelevant. An example of how these factors can work together to generate price moves far beyond ones justified by economic fundamentals is illustrated next.

More than 60% of the respondents, sometimes as many as 90% believe that news concerning economic fundamentals (such as GDP, inflation and interest rate related announcements) gets assimilated by the markets within a minute of being announced. This news generates a series of price moves that can then become a trend due to bandwagon and technical trading effects. This move can then get accentuated by the actions of speculators who add to the trading volume and make directional bets.

Over the medium term (up to 6 months) news ceases to be important as it is quickly assimilated into the prices. Almost two thirds of the respondents however, still thought that speculation,

95 (Cheung et al, 2000; Cheung Y and Chinn MD, 2000; Hutcheson T, 2000)

FIGURE 7
Most important influence **intraday**

Percentage of respondents who chose <item> as the single most important influence on currency rates

UK: Cheung et al (2000)
USA: Cheung Y, Chinn MD (2000)
AUSTRALIA: Hutcheson T (2000)

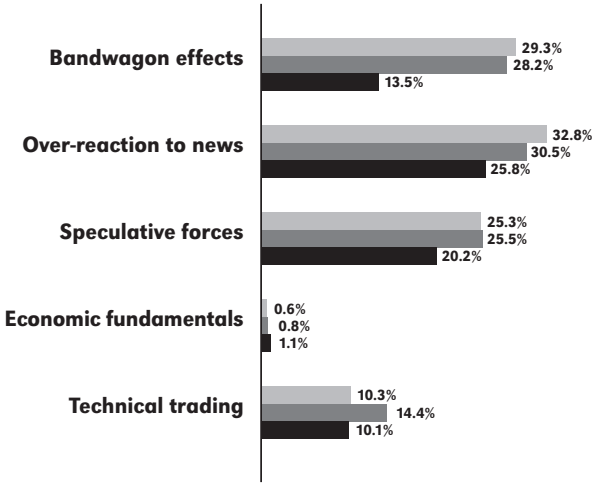


FIGURE 8
Most important influence **within six months**

Percentage of respondents who chose <item> as the single most important influence on currency rates

UK: Cheung et al (2000)
USA: Cheung Y, Chinn MD (2000)
AUSTRALIA: Hutcheson T (2000)

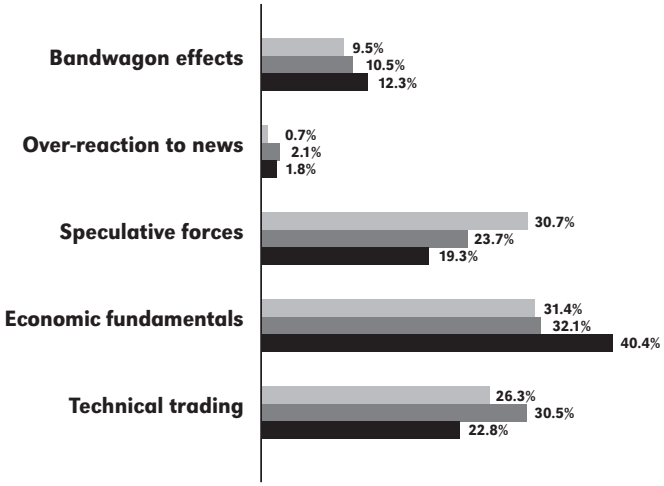
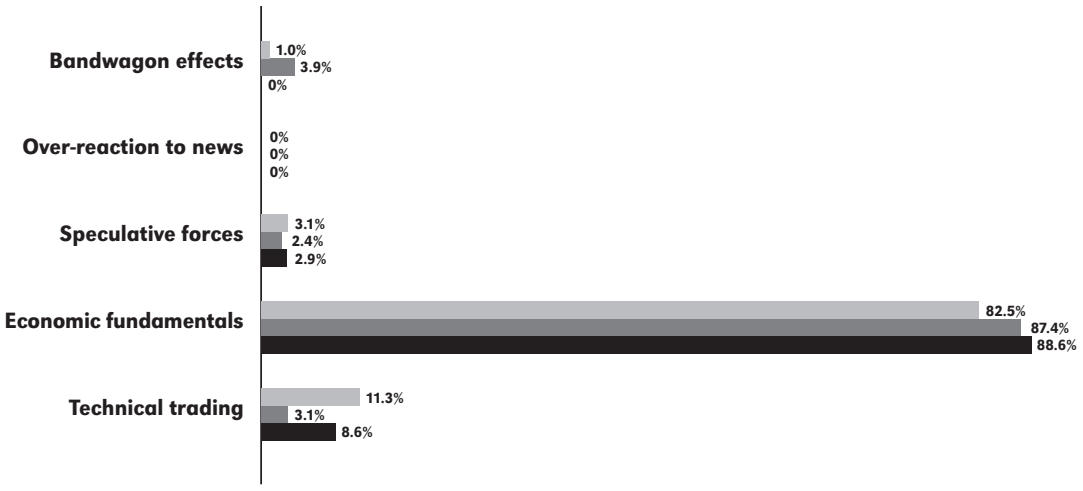


FIGURE 9
Most important influence: **more than six months**

Percentage of respondents who chose <item> as the single most important influence on currency rates

UK: Cheung et al (2000)
USA: Cheung Y, Chinn MD (2000)
AUSTRALIA: Hutcheson T (2000)



technical trading and band wagon effects (taken together) were the most important determinant of currency prices over the medium term with only a third saying that they saw economic fundamentals as the most important determinant of exchange rates over a period of up to six months.

These results clearly indicate that the deviation from fundamentals observed in the very short term can easily extend to medium term periods of up to six months (and possibly beyond). This

observation is supported by empirical evidence. Since the collapse of the Bretton Woods System a clear feature of FX markets is that they have been subject to swings that result in large departures of the real exchange rate from purchasing power parity (PPP). However, macroeconomic theory predicts that PPP should hold (Rogoff, 1996).[96] Economic models are empirically unable to predict actual exchange rates with the best model over any modest time horizon assuming random price variation (Taylor, 1995).

Over the long run (over 6 months), economic fundamentals are by far the most important factor with their influence being tempered somewhat by technical factors. It is important to note that the respondents were asked to specify the 'single most important factor' and not list all the factors they thought influenced the exchange rates. The world of finance has many complexities and it would be simplistic for a trader to conclude that only one set of factors influences the exchange rates. It is much more likely that most market participants recognise that fundamental, psychological, technical and speculation factors all play some part in determining exchange rates over all horizons and take them into consideration while making trading decisions. This is confirmed by the author's own conversations with traders in the FX market.

What the survey results reflect then are merely the dominant factors over each time horizon. This means that while exchange rates are determined primarily by non-fundamental (i.e. psychological, technical and speculative) factors over both the short and the medium horizons, these factors also play a part, albeit a non dominant one, in the determination of exchange rates over the long term. This is consistent with empirical findings (Rogoff, 1996) that the exchange rates can show significant deviations from the fundamentals over a period not only of months but also several years.

So what affects exchange rate volatility?

If we were to believe Milton Friedman (1953) '... instability of exchange rates is a symptom of instability in the underlying economic structure ... A flexible exchange rate need not be an unstable exchange rate. If it is, it is primarily because there is underlying instability in the economic conditions', the answer is very simple; the volatility in fundamental economic factors.

However, a large body of empirical work[97] has thoroughly discredited this point of view and found remarkably little evidence of any link between the volatility of economic fundamentals and the exchange rate. Currencies that are a part of fixed exchange rate regimes have less volatile exchange rates than members of floating rate regimes, while the volatility of fundamentals is very similar across exchange rate regimes[98]. It is critical to note that this volatility of fundamentals is not influenced by the exchange rate regime[99].

So if the volatility does not come from underlying changes in fundamental economic factors, where does it come from? The survey results show that technical, psychological and speculative factors mostly determine exchange rates over the short to medium term and that exchange rates change to reflect the economic fundamentals over the longer term. These changes in exchange rates followed by moves towards fundamentals generate more changes than if the exchange rates adjusted to reflect the fundamentals immediately. This is where the volatility comes from.

96 Economic theory predicts that the equilibrium real exchange rate should be roughly equal to the ratio of country price levels, adjusted for differences in (1) ad valorem sales taxes, and (2) the value of non-tradable inputs whose price is not equalized across country markets.

97 Meese and Rogoff (1983), Mussa (1986), Baxter and Stockman (1989), Frankel and Rose (1995), Flood and Rose (1995), Obstfeld (1995), and Gosh et al. (1995)

98 Obstfeld and Rogoff (2001)

99 Flood and Rose (1999)

This view of the high volatility being the result of the activities of market players rather than changes in economic fundamentals is further reinforced by a vast body of theoretical work.[100] The role of *noise traders* (those traders who trade on non-fundamental factors) is highlighted in Bauer and Herz (2003) who say 'Noise traders create additional volatility in the exchange rate market by reacting to noise or by herd like behaviour'.

The role of speculation is scrutinised by De Long, et al who show how, contrary to widely used arguments in the market efficiency literature, it could be rational for speculators to jump on the bandwagon rather than buck the trend. They also show how the actions of speculators, acting out of a rational profit motive, can move prices even further from the fundamentals than they would be in the absence of such speculation. This agrees very well with the answers to 'What is the factor most responsible for the market not reflecting fundamental values?', another question asked in the market survey described above. More than three quarters (75%, 74% and 84% in the three surveys) of the respondents said that it was excessive speculation.

Furthermore Wei and Kim (1997), using real data on the positions of large players in the currency markets, successfully bring empirical observations and theoretical models together to show that the actions of large players (such as banks) cause exchange rate volatility (in a statistical sense). They also show that these players trade mostly on non-fundamental factors and that when they speculate they do not stabilise currency markets. It is for instance common for currency traders to sell a currency, even when they know and acknowledge that it is seriously undervalued, if they believe that other traders expect the price to fall. It is clear that while an individual trader acting this way may not substantially influence the price of the currency, many traders thinking along the same lines can cause a systemic fall in the value of a currency away from its fundamentals.

George Soros, the hedge fund manager who is famous for having successfully speculated against the UK pound (and made almost $1 billion in the process) agrees 'The market mechanism fails to bring currencies back into alignment. On the contrary, speculation tends to exaggerate currency moves.'[101] The fact that almost all (93%, 84% and 91% in the three surveys) currency traders said that speculation increases currency volatility further reinforces Soros's view.

We have thus seen that psychological factors, technical factors and the existence of both noise traders and speculators result in the excessive volatility seen in the currency markets.

A brief discussion on speculation, liquidity, efficiency and volatility

In order to get a deeper insight into the currency markets, it is important to look at some of the other responses in the survey. More than 80% of the traders surveyed also thought that speculation increased liquidity and efficiency.

Market efficiency is usually measured by how quickly new fundamental information is reflected in prices. We have already seen that a majority of market participants think that it takes less than a minute for news to be incorporated into foreign exchange prices. So does this mean that the FX market is very efficient?

For the answer we must take a look at the concept of market efficiency. The concept of efficient prices is that they reflect all the fundamental information available. However, as we know from

100 De Long, et al (1990), Lyons (2001), Frankel and Froot (1990a, b), De Grauwe et al. (1993), Hau (1998), Jeanne and Rose (2002), Evans and Lyons (2002), De Grauwe and Grimaldi (2002), and Kilian and Taylor (2003)

101 The Alchemy of Finance p328

the results of the survey, almost a third of the respondents think that the market overreacts to news. We also know that the traders believe fundamental factors are not the main determinants of prices on a short-medium term scale. Hence, while the traders are right in saying that the market is lightning quick to incorporate new information, we know that this new information is not incorporated accurately. So, the answer to the question is that the frenzied activity on the outbreak of news does not mean that the FX market is very efficient.

We can understand this better by using the example of two markets. Market A, where it takes ten seconds for new information to be incorporated into prices, but where the price change is influenced not just by news but also by overreaction, speculation and bandwagon effects. And Market B, where it takes one minute for new information to be incorporated into prices, but when it is done the prices accurately reflect this new information. Of these, Market B is more efficient.[102]

Though the actions of speculators can help prices move more quickly in response to news (what the traders refer to as increasing efficiency), they in fact moves prices further away from fundamentals to the point where they no longer accurately reflect the new information. This makes the FX market less efficient. This point is borne out as the markets are able to accurately reflect fundamental factors (that come in the form of new information and news) only in the long term.

Liquidity[103] is usually defined in terms of the impact that a single trade has on the price in the market. The less the price impact of a trade, the more liquidity the market is said to have. It would seem obvious to say that the larger the market, the more liquid it should be; a drop of water will have less impact on the level of a pond than on the level of a bucket. However, this argument is incorrect. In this extreme example, imagine the market comprised of just two large players. If neither of them wants to buy the currency a small player wants to sell, it could lead to a large price change as both players readjust their quotes to discourage anyone else from selling to them.

True market liquidity comes from diversity of belief in the market i.e. a large number of participants some of who want to buy and others who want to sell. Of course, if the market is of considerable size there is a greater likelihood of there being more players and more diversity. However, though the FX market has grown, there is evidence to show that fewer players now command a larger market share; so the number of participants has actually shrunk though the total market size has grown.

Second, bandwagon effects of the kind we have discussed and overreaction to news actually reduce the diversity of beliefs, consequently a 'market belief', or 'market fad' or 'trend' can become accepted wisdom. As discussed above, speculation helps amplify these effects and hence can reduce the diversity of belief in the market. To reconcile this interpretation with the response from currency traders we need to take another look at speculation.

Speculators buy and sell currencies out of a pure profit motive. They are also the ones who hold 'open' (unhedged) positions in currencies most often and their trades thus have a higher impact on market prices. In the case that some unexpected, unfavourable, news comes along, speculators react quickly and are amongst the first to sell. This leads to a series of downward price moves, upon which other noise traders start to sell expecting the price to fall further. Their actions are self-fulfilling and generate another series of downward price moves. Seeing this, and

102 Market A represents the current FX market. Market B represents the FX market with a CTT.

103 Bruno Jetin (2003) provides an excellent discussion of liquidity in the FX market.

anticipating that the trend will continue for a while, speculators keep selling and thus reinforce the actions of the noise traders over the short to medium terms. However, once the price has moved far enough from the fundamental level, speculators who have sold high see an opportunity and start buying. Their actions may generate a reverse price signal that the noise traders may seize upon and start selling too. If this happens, the speculators make a large profit by having sold high and bought low. If the trend does not reverse itself, speculators lose money (they do not always make money).

The above discussion shows that speculators sometimes (especially at the start and reversal of the trend) add to the diversity of belief in the market and sometimes (when a trend is established and when noise traders follow price signals sent by speculators) reduce the diversity. Since speculators can sometimes prominently adopt 'contrarian'[104] market beliefs it can be perceived that they increase liquidity to the market. Also, as they enhance the trading volume in the market (like every other player in the market) that perception can be reinforced. However, as seen in the discussion the real role of speculators in providing market liquidity is much more ambiguous.

In respect of the relationship between speculation and economic fundamentals let us try to reconcile two apparently contradictory responses. On the one hand, three quarters of the respondents said that 'Excessive speculation is responsible for exchange rates not reflecting fundamental values' and on the other sixty percent of the same respondents said that 'Speculation moves currencies towards fundamentals'.

For this we need to look at Frankel (1993)[105] who from a survey of the currency markets concludes that if the value of a currency increases over the short term market participants expect it to fall over a period of time. This tendency to expect price reversals gets stronger with time. If the value of a currency increases by 1% in a week, for instance, market participants expect it to decrease in value by 0.33% over the year. These results are consistent with the dominance of non-fundamental effects over the short and medium terms and fundamental effects over the long term as discussed previously in this section.

They point to speculation being destabilising (moving prices away from fundamentals) over the short to medium term and stabilising (moving prices towards fundamentals) over the longer term. This can then help reconcile the seemingly contradictory survey findings about the relationship between speculation and economic fundamentals[106].

However, this conclusion may be too charitable to speculation. As we have shown in previous sections, speculation plays an important part in driving prices away from fundamentals. It then seems to eventually help get them back towards fundamentals and gets credit for a stabilising influence in the long term. This is analogous to pushing someone in a river, then rescuing them by throwing them a rope and winning a bravery award for the rescue. While all speculation is not the same, as we have shown above, on balance, it is more of a destabilising rather than a stabilising influence.

Can we predict the exchange rate prevailing today?

For a deeper insight into the currency markets we need to look at the relation between deviation from the fundamental value over both the short and the long term. Let us look at what affects

104 'contrarian': going against market trends ie 'being a bear in a bullish market'.

105 Frankel J.A. (1996)

106 See Jetin B (2003) for an alternative treatment.

the exchange rate between the British Pound and the US dollar on a particular day (i.e. today, 30 June 2004). Going back to the results for the survey we can see that in the long term (i.e. years) economic fundamentals play the dominant role in predicting the exchange rate and over both the medium (i.e. months) and the short term (i.e. intraday) non fundamental factors dominate.

A trader who had, in 2002, to predict the exchange rate prevailing on 30 June 2004 would do well to use fundamental economic factors as a guide. However, if the same trader was asked, in January 2004, to predict the same exchange rate prevailing today they would be ill-advised to ignore bandwagon effects and speculation and concentrate only on the fundamentals. If the exercise were to take place on 30 June 2004 itself, the trader would concentrate on psychological factors, market speculation and trends in order to trade the GBP/USD currency pair, perhaps looking at the fundamental factors only in passing.

The lesson to be learnt is that exchange rates always deviate from the fundamentals as the exchange rate today is influenced not only by long term economic fundamentals but also by medium term speculation and bandwagon effects and short term overreaction to news.

So how can the CTT reduce volatility?

Having established that excessive volatility is the result not of changes in the underlying economic fundamentals but a result of psychological, technical and speculative factors; let us now turn our attention to see how the CTT will affect all these factors in turn. In order to be rigorous, we need to look at the two tiers of the CTT separately as they are very different from each other.

Base Tax

As we saw in Appendix II, a 0.005% (0.5 basis points) base tax on all transactions would increase the transaction costs involved in currency trading by a small amount. We also saw in the same section that this increase has the potential to reduce the overall volume of transactions in the market. This small tax will not however have very substantial effects on the basic microstructure of the market. It may lead to very short term traders, those who trade in and out of a position several times a day to make money on very small movements of exchange rates, reducing their volume of transactions.

On average, some of the more frequently traded currencies change in price about 80,000 times in a day. We saw in the earlier sections how economic fundamentals are relatively stable (they certainly do not change 80,000 times a day).

These changes in prices then do not always reflect a change in economic fundamentals but instead are mostly the result of the actions of noise traders and others seeking to benefit from very short term changes in prices. As we saw in a previous section, the actions of those who trade on non-fundamental factors can end up causing higher volatility in the market. Even a tiny base tax of 0.5 basis points can act to change the behaviour of those who focus on the very short term.

TABLE 11
Typical transaction costs

Currency pair	Current typical costs (basis points)	Current cost of deals		Post-tax cost of deals	
		Once daily	Five times daily	Once daily	Five times daily
Dollar / Euro	1.1	2.8%	13.8%	5.3%	26.3%
Dollar / Yen	2.3	5.8%	28.8%	8.3%	41.3%
Dollar / Pound	2.1	5.3%	26.3%	7.8%	38.8%
Dollar / Swiss Franc	3.1	7.8%	38.8%	10.3%	51.3%
Dollar / Mexican Peso	8	20.0%	100.0%	22.5%	112.5%
Dollar / Korean Won	8	20.0%	100.0%	22.5%	112.5%
Euro / Danish Kroner	1	2.5%	12.5%	5.0%	25.0%
Euro/ Polish Zloty	11	27.5%	137.5%	30.0%	150.0%
Pound / Swiss Franc	3	7.5%	37.5%	10.0%	50.0%

Table 11 shows the typical transaction costs currently incurred on trades of significant size (several million dollars). The next column looks at the annual transaction costs incurred by a short term trader who trades once every day over the whole 250 day working year. This column can also be interpreted as the additional return needed to equalise the returns of the daily trader with those of an investor with a one year horizon. The next column lists the same additional return required by a very short horizon high frequency trader who transacts five times in a day on average.

It is clear from this, that where higher transaction costs are involved, the relative incentive between trading short term and long term is skewed in favour of the long term. As can be seen from the 'post tax' column in the table, the introduction of a 0.5 basis point CTT helps make long term trades more appealing than short term trades. It is then clear, as long as liquidity does not dry up, that there would be a small shift in focus from short term to long term (from non-fundamental to fundamental) and this could bring about a small reduction in the volatility of exchange rates[107].

Frank Westerhoff[108] and his colleagues have done some excellent work on the volatility effects of the base rate CTT. They note 'that around 80% of the daily speculation trade takes place because traders would like to take advantage of profits below the 10 basis points limit. The effect of a small tax rate could therefore be quite strong.' In order to check this hypothesis, he has developed a realistic virtual market model that produces exchange rate fluctuations that replicate those observed in the real world. When a small transaction tax is applied in the model he finds that 'it leads to a crowding out of speculators and stabilises the (exchange rate) dynamics. He also finds that 'exchange rate fluctuations decrease', 'currencies are less mispriced', and 'central authorities raise substantial revenues'. The paper, however, warns against imposing too large a tax, beyond a fraction of a percent, due to the possible negative impact on liquidity.

Liquidity, however, is not affected in any negative way by a small tax of the order of a basis point. As we discussed, liquidity comes from a critical size and diversity of opinion. There is no reason to believe that either would suffer. Transaction costs have come down dramatically in the past few years mainly as a result of technology and intense competition. Even with the base tax, the higher transaction costs would actually still be smaller than the costs that were prevailing until as recently as 1998 when the market was regarded as being at its most liquid. This is also borne out by the author's conversations with senior FX dealers who asked to comment on what

107 Also see Frankel J.A. (1996) page 57

108 See Westerhoff (2003) and Ehrenstein, Stauffer and Westerhoff (2003)

effect they thought a 0.5 basis point CTT (base tax) would have on liquidity, concurred that at such a small rate 'liquidity would not be affected'.

Tax surcharge

While the base tax will help reduce volatility somewhat, greater reduction in volatility would come from the operation of the tax surcharge. We have seen that the current exchange rate regime is focussed on non-fundamental factors and hence is excessively volatile. The tax surcharge will be able to reduce the effect of non-fundamental influences such as psychological, technical and speculative factors by creating the financial incentives for the currency traders to focus on the fundamental factors instead and thus significantly reduce volatility in the market.

A major factor in intraday and short term volatility is overreaction to news. Towards the end of the first week of May 2004 a US labour statistics release showed that unemployment was lower than expected; this made it slightly more likely that the US Federal Reserve would increase the US interest rates by 0.25% in June. This could translate into a higher expected return from overseas investments in countries such as Brazil. However, the currency markets dealing in the Brazilian Real completely overreacted to the news and it fell by almost 3% on Thursday and Friday. When the market opened again on Monday, it fell by another 2.5% only to recover almost all this fall the next day as market players realised that the large price fall had not been justified. The existence of such overreactions followed by price reversals within a few days is well documented in the currency markets.

Under the existence of a CTT, there would be a band of normal variation, the violation of which would be expensive for market players. As seen in section II such a band of variation would have allowed a normal change in the currency value of about 1%. Any change more than that, such as the 2.5% price fall, in this example, would be penalised. Given that this price change was reversed the next day and that most market participants recognise that the market overreacts to news it is reasonable to conclude that the price would not have changed by more than the limit and thus the volatility in the market would have been lower. Similarly the tax surcharge reduces the bandwagon and speculative effects in the markets by making deviations from the fundamentals more expensive.

Most important however, is the role of the tax surcharge in reducing the likelihood of currency crashes. Currency crashes are sometimes the result of non-fundamental currency trends gone haywire; the CTT reduces the formation of these trends and decreases the amount of deviation from fundamentals. Even after a large deviation has occurred, the CTT can reduce the probability of this deviation turning into a self-fulfilling currency crash.

Kray[109] documents 308 speculative attacks between January 1960 and April 1999 that struck 75 countries with high and medium per capita GNP, and with a population of at least 1 million people. Of these 308 attacks, he finds that 105 succeeded, while 203 failed. But in both cases, there is damage done as the country increased its interest rate to very high levels provoking a recession with negative consequences on both employment and welfare.

However, the tax surcharge can change incentives reducing the likelihood of such speculative attacks and even if they do occur, reduce the likelihood of their success. It works by both

109 See Kray Aart (2001)

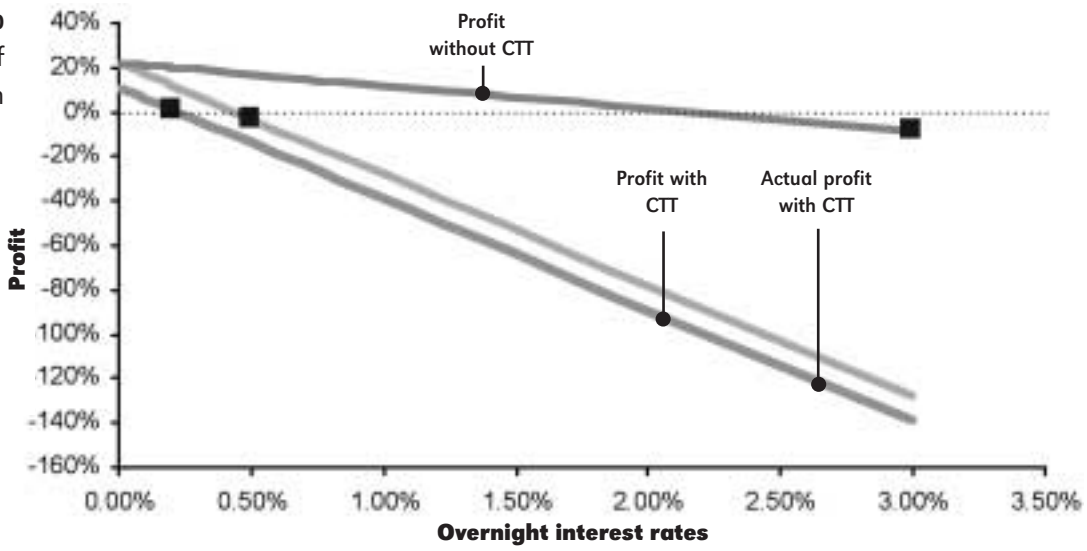
increasing the cost of failed speculative attacks and reducing the pay off from successful ones. Below we show how this works.

Speculators hoping for a sharp fall in a currency value expect to make profits by borrowing large amounts of the currency, selling it and then buying it back to repay the borrowing once the exchange rate has fallen. Typically the currency being speculated against has high interest rates (see previous page) sometimes as high as 1% or even more for overnight borrowing. Moreover, this borrowing is highly leveraged i.e. for every dollar the speculator owns, he borrows many more. Let us assume a daily interest rate of 0.1% and a leverage ratio of 9 which is fairly typical in such cases. So the speculator has $100 of own money and borrows $900 at a daily interest rate of 0.1%. Let us assume that the speculator thinks that there is a 1 in 3 chance that the currency will fall by 10% in a single day.

His expected revenue on a $1,000 investment is then $1,000 x 10% x 1/3 = $33 and cost is $900 x 0.1% x 1 = $9; so he expects to make $33–$9 = $24 on his own money of $100 or 24% in one single day. Now imagine we introduce a CTT with a 2.5% band of normal variation. The exchange rate would then take 4 days to fall by 10%. Assuming the likelihood of success stays the same, his expected revenue then will still be $33. However, his cost would be $900 x 0.1% x 4 = $36 or four times as much as before. Thus, instead of making a profit of $24 he now expects to make a loss of $36–$33 = $3. Armed with this information, he will not speculate as he does not expect to make money. In fact, as large changes in value of the order of 10% occur mainly as a result of the actions of speculators and bandwagon effects, a price change of 10% is less likely to happen if speculators do not enter the market en masse. This means that the 1 in 3 chance of success is also likely to be reduced say to 1 in 5. The expectation of the revenue is then $1,000 x 10% x 1/5 = $20 and the cost is $900 x 0.1% x 4 = $36; so our trader now expects a loss of $16 as compared to the expectation of a profit of $24 before the introduction of the CTT.

The following graph shows the effectiveness of the CTT mechanism. Typically when a speculative attack happens, the central bank sharply increases the short term (overnight or call money) interest rate in order to thwart the attack. In the graph, the speculator is leveraged ten times, is expecting 10% devaluation in the currency and has a 20% likelihood of success. The CTT band is

FIGURE 10
Profitability of speculation



2% wide on either side of the base rate. The graph plots the expected profit of the speculator as the central bank increases the short term lending rate.

As we can see from the graph, the interest rate needed to thwart the attack, i.e. make the expected speculative profit zero (as shown by the small squares) is much lower in the case where a CTT regime exists. High interest rates carry significant economic and welfare costs as they can disrupt economic activity and sometimes even trigger recessions. So, it is clear that having a CTT can achieve the goal of reducing the likelihood of large currency devaluations with much smaller economic and social costs. There is always some uncertainty about whether a speculative attack will be successful. Having a CTT increases the likelihood of failure. This means that the CTT can thwart an attack, at even lower interest rates. This is shown by the box on the 'Actual Profit with CTT' line.

This shows how the CTT can be highly effective in both reducing currency fluctuations (volatility) and the occurrence of currency crashes. The more volatile the currency, the more effective the CTT would be in reducing the volatility.

APPENDIX V The opportunity costs of holding foreign exchange reserves

What are foreign exchange reserves and why do countries hold them?

The monetary authorities (central banks or finance ministries) of countries hold liquid financial assets that are denominated in foreign currencies. These assets make up a country's foreign exchange reserves and are usually held in order to allow it to even unpredictable and temporary imbalances in international payments. In case of a fixed or pegged exchange regime, reserves are needed for intervention in the currency markets in order to help smooth or prevent changes in the exchange rate.

Several factors influence how much foreign exchange reserves a country holds. One factor is related to the size of international financial transactions that occur there; on average, the bigger the economy the more such transactions occur and hence the higher the reserves needed.

Another factor is related to the importance and volatility of international receipts and payments since reserves are intended to help cushion the economy against a possible disruption in its linkages with the rest of the world through international payments. So on average, the larger the share of trade and capital flows (the more open the economy) and the higher their volatility, the higher the foreign exchange reserves that are needed to protect the country against adverse consequences. An oil importing country for instance, needs to hold some foreign exchange reserves to purchase oil if its export earnings temporarily dry up due to an external shock.

Finally, a country's tolerance for greater exchange rate flexibility should reduce its demand for reserves. This is because its central bank would intervene in the market less frequently, at rare times when the exchange rate variation is extreme, and hence does not need a large stockpile of reserves.

How much foreign exchange reserves do countries hold?

Over the last three decades, since the breakdown of the Bretton Woods regime, there has been an increase in the amount of foreign reserves held by central banks throughout the world. In every region of the world, central banks are holding far larger reserves, relative to the size of their economy, than they did in the 1970s. However, what is striking is the enormous build up of foreign exchange reserve holdings among developing nations over the past decade, especially since the South East Asian financial crisis. In the developing world, the average ratio of reserve holdings to GDP has more than doubled between the 1970s and the present with countries such as Taiwan and Malaysia, now holding an amount of reserves that exceeds 30 percent of their GDP.

Total foreign exchange reserves in the world have grown to more than $2,500 billion from less than $1,000 billion at the beginning of the 1990s. Of this more than 60% or $1,500 billion is now held by developing countries especially those in Asia. The ratio of reserves to annual imports of goods and services for developing countries as an aggregate has risen from about

FIGURE 11
FX reserves
in billions of dollars
Source: World Economic Outlook, IMF

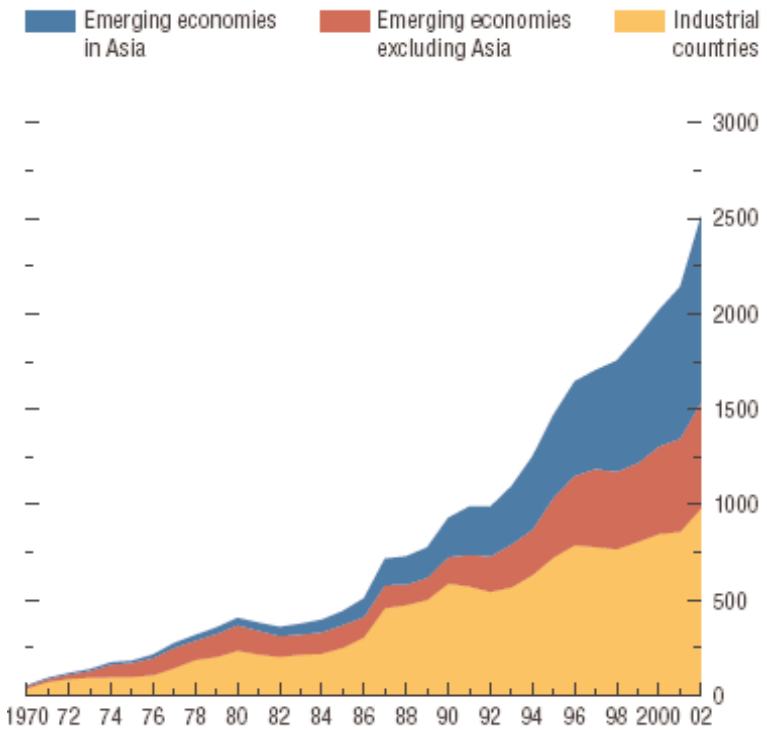
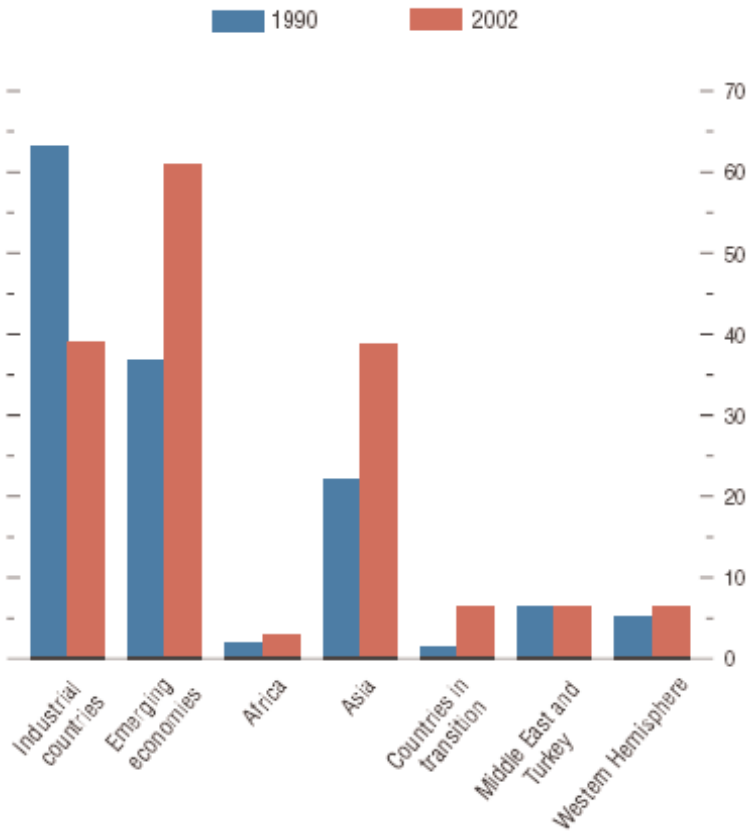


FIGURE 12
FX reserves
as % of total
Source: World Economic Outlook, IMF



40% in 1996 to more than 60% in 2003 with some countries such as India having a ratio as high as 110%. As a percentage of GDP, reserves have grown to more than 20% for developing countries as a whole and almost 30% for those in Asia.

Are these reserves excessive?

As the exchange rate flexibility has significantly increased from the 1960s to this decade, the observed exponential growth of foreign exchange reserves is especially puzzling as many regard the demand for reserves to be a hangover from the fixed exchange rate era. The resilience of the demand for reserves, however, is less surprising from the perspective that reserves are held not only as an instrument of exchange rate management, but also as a cushion against an undesired shortage of international currencies that could wreak damage on the economy.

There are then two main explanations that could be put forward for the rise in the ratio of reserve holdings to GDP. Firstly that trade and capital flows have increased relative to GDP in most nations thus necessitating an increase in reserve holdings. Secondly, that the international monetary system has become more unstable and hence increased the need for countries to hold more money in the form of reserves in order to protect their economies from this instability.[110] If currency crises become more frequent, or the economic disruption they cause becomes more severe, then it would be expected that central banks would raise their reserve holdings.

Empirical work using the first explanation is able to explain some of the observed growth in reserve holdings but falls far short of providing a rigorous explanation for the exponential growth seen in the reserve holdings of developing countries especially those in Asia.[111]

It is likely that a major reason for the build up of reserves is the desire to avoid the occurrence of a financial crisis. After the 1997–8 South East Asian crisis, governments in developing countries, especially in Asia became very sensitive to the possibility of another currency crash. The fact that there have been financial crises in Brazil, Russia and more recently in Argentina since 1998 have made developing countries even more sensitive to the potential instability lurking in the international financial system. They have become more loss averse[112] and hold higher reserves to reduce both the likelihood of a crisis and the depth of a crisis, should one occur.

After the Asian financial crisis, several prominent academics, policymakers[113] and the multilateral financial institutions such as the IMF suggested that holding a higher level of reserves could reduce the likelihood of a financial crisis. This explains why the growth in foreign exchange reserves accelerated especially after 1997–8. One suggested measure to gauge the sufficiency of reserves is the ratio of reserves to short term financial liabilities. The empirical literature on the emerging market crises of the 1990s, including work done at the IMF, suggested that a ratio of reserves to short-term debt above 100% brought about an important reduction in crisis vulnerability. The rationale is that, if reserves exceed short-term debt, then a country can be expected to meet its obligations over the forthcoming year and thus avoid rollover problems that stem from concerns about liquidity. As one can see from the graph, already in 2002, most developing countries comfortably exceeded this ratio and reserves have grown at an even faster rate since then.

110 Baker D and Walentin K (2001)

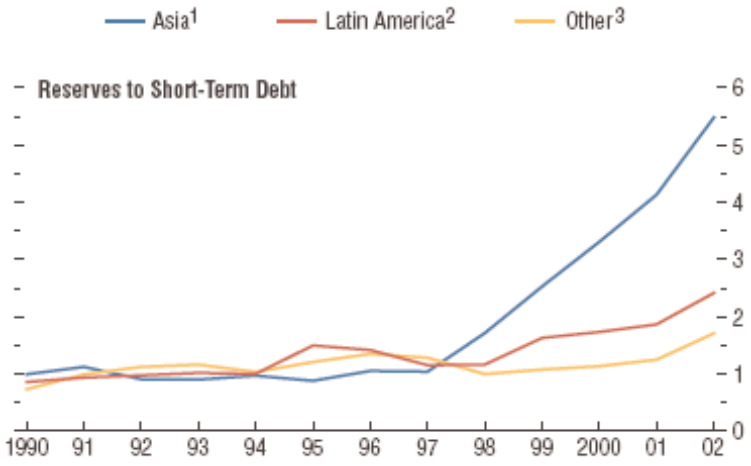
111 Aizenman J and Marion N (2003), Agarwal R and Gupta A (2003), IMF (2003)

112 The tendency of people in the economy to be more sensitive to reductions in their consumption than to increases.

113 Such as Alan Greenspan, the chairman of the US Federal Reserve.

FIGURE 13
Ratio of reserves to short-term debt

Source: World Economic Outlook, IMF



For countries with fixed exchange rate regimes, such as China[114], holding the exchange rate constant is another motive for holding higher reserves. As China's currency is widely believed to be undervalued, other countries such as India may feel the need to prevent appreciation of their domestic currencies in order to prevent or delay erosion of their export competitiveness. Thus market intervention in the form of purchase of US dollars further leads to reserve accumulation among these countries. However, this can only be one factor in the high levels of reserves observed. China, for instance, has held excessive (by the criteria defined in the discussion above) reserves since before the time its currency was believed to be overvalued.

Current levels of foreign exchange reserves held by developing countries appear excessive and this is at least partly due to the fact there is a perception of a growing instability in the international financial system that manifests itself periodically in the form of yet another emerging market crisis. It's a case of 'once bitten twice shy'; no country wants be bitten again. Clearly, while some foreign exchange reserves are needed to tide over temporary payment imbalances, very high levels of foreign exchange reserves can only be seen as an insurance against the occurrence of a currency crisis[115].

Is there a problem with holding an excessive amount of foreign exchange reserves?

The fact that nations now have such a high level of reserve holdings to GDP would not be of much consequence, but for the fact there are substantial opportunity costs[116] to holding foreign exchange reserves.

As foreign exchange reserves are held as a protection against unexpected imbalances in payments it is necessary to be able to draw on them at very short notice, possibly in stressed and unstable financial market conditions. Hence they are mostly held in the form of safe and liquid assets that can be quickly and reliably sold for foreign currency. The financial markets perceive short term US (and other OECD) government bonds to be the safest and most liquid investments. This is why a substantial proportion of developing country reserves are held in the form of US and other OECD government bonds. These carry a very low interest rate of 1%–2%. The issue of the opportunity costs of holding these reserves arises from the difference between this very small rate of interest and the substantially higher rate of return that can be generated by putting the reserves to more productive use.

114 It is important to note here that a high level of instability and volatility in the financial system encourages countries to prefer a fixed regime over a floating one in order to try and insulate their economies more effectively from financial volatility and external shocks.

115 Lee J (2003)

116 The costs arising out of not using a better opportunity; in this case the money held in reserves could instead be invested to generate a high rate of return

Most developing countries pay a much higher interest rate on their external debt than they earn on foreign exchange reserves. The Brazilian government, for example, has to pay an interest rate of more than 13%[117] on its external borrowing while it is earning only about 2% on its reserves of almost $50 billion. If Brazil could use these reserves to pay down some of its foreign debt, it could save more than $6 billion every year. On average, developing countries have had to pay between eight and eleven and sometimes as much as 20%[118] more on their external debt than they have earned on their holdings of foreign exchange reserves. This translates into a massive opportunity cost of tens of billions of dollars every year.

Another way of looking at this is that developing countries are borrowing money from the private sector in developed countries at high interest rates and then lending this money to developed country governments (mostly US) at much lower rates. (Buying US government bonds is the same as lending money to the US government. So in effect developing countries can end up subsidising developed countries.

In order to build up its reserves, a developing country government (central bank) needs to buy foreign currency. If it does this by selling domestic currency it can create inflationary pressures as the government puts more currency into circulation in order to buy up more foreign exchange. In order to guard against an excessive rise in inflation, central banks mostly buy foreign exchange by selling domestic government bonds rather than using domestic currency. This keeps the amount of money in circulation in check but has a hidden cost as the interest rate paid out on these domestic bonds is often higher than the rate earned on foreign exchange reserves. The costs of this can be as high as 2–3% of GDP per year[119].

We have already discussed two major reasons why holding foreign exchange reserves incurs substantial opportunity costs. There is a third more important and accurate way of looking at these costs. In order to increase its holdings of reserves, a nation must manage to run a balance of payments surplus. The net increase in reserve holdings is the extent to which the total amount a nation receives in foreign currency – whether from trade or capital flows – exceeds the total amount it pays out. This is also equal to a surplus of national savings over investment (since this is equal to an excess of exports over imports), plus the net inflow of capital. A dollar that is added to reserves is a dollar that could otherwise be spent on investment. In order to estimate the true opportunity costs of reserves then, it is necessary to calculate the rate of return that can be achieved on this investment.

This rate of return is the marginal return on capital in the nation holding the reserves[120] . The entire value of a nation's reserves corresponds to savings that could otherwise have been invested in physical or human capital. The return on investment in physical capital in most developing countries is at least 10%[121] and in many cases could be higher than 20%[122]. There is evidence that public investment in infrastructure or education, two other alternative uses of assets held as reserves, may provide even higher rates of return than physical capital[123]. The returns on reserves on the other hand only average about 2%[124].

An estimate of the true opportunity cost of holding reserves can then be made. Since developing countries hold in excess of $1,500 billion in reserves and the difference in interest rate earned (2%) and returns from investment in domestic economy (10%–20%) is 8% to 18% pa, then the opportunity costs can be anywhere between $120 billion to $270 billion per year. This is an enormous amount of money and is equivalent to 1.6%–3.6% of developing country GDP every year. Countries, especially developing ones, can ill afford to lose this enormous sum of money.

117 The yield of the Brazilian government benchmark bond due 2040 was 12.94% on the 31st of May 2004

118 Such as Brazil in the run up to the last presidential elections.

119 IMF 2003

120 Neely (2000), Ben-Basset and Gottlieb (1992)

121 This is the pre tax return on capital in the US in the post war period. See Baker (1996)

122 It is expected that return in developing counties is much higher due to more opportunities and higher risk. See Baker (2001)

123 Munnell 1994, Holtz-Eakin and Schwartz 1994

124 IMF 2003, Baker 2001 and author's calculations.

The estimated additional costs of meeting the MDGs, in comparison, are only about $50 billion every year. If even a small proportion of these lost opportunity costs could be reclaimed by developing countries they could substantially add to welfare and help meet the MDGs.

There are legitimate reasons to hold foreign exchange reserves so not all of them could be diverted to domestic investment. But the current levels of reserves are excessive by all economic measures and there is no doubt that a significant proportion of these could be freed up for more productive investment. Agarwal and Gupta (2003) make an estimate of the excess reserve holdings based on the widely accepted WK criterion[125] and find that developing countries hold close to $500 billion in excess reserves. At an 18% differential this translates into an opportunity cost of $90 billion every year.

Even these sums do not completely capture all opportunity costs. Almost two thirds or $1,000 billion of reserves held by developing countries are held as dollar assets, while only about a third of developing country trade is denominated in dollars. The dollar has fallen by over 12% in trade weighted terms since 2002; this means that developing countries have effectively lost about $50 billion[126] in the last two years just by holding dollar reserves.

How can these opportunity costs be minimised?

We have shown in earlier sections how the CTT can effectively reduce both currency volatility and the likelihood of financial crises. A large part of the foreign exchange reserves are held so as to reduce the likelihood of such crises happening. The CTT will significantly reduce the need to hold foreign exchange reserves for this purpose. The almost $500 billion of excessive reserves held purely as insurance against the occurrence of a currency crisis can then be immediately put to a more productive use such as investment in health and education.

More than half of the $1,500 billion of foreign exchange reserves held by developing countries have been accumulated since the South East Asian crisis to protect against excess volatility in the currency markets. The reduction in currency volatility brought about by the CTT would allow a large proportion of these reserves to be released. By investing this $750 billion of freed reserves in public infrastructure and social investment, developing countries could reap additional benefits of more than $150 billion or 2% of their GDP every year.

125 After Wijnholds and Kapteyn, A. (2001)

126 Author's calculations

APPENDIX VI Rebutting the technical criticisms of the CTT

In 2003, the Dutch government[127] organised a conference and a brainstorm session in order to assess whether Spahn's ideas for a currency transaction tax could offer realistic solutions to the problems of economic instability in the currency markets.

The list of participants included currency market (and CLS Bank) specialists from the four major Dutch banks and the Dutch Central Bank and also prominent academics specialising in the currency markets. The participants also considered whether it was possible to raise revenue through a CTT.

This appendix presents a robust rebuttal of the criticisms put forward by the participants.

1 About 40% of all currency transactions take place outside CLS Bank, with bilateral settlement through CHIPS in the USA, CHAPS in Great Britain and RTGS+ in Germany. Those organisations do not know both sides of a transaction; they cannot therefore even know whether it is a currency transaction. How could they tax currency transactions?

Spahn's solution to this problem was to add a code to currency transactions. This is perfectly workable but one possible loophole for evasion would be that it is partly dependent on voluntary compliance by the taxable agent.

In our CTT proposal, we have moved on from Spahn by suggesting that the CTT be levied on a currency, not jurisdiction. As we show below, this helps close the loophole for evasion.

When a country levies a CTT, the central bank, which oversees the settlement system in that country's currency, would clearly take steps in order to ensure compliance with the CTT regime. Let us consider the example of the pound sterling becoming a CTT currency.

Currency transactions that have the pound sterling on one side would necessarily need to be settled under the aegis of the Bank of England. Of course then the Bank of England (or the Financial Services Authority) would require that all banks it regulates comply with the CTT legislation by deducting the appropriate levy from currency transactions.

If both financial institutions engaging in a pound transaction are members of the CLS, then the appropriate CTT gets deducted at the time of settlement through the CLS and is credited to the Bank of England. In case the transaction does not go through CLS, three possibilities arise: UK banks on both sides, UK banks on one side, and UK banks on neither side.

In the first and second case, the process is simple; the UK bank is responsible for deducting the CTT either through a special account or through sending the appropriate instructions to the gross settlement system (CHAPS) for crediting the Bank of England Account by the amount of the tax.

The third case is slightly more complex but still manageable. Pound balances owned by non-British banks have to be held as 'nostro' accounts in UK banks. So banks under the aegis of the Bank of England (or Financial Services Authority) are still in control of currency transactions.

127 Through Nationale Commissie voor Internationale Samenwerking en Duurzame Ontwikkeling (NCDO)

Let us consider an example where Commerce Bank US (CB) transacts a currency deal with Deutsche Bank Germany involving Pounds. Though no UK bank is involved in the transaction per se, the settlement of the deal would necessarily have to go through a UK bank. Let us assume that Commerce Bank holds a 'nostro' account with the Royal Bank of Scotland UK (RBS).

If (RBS) received an instruction from Commerce Bank US (CB) to make a payment from CB's 'nostro' account or if RBS receives a payment into CB's 'nostro' account then RBS will know that the transaction is likely to be a result of a currency transaction.

As a part of the correspondent banking arrangement, UK banks will require customers holding nostro accounts with them to advise them of the nature of the underlying transaction. If, as is likely, this transaction is a result of a currency deal, the UK bank will deduct the appropriate CTT.

Non-compliance by banks would be illegal. Given the minor cost of the CTT, the incentives for banks to comply are high as the cost of evasion could be a public rebuke or even a financial penalty, both of which hurt an institution's reputation.

2 The CLS Bank does not know the character of an underlying deal (whether it is a spot, outright forward or a swap transaction). Hence maturity cannot be assessed by CLS Bank. Will that not cause problems of avoidance?

Spahn suggests that all transactions with a maturity less than 30 days should be taxed. This creates a loophole where longer maturity transactions can be used as substitutes in order to avoid the tax. In our proposal, we suggest that currency transactions of all maturities should be taxed. This closes the loophole.

Having said that, it can be important for the CLS to know what the underlying nature of the deal is. Our conversations with CLS officials have revealed that it already has enough information to know about the nature of deals in case it needs to. In fact, the current BIS survey of the currency markets is being conducted with help from the CLS, which will use its record of transactions to help probe the nature of the financial markets. The information would include the types of deals, the maturity of deals and the nature of the counterparties.

3 For the CTT to work, it is important to know the gross amounts of the transactions. Financial instruments such as contracts for difference (CFD) and non deliverable forwards (NDF), whereby only the market value of a contract is settled, could be used to avoid the CTT.

It is important to note that these contracts are not the same as contracts on the spot/swap and forward markets. In order for hedging/investment mechanisms to work, it is critical to exchange the gross amounts of the currencies.

CFDs/NDFs are at best imperfect substitutes for the gross transactions. Given that the base tax is very small, it is difficult to understand why there would be a mass migration to these markets. Even for currencies where transaction costs are currently high and which have trading restrictions in place, the CFD and NDF markets do not constitute a sizeable proportion of the total market.

4 Would the tax not amount to a selective levy on European financial institutions?

Spahn has suggested that the CTT could be implemented in Europe. If it is applied on the basis of jurisdiction, then the tax could have a disproportionate impact on European financial institutions.

However, we have suggested that the tax should be implemented on the basis of currency. Hence, the tax would apply to all financial institutions trading a particular currency and thus does not discriminate on the basis of geographic location. So if the pound sterling were to become a CTT currency, even American banks trading the sterling in the US would be subject to the CTT. On the other hand, UK banks trading the US dollar in London would not be liable for any CTT payment.

5 Spahn is very detailed about the base tax, but seems to only pay lip service to the tax surcharge. It is not clear, how this instrument would work exactly. Besides, 'overshoot' of currency movements is almost a mechanical inevitability.

We have dealt with the tax surcharge in great detail in Appendix II on 'Our proposition for the CTT'. The statement about 'overshoot' is the result of current patterns of behaviour by currency traders.

In recent surveys of FX traders in the UK, US and Australia, more that 30% of traders have said that 'overreaction to news' is the single most important factor in determining currency prices in the very short term. The tax surcharge is a behaviour changing tax and is explicitly designed to reduce such overreaction by making such behaviour prohibitively expensive.

6 Is a CTT to counter extreme currency fluctuations really necessary? Currency speculation can be prevented by pursuing a healthy monetary policy, ensuring the independence of the central bank and the judiciary and by preventing corruption and political loans.

If such things happened, currency volatility would come down and currency crashes would become less likely but would still not disappear. This is illustrated by the following example from the Economist used in the introduction to this report.

Between May 22 and June 30 1998, the South African rand fell to a record low. The Economist's[128] analysis was that there was confidence in the president, Nelson Mandela, respect for governor of the central bank, sound economic policies and good trading figures, but speculators in the dealing rooms of London and New York, reduced the value of South Africa's currency by 20% in the space of 5 weeks.

The currency market has an entrenched interest in instability (currency volatility is good for profits) so even under the most responsible regulatory regime the market would be unstable as the major players would make money from such instability. The only effective way to address this is either to introduce capital controls or through an incentive changing market mechanism such as the CTT.

128 Down with the Rand, The Economist July 2nd 1998

7 There could be an uncertainty about the application of the tax surcharge; what happens if it does not apply at the time a contract is made, but applies at the time of settlement.

As our proposal clearly highlights there is no uncertainty about the application of a tax surcharge to any particular transaction. The tax surcharge comes into play when the currency hits a preset rate. If a transaction is concluded when the currency band has been breached, then the tax surcharge will apply and would be collected at settlement. All transactions have a time stamp on them which would reveal whether they were concluded after the tax surcharge was triggered or before. So there is no question of ambiguity.

8 The CLS will not have any incentive to collect the CTT and could refuse to do so. There are huge costs associated with this.

For any currency to be a CLS currency, co-operation of the central bank is required as the net amounts of each currency are finally settled through the gross payment systems overseen by the central bank. So in the case of the Euro becoming a CTT currency all that is needed is a request from the ECB to the CLS to help collect the levy and the CLS will have to comply or risk losing the authority or the wherewithal to settle Euro transactions. As pointed out previously, the CLS already has all the information it needs to levy the CTT and hence additional costs will only be incremental and not substantial.

9 CLS is a risk reduction mechanism; its use is not obligatory so its continuity may be endangered by the CTT.

CLS use has grown at an exponential rate. There is a strong likelihood that use of the CLS mechanism to settle FX transactions may yet become obligatory for risk reduction. In any case, the benefits of using the CLS (timeliness of transactions and risk reduction) far outweigh even the highest estimates of the additional costs. So the future of the CLS looks secure. Also, as we have described above, not using the CLS does not mean that the CTT is not payable. Tax would need to be paid no matter what mechanism is used for settlement and it is in fact cheaper to both pay and collect the tax through the CLS rather than through alternative means.

APPENDIX VII The Millennium Development Goals

The Millennium Development Goals are an agreed agenda for reducing poverty and improving lives that world leaders committed themselves to at the Millennium Summit in September 2000. For each goal, one or more targets have been set, most for 2015, using 1990 as a benchmark:

1 Eradicate extreme poverty and hunger

Target for 2015: Halve the proportion of people living on less than a dollar a day and those who suffer from hunger.

More than a billion people still live on less than US$1 a day: sub-Saharan Africa, Latin America and the Caribbean, and parts of Europe and Central Asia are falling short of the poverty target.

2 Achieve universal primary education

Target for 2015: Ensure that all boys and girls complete primary school.

At present about 110 million children worldwide do not attend school.

3 Promote gender equality and empower women

Targets for 2005 and 2015: Eliminate gender disparities in primary and secondary education preferably by 2005, and at all levels by 2015.

Two-thirds of illiterate people are women, and the rate of employment among women is two-thirds that of men.

4 Reduce child mortality

Target for 2015: Reduce by two thirds the mortality rate among children under five

Every year nearly 11 million young children die before their fifth birthday, mainly from preventable illnesses.

5 Improve maternal health

Target for 2015: Reduce by three-quarters the ratio of women dying in childbirth.

In the developing world, the risk of a mother dying in childbirth is one in 48.

6 Combat HIV/AIDS, malaria and other diseases

Target for 2015: Halt and begin to reverse the spread of HIV/AIDS and the incidence of malaria and other major diseases.

Forty million people are living with HIV, including five million newly infected in 2001. Countries like Brazil, Senegal, Thailand and Uganda have shown that the spread of HIV can be stemmed.

7 Ensure environmental sustainability

Targets:

- Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.
- By 2015, reduce by half the proportion of people without access to safe drinking water.
- By 2020 achieve significant improvement in the lives of at least 100 million slum dwellers.

More than one billion people lack access to safe drinking water and more than two billion lack sanitation. During the 1990s, however, nearly one billion people gained access to safe water and the same number to sanitation.

8 Develop a global partnership for development

Targets:

- Develop further an open trading and financial system that includes a commitment to good governance, development and poverty reduction – nationally and internationally
- Address the least developed countries' special needs, and the special needs of landlocked and small island developing States
- Deal comprehensively with developing countries' debt problems
- Develop decent and productive work for youth
- In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries
- In cooperation with the private sector, make available the benefits of new technologies – especially information and communications technologies.

APPENDIX VIII Tobin Tax Network position paper on the International Finance Facility

Introduction

This paper presents the Tobin Tax Network's position on HM Treasury's International Finance Facility (IFF). Whilst expressing the view of the network, it does not necessarily reflect the exact positions of each Tobin Tax Network member.

Summary

At first glance it may appear that, by aiming to fund the extra $50 billion required to pay for the Millennium Development Goals (MDGs), the IFF is in direct competition with the currency transaction tax (CTT) and in some way undermines and weakens the case for it. Closer analysis reveals the opposite is true: they are, in fact, extremely complementary, with the CTT compensating for various shortfalls in the IFF.

HM Treasury's candid acknowledgement of the serious funding gap that needs to be filled to meet the MDGs by 2015, the urgency of its efforts to make progress, and the boldness of the IFF proposal to secure such volumes of funding, are a refreshing and brave departure from the languid pace that has beset development finance in the past. Efforts to solicit support for the IFF from OECD countries has created a climate in which the wealthiest countries are obliged to concentrate on how to pay for the MDGs. HM Treasury's work in building this climate is propitious, not just to the pursuit of the IFF, but to many additional prospective ways of financing international development – including the CTT.

It is clear, however, that setting the bar to entry of the IFF as low as possible to maximise donor participation will only serve to perpetuate the present culture of aid. Whilst the UK has set an example by untying aid, donors that do not follow this course may use IFF disbursements to further domestic trade and industry agendas or foreign policy objectives.

It is because we are aware of these shortcomings that we can be both supportive of the IFF (whilst voicing certain criticisms) and absolutely clear of the pressing need for a substantial income stream, such as the CTT, to operate alongside the IFF, if a meaningful assault on the MDGs is to be mounted.

The target of realising the MDGs by 2015 is positive since it gives us a date on which to focus our efforts. On the other hand, it is an arbitrary date after which it would be irresponsible to suddenly cut aid flows. Having the CTT (or its like) in place will, therefore, provide a complementary financing mechanism to work alongside the IFF until 2015, which can shoulder the aid burden when the IFF moves into its pay-back phase after 2015.

This paper recommends that the Tobin Tax Network support the IFF whilst emphasising:

- the need for grants not loans
- concern over conditions of entry for participating countries

- the critical importance of donor coordination to maximise the achievement of the MDGs across countries and goals.

Background

At the 2002 G8 summit in Kananaskis, Canada, a significant pledge for global development was made in the text of the Action Plan for Africa: 'No country genuinely committed to poverty reduction, good governance and economic reform will be denied the chance to achieve the Millennium Development Goals through lack of finance.'

It is clear that the MDGs cannot be achieved with present levels of funding: an estimated $50 billion more is needed each year. In recent papers on the IFF the Treasury stated that: 'Without urgent action, we will fail to meet the MDGs by 2015.' It also stated that 'proposals for new and innovative ways to meet this funding gap include global taxes, special drawing rights and the Tobin Tax. The UK approaches further evaluation of all these options with an open mind.' However, HM Treasury's preferred option to finance the implementation of the MDGs is the IFF, which aims to raise an extra $50 billion each year up until 2015.

The Treasury's vigorous efforts to secure the IFF were rewarded at the 2003 G8 Summit in Evian when the concluding statement explicitly requested finance ministers 'to report back to us in September [2003] on ... financing instruments, including the proposal for a new International Finance Facility'.

The IFF mechanism

By issuing 'long term bonds' on the international capital markets, the IFF will be able to borrow funds backed by guarantees of donor countries against their long-term national aid commitments. This will significantly increase aid flows between now and 2015, and create a binding commitment from donors to provide additional resources towards meeting the MDGs. This 'front-loading' of aid in the short term reflects both a commitment to, and a method of, achieving the substantial increases in resources required to meet the MDGs. The initiative is a marked shift from the unpredictable process of increasing aid budgets, which are contingent on domestic priorities. Recipient countries will be reassured that aid flows will be stable and predictable until 2015. However, donor countries will then repay the borrowed money out of their aid budgets, which may lead to a significant fall in aid levels after 2015.

The funds raised will be issued in the form of grants and/or concessional loans, and be conditional on recipient countries 'following good governance and implementing sound policies'. The IFF is intended to build on existing agreements between developed and developing countries, with each country:

- pursuing sound, transparent and corruption-free policies
- committing to the Doha development agenda – a sequenced opening up of markets to global trade
- establishing the conditions required to raise private investment levels
- improving aid effectiveness by agreeing on clear plans for building education, health and economic capacity, with higher levels of development assistance.

The funds will be distributed through existing bilateral and multilateral mechanisms, and would reflect donors' preferred recipient countries and delivery channels.

Advantages of the IFF

The IFF has the advantage of being founded on long-term commitments which will improve the predictability of aid flows, and aims to supply aid in sufficient volume and at the most critical time to meet the MDGs by 2015. This concentration of aid over the next 10–12 years would constitute an unparalleled investment in development with benefits that will accrue over time as infrastructure is put into place in the poorest countries.

Concerns over the IFF's effectiveness in meeting the MDGs

1) Grants or loans

A major concern is whether IFF aid flows will take the form of grants or loans. If the IFF delivers funds in the form of loans, there is a risk of increasing the debt burden of developing countries after 2015. This is especially concerning in the case of low income countries, particularly those that are or have been highly-indebted poor countries. Since this could be extremely counterproductive, it is desirable that all IFF aid be delivered in the form of grants in the same way as CTT funding is envisaged to operate. However, for reasons of maximising donor participation, prescriptive ground rules such as 100% grants and all aid being untied are not requirements of the IFF proposal.

2) Conditions of entry

A basic condition of the IFF is that no country in arrears with the IMF can receive funding. The reasons for arrears by some of these countries may be bad governance. However, should people living in so-called 'bad policy' countries be deprived of aid and effectively discriminated against because of the nature of their governments? It is arguable that people living in these circumstances are often most in need of aid.

This paper contends that IFF funds should be diverted on the basis of need, and the likelihood that such aid would contribute to meeting the MDGs. In order to address delivery of aid in the case of 'bad policy' governments, we propose a parallel condition that allows the IFF to specifically fund development work through local civil society groups instead of government.

The IFF proposal suggests that countries will be selected as aid recipients based on factors such as their willingness to open up their markets to investment and global trade. However, economists disagree about the extent to which trade liberalisation increases growth and reduces poverty. It is likely that efforts to build up productive capacity before liberalisation will be key. Many analysts consider the one-size-fits-all approach to be flawed, and that rapid and insensitive liberalisation has led to large numbers of people becoming more vulnerable and prone to poverty. Making IFF money contingent on opening markets means that it will be harder to put those complementary policies in place first, and may preclude the participation of some countries who are in urgent need of aid.

There is a certain lack of clarity surrounding eligibility for IFF funding among the world's poorest countries, which may suffer from poor governance, corruption and conflict. It seems that these countries, which have the most vulnerable populations, will be the most likely candidates for

exclusion. However, this is a problem related not only to the IFF, but to all concessional flows, including World Bank loans, aid and debt relief.

Funding from CTT revenues is likely to be through a body linked to the United Nations with input from OECD countries that have adopted a CTT. Conditions of disbursement of funds to 'bad policy' countries may be similar to those imposed by the IFF. However, it seems clear that since the IFF and the CTT funding body will in many instances have differing criteria, some countries and programmes excluded from IFF funding would be eligible for financing from CTT revenues.

It is because some countries and programmes will be excluded from IFF funding by certain conditions of entry, and because IFF donors are likely to continue with the present culture of aid, funding countries through conditional aid arrangements, that there is a compelling case for another funding stream such as the CTT to complement the IFF. Indeed, with the exclusion of some countries and programmes in this way, it is hard to conceive of how the MDGs can be met, if an alternative, powerful, source of development finance, such as the CTT, does not exist.

3) Post 2015

After 2015 there will clearly still be a need for aid. Since, by the logic of the IFF scheme, aid flows are likely to fall after 2015, it is necessary that alternative funding channels are on stream in parallel with the IFF.

The Goldman Sachs Report on the IFF states that after 2015: 'there is no upfront commitment to participate in subsequent programmes'. As the IFF's bond repayment phase begins, recipient countries could be starved of further aid. The CTT, by contrast, would provide funds indefinitely (as long as currency markets operate).

Due to the short-term nature of the IFF, it is important that the Treasury takes responsibility for what will happen after 2015. Securing a powerful income stream, such as the CTT, alongside the IFF is therefore necessary in order to sustain the impetus of the quantity of development work the IFF aspires to create.

4) The need for financial stability to prevent the MDGs being undermined

If the MDGs are to be met, there is a need to address the way the world economy operates, to protect vulnerable countries and safeguard aid flows. What would be the point of the IFF raising huge sums if economies of recipient countries are prone to speculative attack, such as devastated the 'Asian Tigers' in the late 1990s? Without frameworks in place to minimise financial shocks, most of the benefits of aid can be wiped out in a short period of time.

The circuit-breaker component of the two-tier CTT would contribute significantly to financial stability by deterring, indeed making unprofitable, the most damaging practice of collective actions by powerful financial actors to drain the foreign exchange reserves of poor countries.

5) Is $50 billion extra per year up to 2015 enough?

The World Bank is currently working on more detailed assessments of the costs of delivering the MDGs. The results of this research are likely to lead to a call for at least a doubling of current aid levels. Many Tobin Tax Network members feel that even this will be insufficient.[129] Far more realistic calculations of the actual costs – goal by goal and country by country – are still required.

Since the possibility exists that $50 billion extra per year will not be sufficient, it would be expedient that other sources of development finance, such as the CTT, be seriously considered as accompanying income streams.

6) Dangers of a lack of donor coordination and the perpetuation of the current aid culture

To deliver such a complex set of development objectives such as the MDGs by 2015 will require a high degree of coordination between donor countries. The Treasury insists that the IFF is merely a funding mechanism and makes no claims to disbursement responsibilities. As yet there seems no plan for IFF donors to operate in a joined-up way.

However, without coordination, delivery of the MDGs is bound to be a hit-and-miss process. Donors are likely to provide funding on the basis of preference rather than need. There is also a clear risk that aid would flow to countries most likely to succeed in achieving the MDGs, whilst other, more needy cases are neglected. Unless this is addressed it is likely to result in considerably unbalanced outcomes, leaving large swathes of the poorest populations no better off.

Yet perhaps the greatest danger of relying solely on the IFF is that, with no intention of altering the present aid culture, ineffective and inefficient aid practice could simply be multiplied by the considerable increase of funds and will not result in the achievement of the MDGs as planned.

By contrast, work with the NGO community to create the criteria for disbursement of CTT funds specifically addresses these problems and looks to learn how to maximise aid efficiency from past experience and best expertise. CTT funding, in contrast with the IFF, is intended to be disbursed through an international body with a global, rather than a national perspective, and the overarching purpose of eliminating poverty and meeting basic human needs.

7) Concerns over the political will of prospective donors to participate

The biggest hurdle the Treasury faces in the realisation of the IFF is securing the involvement of those countries that can afford to be donors. Furthermore, there is an urgent time consideration: the IFF needs to be operational as soon as possible, because every day delayed is a day lost in the timeline towards 2015.

Of the G8 countries, France is the only one to have displayed definite support for the IFF to date. Germany faces serious economic difficulties and is hostile to the idea of increasing its borrowing commitments. For various reasons Japan, Canada, Italy and the US are not yet prepared to sign up. Clearly, the US is pivotal in this situation, because many countries would follow their lead, yet they seem reluctant to acknowledge the entire concept of the MDGs.

Many northern European countries have reached 0.7% of GNP for international development aid, as well as pursuing debt relief, and appear reluctant to commit any more funds through joining the IFF to cover what they see as the G8's failure to provide adequate aid in the past.

129 Oxfam's report 'Last Chance in Monterrey', launched prior to the UN Financing for Development conference in March 2002, estimates that an extra 100 billion dollars a year will be needed.

However, there is some room for optimism, since the concluding statement from the Evian G8 summit explicitly requests finance ministers to report on the IFF proposal at the next IMF/World Bank meetings in September 2003.

Conclusion

Conditions of entry may exclude some countries from the IFF. It also seems that a number of important donor countries may not sign up to the IFF, affecting the volume of revenue that it will actually raise. The CTT is of particular importance as a complementary funding stream with the IFF because:

- it could fund areas that the IFF ultimately would not
- the IFF may not raise the entire $50 billion as planned
- it is vital that development financing of this magnitude does not cease after 2015.

Whilst expressing certain concerns the Tobin Tax Network broadly supports HM Treasury in its efforts to secure the IFF. However, it is important that this support is met with the acknowledgement that alone the IFF is unlikely to achieve the MDGs and that another powerful income stream such as the CTT is a necessary, rather than an optional, accompanying initiative. The Tobin Tax Network strongly contends, therefore, that the CTT and the IFF are complementary sources of substantial finance for the achievement of the Millennium Development Goals.

Frequently Asked Questions

1 What is the Tobin Tax?

The Tobin Tax or currency transaction tax (CTT) is a proposed tax on the foreign exchange market named after James Tobin, the late Nobel Prize winning economist, who first proposed the idea.

2 Why is the CTT so important, necessary and relevant now?

The CTT can achieve two substantial outcomes: far greater economic stability and significant income to pay for urgently needed development in the world's poorest countries.

a. Economic stability

The CTT is a powerful tool for economic stability. The trade in money is, not surprisingly, the richest market in the world. The buying and selling of currencies such as pounds, euro and dollars is valued in billions everyday. Foreign exchange rates are critical for economies. They determine the growth rate, the price paid for imports, foreign investment and the cost of foreign borrowing. Volatility in this market caused by currency speculation is thus a significant threat to economic stability.

The Asian crisis in 1997–8 was made considerably worse by the speculative activities of powerful financial actors and led to an economic disaster in the region. According to the International Labour Organisation the effects were felt worldwide and an estimated 10 million people lost their jobs. Financial shocks caused by currency speculation are, therefore, a major cause of poverty especially in transition economies.

b. Substantial income for sustainable international development

Most of the world's countries have signed up to the UN Millennium Development Goals (MDGs). These vital development targets include halving world poverty by 2015 and making drastic improvements to the high rates of maternal and infant mortality, and access to clean water, medicines and education. It is widely accepted that unless considerably greater revenue is introduced, the MDGs cannot be achieved. A CTT levied in Europe on, for instance, the Euro, the pound and the Swiss franc would generate billions of dollars worth of revenues. In 2000, the French Ministry of Finance calculated that if the EU alone implemented a CTT it would generate 22 billion Euro per year.

3 How does the CTT achieve these two different goals of creating economic stability and financing international development?

The CTT raises revenue by taxing every currency transaction. The total volume of the foreign exchange (FX) market is calculated at in excess of three hundred thousand billion dollars ($300,000,000,000,000) each year. A base rate tax as small as 0.005% would generate in the region of $15 billion dollars of revenue every year.

For the most part the CTT would operate at this very low base rate raising revenue to finance international development. However, if a nation's currency becomes subject to a speculative attack and its value changes dramatically (exceeding an agreed band of safe fluctuation) then

the tax rate would automatically rise to an extremely high rate (as high as 50%) so as to make it unprofitable for financial actors to continue trading in that currency.

Today's CTT (developed by German economist Paul Bernd Spahn) is, therefore, a two-tier tax. The first tier is a very low rate tax on the huge turnover of the FX market to finance international development; the second tier is a very high rate tax to act as a circuit-breaker to prevent financial shocks caused by excessive speculation.

4 How big is the foreign exchange market?

The foreign exchange (FOREX) market is the largest market in the world, with enormous sums being traded everyday. The size of the market is so huge that it is quite difficult to comprehend the amounts involved. More than $1,200 billion (or $1.2 trillion) worth of currency is traded each day, more than three (3) hundred (00) thousand (000) billion (000,000,000) dollars ($300,000,000,000,000) each year.

This sum of money can be represented by a stack of $100 bills that would stretch from the earth to the moon over 200,000 miles away. This colossal amount represents more than 50 times the total volume of world trade and is 10 times more than the sum total of the world's productive output (world GDP) every year – a vast bubble of money over the real world of actual things that we buy and sell.

5 How will the CTT be collected?

Technically there are two different ways to impose a CTT. You can tax the currency trading desks in a particular jurisdiction – say in the UK; or you can tax a currency – say pound sterling. Both methods have arguments for them, but it is more difficult to evade the tax if it is imposed on the currency.

It works like this: If the UK signs up to the CTT – then all pound transactions, wherever they are conducted in the world, are taxed – so trading pounds in the Cayman Islands will not avoid the tax. This is so because a pound is essentially a claim on the Bank of England. Foreign holders of pounds have to hold them as claims on banks in the UK (nostro accounts) and thus they eventually end up as claims on the Bank of England.

If the UK is signed up to the CTT then the Bank of England will have the authority and the resources to subtract a 0.005% (if this is the rate) currency transaction charge and deliver it to the designated international development fund.

In fact, the increasingly electronic nature of the currencies market means there are few technical barriers to the collection of the tax. This is becoming even easier with the recent advent of the Continuous Linked Settlement (CLS) mechanism – a new system to significantly reduce the risk of large foreign exchange deals by making all payments to settle a currency transaction simultaneous and centralised. This prevents the possibility of any parties to the deal defaulting. However, it is widely accepted that it also makes the CTT far easier to implement.

6 Will the CTT be avoided or evaded? Is evasion of the CTT through tax havens realistic?

In fact, the very nature of this market is that it is concentrated in the hands of a few very large financial actors dealing in enormous sums of money every day. This means the market players have an umbilical connection to central banks and operate from leading global financial centres such as London and New York. These actors might attempt to avoid the CTT by inventing new financial products. However, new products create new costs and many currency transaction instruments cannot be easily substituted. Wholesale avoidance is not very realistic especially when the rate of the tax is extremely low. As for evasion, how many banks or large financial institutions would risk their reputations and relationships with government by evading an ordinary small tax?

Incentive to evade the CTT (or any tax) is to a large extent based on the level of the tax. Banks and other financial institutions will weigh the potential cost of evasion (penalty, suspension of licence, reputation risk and the actual technical costs of evasion through new legal entities and new instruments) against the costs of compliance (a small percentage of their total profits). At a tiny tax rate 0.005% it is believed that the incentive to evade would be very low as the costs of evasion would be much higher than the cost of compliance.

Another argument is that new and more complicated methods of currency transactions could be introduced to avoid the CTT. However, new forms of transactions imply costs to traders and could make completion of transactions more complicated and risky. Transforming such instruments would imply a cost that is even greater than the tax itself. As the tax is minimal, it is unlikely to be worthwhile inventing methods that cost more than the tax that is levied.

There have also been suggestions that there will be a rise in 'currency transaction tax havens' and transactions will move to these locations to avoid the tax. Moving offices to off-shore countries will entail re-location costs, which will be greater than bearing the expense of a minimal tax. Also, electronic collection via the settlements system is virtually unavoidable on exchanging a particular currency, wherever physically in the world the trade is transacted.

It can be argued that a proportion of people and companies will always try to evade taxes – such as income tax, VAT, inheritance tax – but this not a reason not to tax them. Despite the efforts of some to evade payment the vast majority do pay their taxes and revenues collected are considerable. What is required is the political will to implement currency transactions taxation and provide the necessary legal enforcement to ensure payment and penalise evasion. Also, due to the nature of the market, evasion is now technically difficult as virtually all foreign exchange transactions can be electronically traced.

7 Why do we need more money to combat poverty?

Most people are aware of the acute disparity in living conditions and opportunity between the rich countries of the world and the poorest. The following facts starkly illustrate why more money is urgently required to combat poverty now.

More than a third of the world's children do not have sufficient food to eat – 30,000 die every day. Malnourishment and related conditions cost the lives of more than 10 million children every year.

Nearly one in every five people in the world lives on less than 50 pence per day. Not only do they often not have enough to eat, but have little or no access to safe drinking water or adequate sanitation.

The average life expectancy for women in Japan for instance at 84 years is more than twice the life expectancy for women in Botswana at 39 years.

The Human Development Report 1999 stated that the ratio between the combined incomes of one-fifth of the world's people living in the richest countries to the one-fifth living in the world's poorest countries has shifted from 30:1 in 1960, to 61:1 in 1991, to 86:1 by the late 1990s. This growing disparity is epitomised by the fact that the assets of the world's three richest individuals now exceed the combined GNP of 600 million people living in the world's poorest countries.

The UN estimates that over $50 billion in additional aid flows are needed every year to cut down poverty levels by half by the year 2015. The CTT can raise a significant proportion of this additional money.

8 With shocking levels of poverty in the world, how can countries respond?

All countries of the United Nations are signed up to the UN Millennium Development Goals (MDGs) that include, by the year 2015: halving world poverty, achieving primary schooling for all children and substantially reducing infant and maternal mortality (see Appendix VII). However, most experts agree that a minimum of $50 billion ($50,000,000,000) per year is required over and above what is being spent now to pay for them.

At their present levels the combination of gradually increasing overseas development aid (ODA), improving the terms of trade and securing greater debt relief are simply not sufficient to realise these goals by the agreed date of 2015. It is now widely recognised that there is an urgent need for new funding streams such as the CTT to pay for the MDGs.

9 In terms of revenue potential how much difference would the CTT make?

There has been considerable research conducted on what the proceeds from the CTT are likely to be. It is widely agreed that a very low rate is likely to generate the most money because the enormous volume of the market will not be significantly reduced by such an imposition. A rate as low as 0.005% is estimated to generate between $10 billion – $15 billion per year. The CTT, therefore, has the potential to make a huge difference to the well-being of millions of people.

10 How will the CTT make a real difference to developing countries?

Increased and consistent funding is crucial to the success of development projects. The MDGs target the alleviation of poverty on a grand scale. The low rate CTT can provide significant and consistent revenue for the foreseeable future giving development projects stability and sustainability. As well, and most importantly, the high rate CTT by preventing damaging speculation allows many developing countries (who currently hold excessively high levels of unproductive FOREX reserves to protect their currencies in case of attack) to free up a reasonable proportion of their reserves to be spent productively on the needs of their citizens.

11 Does the CTT need to be universal to work?

Unlike previous proposals that were based on taxation within a jurisdiction, our version of the CTT envisages a tax that is levied on currencies. This means that the tax is imposed, monitored and collected unilaterally.

All foreign exchange transactions involving a country's currency would need to be settled in that country as a currency can only exist as bank balances held within the borders of the country to which it belongs. All non UK banks and other financial institutions, holding pounds, hold them in 'nostro' accounts with banks registered in the UK.

Currency transactions involving the pound sterling would necessarily need to be settled under the aegis of the Bank of England. This means that a CTT currency would be taxed at the point of settlement in the UK or through the CLS bank.

When a government levies a CTT on its currency, the central bank (or the government) which oversees the settlement system would clearly need to take steps in order to ensure compliance with the CTT regime. The Bank of England (or the Financial Services Authority) would require that all banks that it regulates comply with the CTT legislation by deducting the appropriate levy from currency transactions involving the pound.

Since all pound transactions have to go though UK banks, no matter if they are transacted in the US or the Cayman islands, they can be subject to the CTT in the UK. So the tax does not need to be universal to work and any country can impose the CTT on its own currency. Chile in the 1980s and Malaysia in the 1990s have successfully imposed some form of currency transaction taxes unilaterally.

12 How would a CTT benefit: i) the global economy? ii) national governments iii) trade, foreign investment and business?

i) Benefit to the global economy

It could boost world trade by helping to stabilise exchange rates. Wildly fluctuating rates play havoc with businesses dependent on foreign exchange, as prices change profits move up and down, depending on the relative value of the currencies being used. When importers and exporters can't be certain from one day to the next what their money is worth, economic planning suffers. Reduced exchange-rate volatility means that businesses would need to spend less money 'hedging' (buying currencies in anticipation of future price changes), thus freeing up capital for investment in new production. Also, hedging itself would become less expensive.

It would increase cross-border investment and foreign trade, both of which are growth enhancing. The CTT would also help governments maintain lower interest rates that would in turn stimulate global economic growth.

The CTT could help prevent future crises by reducing overall speculative volume and the volatility that feeds speculative attack.

ii) Benefit to national governments

The CTT would make it easier for governments to pursue fiscal and monetary policies that are best suited to the domestic environment. In combination with a lower likelihood of financial shocks, a lower interest rate environment, higher investment and trade this would help increase economic growth and employment within all countries both developed and developing. Developing countries would also benefit from increased aid flows generated by revenues from the tax.

iii) Benefit to trade, foreign investment and business

The CTT would be good for business. Exchange rate fluctuations are costly for firms conducting international trade. They have to pay an insurance (hedging) to protect themselves against adverse currency changes and this is expensive. Even big firms cannot hedge fully. Small and medium sized firms often find it too expensive to hedge at all. By stabilising the exchange rate, the CTT would reduce the necessity to hedge, thereby eliminating or reducing this cost, making it less expensive to trade. This would lead to an increase in international commerce, creating more opportunities for business. Additionally, a reduced likelihood of financial shocks would enable businesses to plan over a longer horizon and make more efficient investment decisions.

13 Is the CTT a radical proposal?

In fact, the CTT is a mainstream proposal. The base rate of the tax is conceptually identical to security transaction taxes that are already a part of mainstream financial systems. These taxes are levied in six of the G 10 economies. Two examples are the 0.5 % stamp duty reserve tax levied in the UK and a 0.002% tax on all stock transactions in the US. The former raises more than £4 billion annually for the UK Treasury, the latter about $2 billion for the US Federal Reserve. Belgium, Italy and Switzerland are some of the other countries that have some form of security transaction taxes.

The higher (circuit-breaker) rate of the tax, sometimes called the surcharge rate or the second tier, acts as a means of halting excessive volatility. It is conceptually identical to the circuit breaker that was introduced in the New York Stock Exchange after the Black Monday crash in 1987. Nowadays, if a share price moves too dramatically, sale in stock of that company is automatically suspended. This success in reducing volatility has led to the circuit-breaker being introduced in most other stock exchanges in the world.

14 Is the CTT feasible? Would it be expensive to collect?

The CTT is technically feasible especially now that the market is electronic. At the point at which a currency transaction is settled, the tax can be automatically collected from the networks through which the deals are taking place and the revenue paid to central banks or the relevant Finance Ministry. There is no need to create an expensive new institution to collect the tax. The CTT can, therefore, be practically implemented at low cost.

15 Did James Tobin ever reject the Tobin Tax in the last years of his life?

The answer is a categorical: 'No'. James Tobin, who died on 11 March 2002, was interviewed and asked this question in the last year of his life. It is true that he had become increasingly concerned at the attention his tax had gained because of its adoption by some so-called 'anti-globalisation' groups. He stated that he had 'nothing to do with them and am not informed of

their platforms.' However to conclude that he was opposed to the Tobin Tax is a mistake. As he put it: 'This disavowal does not mean I disavow my own proposal. I certainly do not. I cannot control the use of the words 'Tobin Tax'. While I assume that most advocates mean well, I deplore the tactics of some extremists. (Financial Times, 11 September 2001)' So James Tobin never rejected his tax only some of the extremist platforms to which it had become bolted.

Glossary

Arbitrage The simultaneous purchase and sale on different markets of the same or equivalent financial instruments to profit from price or currency differentials to make a low risk profit.

Ask The price at which the currency or instrument is offered for sale.

Back Office Settlement and related processes for a financial institution.

Balance of payments (BOP) The total of all international transactions undertaken by a country during a given time. Sales to foreigners are recorded as credits while purchases of goods, services or assets are recorded as debits. The BOP statement includes summaries of both the current account and the capital account.

Band The range in which a currency is officially permitted to move.

Bank for International Settlements (BIS) Acts as a clearing house for transactions between the world's central banks and draws up banking regulations. Set up in 1930, its board is controlled by developed country governments.

Basis point One per cent of one per cent often abbreviated to BPS.

Capital Wealth available for input into the economy. Real capital is invested in equipment, buildings and production. Finance capital is stored in banks or invested in financial instruments. Human capital is the economic value of people's knowledge, skills and physical work.

Capital account The section of a country's balance of payments statement which totals all international purchases and sales of assets including foreign direct investment, portfolio investment, bank loans, other securities and foreign currency holdings.

Capital controls Measures enacted to control foreign exchange transactions in order to manage capital flows.

Capital flows The movement of foreign exchange from one country to another. The types of transactions used to move money internationally include: loans and loan repayments, bond issues and payments, foreign direct investment and capital repatriation, and portfolio investment such as stocks, bonds and derivatives.

Central bank The central bank is a country's official bank. It is responsible for issuing currency, setting monetary policy, interest rates, exchange rate policy and together with the government for the regulation and supervision of the private banking sector.

Circuit breaker Price change limits and trading halts intended to reduce excessive price fluctuations

Clearing house An exchange-associated, usually independent organisation, through which all contracts are made, offset and delivered.

Contract for difference (CFD) A futures contract which is settled by a cash payment reflecting the monetary difference between the initial transaction price and the price of the underlying currency on expiry.

Correspondent Bank The foreign banks' representative who regularly performs services for a bank which has no branch in the relevant centre, e.g. to facilitate the transfer of funds.

Crawling peg A method of exchange rate adjustment; the rate is fixed/ pegged, but adjusted at certain intervals in line with certain economic or market indicators.

Currency Transactions Tax (CTT) Today's CTT (developed by German economist Paul Bernd Spahn) is a two-tier tax. The first tier is a very low rate tax on the huge turnover of the FX market to finance international development; the second tier is a very high rate tax to act as a circuit-breaker to prevent financial shocks caused by excessive speculation (see Tobin Tax).

Current account The section of a country's balance of payments statement which totals international transactions for import and export payments, interest on debts, profits from foreign direct investment and aid grants. The current account is a broad measure of a country's trade balance. (A negative current account balance = a trade deficit)

Dealer An individual or firm acting as a principal, rather than as an agent, in the purchase and/or sale of securities. Dealers trade for their own account and risk.

Derivatives A type of financial instrument whose value is 'derived' from the price of some underlying asset (e.g. an interest level or stock market index). They are designed to help companies 'hedge' (protect themselves against the risk of price changes) or as speculative investments from which great profits can be made. The rapid growth in derivatives trading has played a major part in the growing volatility of the global financial system.

Devaluation The drop in the value of one currency relative to others. Devaluation can either be voluntary as an outcome of change in government policy or can be forced when a currency comes under very strong selling pressure from currency traders.

Exchange rates The price of one country's currency relative to another (e.g. £1 = US$1.8) Exchange rates can be managed according to three basic systems – floating, fixed or pegged.

Eurocurrency A currency domiciled outside its country of origin normally held by non residents.

Floating Exchange Rate An exchange rate where the value is determined by market forces. Even floating currencies are subject to intervention by the monetary authorities. When such activity is frequent the float is known as a dirty float.

Fiscal policy Government macroeconomic policy that seeks to influence general economic activity through control of taxation and government spending (see also monetary policy).

Fixed Exchange Rate Official rate set by monetary authorities for one or more currencies. In practice, even fixed exchange rates are allowed to fluctuate between definite upper and lower intervention points

Foreign direct investment (FDI) The purchase of land, equipment or buildings or the construction of new equipment or buildings by a foreign company. FDI also refers to the purchase of a controlling interest in existing operations and businesses (known as mergers and acquisitions). Multinational firms seeking to tap natural resources, access lucrative or emerging markets, and keep production costs down by accessing low-wage labour pools in developing countries are FDI investors. Classic examples of FDI include American banks taking over Korean ones or Canadian mining companies building mines in Brazil. (See also portfolio investment)

Foreign exchange Currency issued by a foreign government. Foreign exchange is required to pay for imported goods and to meet foreign debt repayment obligations. Most of the trade in foreign currencies occurs between large international banks. Unlike stock markets, the 'foreign exchange market' does not exist in any specific location.

Forward A customised foreign exchange contract that is struck today for settlement at a specified future date.

Futures A Standardised foreign exchange contract giving the obligation to buy or sell a currency at a set date in the future

G-20 A group composed of the Finance Ministers and central bankers of the following 20 countries: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom, the United States and the European Union. The IMF and the World Bank also participate. The G-20 was set up to respond to the financial turmoil of 1997–9 through the development of policies that 'promote international financial stability'.

Globalisation Refers to the increasing economic integration and interdependence of countries. Economic globalisation in this century has proceeded along two main lines: trade liberalisation (the increased circulation of goods) and financial liberalisation (the expanded circulation of capital).

Gross Settlement A process where full payment of each transaction is made rather than clearing a group of transactions as currently occurs in the FX market. A method designed to eliminate capital risk.

Hedge fund This is a private, unregulated investment fund for wealthy investors (minimum investments typically begin at US$1 million) specialising in high risk, short term speculation on bonds, currencies, stock options and derivatives.

Hedging The process of insuring against unfavourable moves in exchange rates typically to protect the value of investments or deals. Hedging is an increasingly necessary business expense in times of high exchange rate volatility and may be done by purchasing products such as forwards, futures, swaps or derivatives.

Herd behaviour The tendency of investors to behave as a pack in response to rumoured market changes. This leads to panic in moments of crisis and the sudden withdrawal of enormous quantities of investment from countries suddenly perceived to be vulnerable to collapse (a phenomenon known as capital flight).

IMF (International Monetary Fund) An international organisation established in 1944 to provide short term financial assistance to countries needing to stabilise exchange rates and alleviate balance of payments difficulties. Since the 80's the IMF has becoming increasingly involved in the economic decision-making of nations through the conditionality associated with its loans.

International financial architecture A catch all phrase for the policies, programmes and institutions required to manage the increasingly globalised world of finance.

Leverage A mechanism by which a small margin deposit can control a much larger total contract value. It confers the ability to make extraordinary profits or losses at the same time as keeping the upfront commitment capital to a minimum and is achieved by investing borrowed money.

Limit Order A buy or sell order which has restrictions upon its execution. The client specifies a price and the order can be executed only if the market reaches that price.

Liquidity The availability of sufficient ready resources to meet payments and obligations needs. It is also measured by the presence of a sufficient number of buyers and sellers for a particular currency so a single deal does not change the price of a currency significantly.

Mark to market The daily adjustment of an account to reflect accrued profits and losses arising out of the changes in the market price of a currency.

Monetary policy Government macroeconomic policy that seeks to influence general economic activity by controlling credit and interest rates and the domestic money supply (i.e. the amount of currency in circulation).

Moral hazard A term based on the principle that if actors are allowed to escape the consequences of their risky actions, they are more likely to engage in reckless behaviour in future.

Nostro Account A foreign currency current account maintained with another bank. The account is used to receive and pay currency assets and liabilities denominated in the currency of the country in which the bank is resident.

Option A contract conferring the right but not the obligation to buy (call) or to sell (put) a specified amount of currency at a specified price within a predetermined time period.

Over-the-Counter Transaction (OTC) A transaction arranged by direct negotiation, usually by telephone, rather than on an exchange.

Portfolio investment Refers to the purchase of foreign stocks, bonds or other securities. In contrast to FDI, foreign portfolio investors have no controlling interest in the investment, which is typically a short-term one. The relative ease with which portfolio investment can enter and exit countries has been a major contributing factor to the increasing volatility and instability of the global financial system.

Reserves Foreign exchange funds held against future contingencies, normally a combination of convertible foreign currency, gold, and special drawing rights. Official reserves are to ensure that a government can meet near term obligations and also to decrease the likelihood of speculative attacks on the currency.

Securities These are financial instruments (such as bonds or stocks) that can be traded freely on the open market. 'Securitisation' refers to the pooling of loans or assets for subsequent sale to investors.

Speculation Buying or selling currency in expectation of an exchange rate movement, so as to make a profit, either in the same market or between two different markets, e.g. forex cash markets and derivatives markets. A speculative 'attack' occurs when a large number of investors anticipate a reduction in currency values and sell off large quantities of their holdings (thereby often creating the price crash they predicted). Speculators often work for major banks and investment firms.

Spot The most common foreign exchange transaction that requires settlement within two business days of the sale or purchase of a currency.

Sterilisation Central Bank activity in the domestic money market to reduce the impact on money supply of its intervention activities in the FX market.

Swap The simultaneous purchase and sale of the same amount of a given currency for two different dates, against the sale and purchase of another. A swap can be a swap against a forward. In essence, swapping is somewhat similar to borrowing one currency and lending another for the same period. However, any rate of return or cost of funds is expressed in the price differential between the two sides of the transaction.

SWIFT Society for World-wide Interbank Telecommunications. A Belgian based company that provides the global electronic network for settlement of most foreign exchange transactions.

Technical Analysis Analysis based on market action through chart study, moving averages, volume, open interest, oscillators, formations, stochastic and other technical indicators.

Tobin Tax Nobel Prize winning economist James Tobin first proposed a small tax on foreign exchange transactions in 1970s as a way of increasing policy independence for countries. The remit of the tax was expanded in the early 1990s when its potential for raising billions of dollars of revenue was recognised. By placing a small levy on the currency trade, tens of billions of dollars can be raised in order to meet the UN MDGs and alleviate global poverty. The SE Asian crisis served to highlight the potential of the tax as a means of enhancing stability in the currency markets.

Volatility A measure of the amount by which a currency exchange rate is expected to fluctuate over a given period.

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