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# **HOW CAN A CURRENCY TRANSACTION TAX STABILIZE FOREIGN EXCHANGE MARKETS?**

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In 1971, after the demise of the international monetary system, the so-called Bretton Woods system that ensured semi-fixed exchange rates thanks to capital controls, James Tobin conceived his now-famous "Tobin tax". Since then, some supporters of his original proposal have introduced some major changes to make it more suited to financial globalization. Paul Bernd Spahn (2002) in particular has proposed a two-tier Currency Transaction Tax (hereafter CTT). The CTT could curb the usual speculation that occurs during "normal times" but also deter big speculative attacks that strike especially, but not exclusively, developing countries. I would add that a fine tuned CTT could discourage, if not suppress, capital flights that plague fragile developing countries before and after the burst of an economic crisis. However it is true that a CTT cannot do everything, but the same is true for every other proposal such as prudential regulations and capital controls. Rather than looking for the fairy's wand, it is wiser to combine a full array of instruments at hand to construct a safe financial environment for economic progressive policies.

## **The Efficiency of a Two-Tier CTT**

As one of the purposes of the CTT is to reduce speculation in currencies, the first simple question we have to consider is: does speculation exist? The question may appear naive, but neither banks, nor their big customers (multinational firms, insurance companies,

mutual funds, pension funds and hedge funds) recognize that they speculate (with the exception of hedge funds). Banks call speculation “proprietary trading” and they conceal the profits (and the losses) they make from it inside otherwise profitable trading books. A whole literature depicts traders’ activity as essentially providing liquidity to the market and rendering services to their customers. When they speculate, it is only to assume the risks that other agents don’t want to assume. When big speculative attacks lead to a major devaluation of a currency, it is always the government’s fault of the affected country. So, it is not useless to assess the importance of speculation.

***Does speculation on currencies exist?***

The answer must distinguish between ordinary speculation and major speculative attacks that cause strong depreciation of the foreign exchange rate and is often associated with economic crisis.

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	INTRADAY	WITHIN 6 MONTHS	OVER SIX MONTHS
Bandwagon effects	29.3	9.5	1
Over-Reaction to news	32.8	0.7	0
Speculative forces	25.3	30.7	3.1
Economic Fundamentals	0.6	31.4	82.5
Technical Trading	10.3	26.3	11.3
Other	1.7	1.5	2.1

Source: Y.W. Cheung, M. D. Chinn, I. W. Marsh, 2000, p 21.

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The importance of speculation on a short-term horizon can be best understood thanks to a survey of UK based foreign exchange dealers conducted in 1998 (Y.W. Cheung, M. D. Chinn, I. W. Marsh, 2000). 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 the table.<sup>1</sup>

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<sup>1</sup> These results are confirmed by two other surveys that asked exactly the same questions to traders and obtained nearly the same results. One by Cheung Y., Chinn, M.D. (2000) is a survey of the U.S. market and the other one by T. Hutcheson (2000) is a survey of the Australian market.

Intraday, over-reaction to news was cited most frequently, closely followed by bandwagons effects<sup>2</sup> and speculative forces. Technical trading<sup>3</sup> is ranked low and economic fundamentals<sup>4</sup> are deemed irrelevant. For example, 61% of the panelists judge that interest rate news is incorporated into the current price within ten seconds of the announcement. The dominant interpretation of the news will create a trend, thanks to bandwagon effects, and speculation will build on it. At medium-run (within 6 months) news ceased to be important as they are already incorporated, while economic fundamentals, speculative forces and technical trading comes to the fore. Over the long run (over 6 months), economic fundamentals are the only factor of real importance.

Speculative forces are then the only factor perceived to have a significant role in determining prices over both the intraday and the 6 months horizons.<sup>5</sup> This raises immediately the question:

***Is ordinary speculation destabilizing or stabilizing?***

When asked, US traders answer that speculation increases volatility (84%) but at the same time pushes exchange rates toward their fundamental values (61%). “Moreover, speculation is viewed as enhancing market liquidity by 81% and improving market efficiency by 74%” (Y.W. Cheung, M. D. Chinn, 2000, p 15). The increased volatility can be explained by speculators building up and reversing profitable trading positions. Speculators can be seen as improving market efficiency because they are perceived as forcing the currency value to change until it reaches its “fundamental value”. And liquidity

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<sup>2</sup> Bandwagon effects come from herd behavior. Each investor is following the actions of others for no reason other than the fact that others are doing it. It creates a new market trend that everybody follows. The interpretation of news together with speculation is at the origin of the phenomenon. It can lead to market prices totally disconnected with economic reality as long as a majority of investors believe in it. Keynes was the first to analyze this phenomenon.

<sup>3</sup> The technical analysis is based on the principle that the observation of past data is a good base for predicting future movements. It tries to establish trends and oscillations around the trend. It uses the chartist analysis and the statistical analysis. Its weakness is that any unpredicted event makes past data irrelevant.

<sup>4</sup> Economic fundamentals comprise a wide range of parameters like interest rates, inflation, the growth rate, the rate of unemployment, the balance of payments, etc. of the major countries. Their interpretation varies according to the socio-political and economic context, the hegemonic ideology and the last fad in neoliberal economic theory.

<sup>5</sup> As we shall see, 6 months is a significant period for firms engaged in international trade or for multinational firms because it can impact their profit published each quarter on the stock exchange.

is apparently increased because the bandwagon effect will attract more dealers to enter the market to trade for the purpose of speculation. Overall, it seems that in the US market, speculation drives foreign exchange rates away from their fundamental values within 6 months, but then brings them back toward their fundamental values.

These survey results are consistent with studies based on econometric investigations. For instance according to Shang-Ji Wei and Jungshik Kim (1997), who study the big banks' trading on the foreign exchange markets, "the data reveals that increases in the absolute value of the positions in spot, forward and futures are associated with increases in the subsequent exchange rate volatility, but not the other way around" (p. 9, underline added). These positions are "likely taken, at least in part, to speculate on the level of exchange rate movements" (p 9).

Other studies<sup>6</sup> found that under 3 months, speculation and bandwagon effects are destabilizing: "An upward blip will generate expectation of further appreciation, leading to buy orders, and thereby contributing to the upward trend" (J. Frankel 1996, p 54). But on a longer horizon, 3 months to one year, there is a twist in expectations. A one percent appreciation generates an expectation of 0.08% depreciation over the coming three months and an expectation of 0.33% over the coming 12 months (J. Frankel 1996, p 54).

So speculation is destabilizing at the short horizon and stabilizing at the medium horizon (between 3 to 6 months). We shall see how these facts fit perfectly well with a theoretical explanation of liquidity, volatility and periods of tranquility of financial markets based on Keynesian conventions. But for the moment, two additional observations are necessary.

First, the results of the destabilizing/stabilizing role of speculation are very dependent on the location of the market. It is probable that in developing countries subject to more frequent and severe crisis, the perception that speculation is stabilizing at the medium term may be less established.

Even in a country like Australia, the results are different. In a recent survey (T. Hutcheson, 2000) "... respondents do not unanimously support speculation as a stabilizing force with 55.6% indicating that speculation mainly moves exchange rates toward their fundamental values and 44.4% indicate that it moves them away." (p. 18). This could be due to the occurrence of several speculative episodes

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<sup>6</sup> Frankel and Froot, 1987, 1990; Frankel and Ito, 1989; Chinn and Frankel, 1994.

since the 1970s and especially the destabilizing impact of hedge funds on the Australian dollar in mid 1998 (p 19).

Second, “economic fundamentals” can mean a whole set of different things, far distant from the notion of economic equilibrium. In the neoclassical text books, Purchasing Power Parity (PPP) is deemed to represent the foreign exchange equilibrium in the long run.<sup>7</sup> But the survey shows that only 44.3% of the dealers thought PPP could be used to gauge or predict exchange rate movements over the long run. Less than 27% would sell the US dollar if a PPP-based calculation showed it to be overvalued and 65% would do nothing (Y.W. Cheung, M. D. Chinn, I. W. Marsh, 2000, p 10). Traders, who jointly determine the exchange rate, do not act so as to restore equilibrium but “fundamental values” which are quite different in terms of financial stability.

### ***What is the importance of major speculative attacks?***

According to Aart Kray (1999) there have been 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, 105 succeeded, leading to a depreciation of the exchange rate of more than 10% in a month, while 203 failed.<sup>8</sup> 308 episodes in 39 years make an average of 8 major speculative attacks per year, 3 of them being a “success” and 5 a failure. But in both cases, the damage is done. The country will increase its interest rate to skyrocketing levels provoking a recession with its dramatic consequences on employment and welfare. And generally, this sacrifice is useless because interest rates increases are not sufficient to dampen speculation and capital flight.

So there is a case for a permanent preventive protection that would be efficient against ordinary speculation and speculative attacks avoiding excessive interest rate increases, and even allowing interest

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<sup>7</sup> The Purchasing Power Parity (PPP) theory asserts that, in the long run (3 to 6 years) the exchange rate between two currencies should move toward the rate that equalizes the price of identical baskets of goods in each country. It is difficult to establish a basket of goods of reference, because consumers’ taste are different from one country to another, the *Economist* magazine has popularized the PPP by calculating a “Big Mac” exchange rate index each year. The flaw of the PPP theory is that there is no reason why the same good should have the same price because of imperfect competition at the world level.

<sup>8</sup> Speculative attacks are defined in a restrictive sense. In the 12 previous months, the fluctuation of the exchange rate must not have exceeded 2.5% on average, in order to be sure to identify “pure” speculative attacks. Also, when two attacks occur in one year, only one is registered in order to avoid double accounting.

rate decrease in periods of tranquility. In a context of financial globalization, the CTT can be an appropriate shield against the danger of free capital movements. In a period of crisis, it could be completed, if necessary, by other capital controls measures.

### **How does the CTT work?**

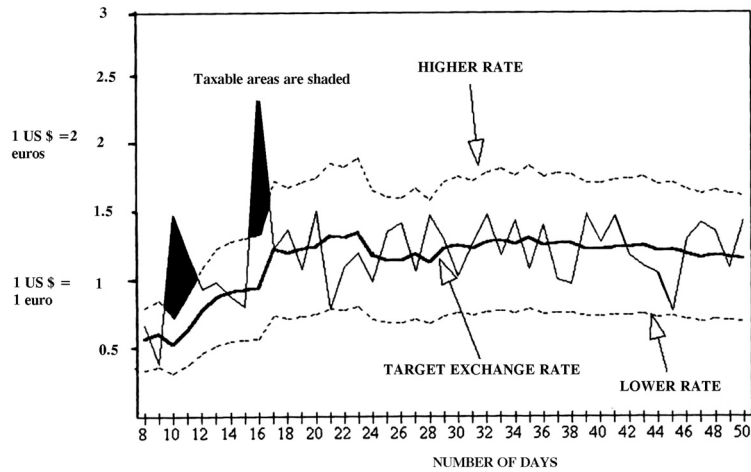
The basic principle is the following: as long as the daily fluctuations of the exchange rate remain small a small tax is applied to the currency transaction. If the daily fluctuations go beyond a predetermined threshold a surcharge is applied. The following chart illustrates how it works. Let's consider the US dollar against the euro market. The foreign exchange rate between the two currencies fluctuates everyday as it is shown. It is possible to calculate the average on the last 20 days, 30 days, or on even longer spans. As the foreign exchange fluctuates every day, the average will change in accordance (hence the name "moving average"). From then it is possible to determine each day an upper limit of approximately 2.5% above the average and a lower limit of 2.5% under the average that creates a band of fluctuations of 5%. As long as the exchange rate determined by the market stays inside the band, a small "normal" tax is applied on each transaction.

What would be the level of the ordinary tax rate and who should pay the tax?

Paul Bernd Sphan advocates a very small tax from 0.005% up to 0.01%. This is because banks are the only economic agents making transactions on the gross foreign exchange markets. For this reason, they should pay the tax. Since the transaction fee they charge for an interbank transaction on the Euro-Dollar market (the bigger one) is on average 0.01%, the tax should not exceed this amount and should probably be lower.

I support a higher ordinary tax of 0.1% because it is the transaction fee charged by banks to their large customers such as multinational firms, insurance companies, mutual, pension and hedge funds. Speculators are not an easily identifiable group of villains. Since the banks and their customers are all speculators the ordinary tax should be paid by all of them. Only small firms and households should be exempted from the tax if their transactions do not exceed a certain amount.

ILLUSTRATION OF THE WORKING OF THE EXCHANGE SURCHARGE



SOURCE: "ON THE FEASIBILITY OF A TAX ON FOREIGN EXCHANGE TRANSACTIONS". PAUL BERND SPAHN, (2002), pspahn@wiwi.uni-frankfurt.de

### *What would be the purpose of the “normal” tax?*

The “normal” tax has a fiscal function. According to my own calculations, a 0.1% tax would generate annual revenues of US \$116 billions per year.<sup>9</sup> That compares with the extra US \$80 billions needed each year for financing the millennium development goals, and the US \$30 billions needed for financing global public goods.

The ordinary tax would also smooth the daily fluctuations of the foreign exchange rate. As we have seen, most of the transactions are not justified by customer orders but by news that fuel speculation and bandwagon effects. “This has the following consequence: a rise in price generates a larger rise in expected price; leading to increased demand now in anticipation of higher future prices, thereby exacerbating the rise in price. This phenomenon of destabilizing speculation can be observed at short term horizons, a few hours up to 3 months to 6 months, according to empirical surveys of the foreign exchange markets ”(J. Frankel, 1996).<sup>10</sup> After the 3 to 6 months

<sup>9</sup> Under the following conditions: Transactions costs are 0.1% (those charged to customers), the volume elasticity is  $-0.5$ , fiscal evasion is 20% of the market, and 10% is deducted for official transactions which are exempted. The annual volume of the market is US \$321.5 trillions in 2001 according to the BIS. For further details, see B. Jetin (2002), chapter 2.

<sup>10</sup> For empirical surveys, see J. Frankel and K.A. Froot, 1987, 1990; K.A. Froot and T. Ito, 1989, M. Chinn and J. Frankel, 1994, Y.-Wong Cheung, M. D. Chinn, I. W. Marsh, (2000).



periods, there is a switch in traders' anticipations. Traders expect a depreciation in the coming months toward a "fundamental value" in the very broad sense.<sup>11</sup> The CTT is expected to work in the following manner: "a rise in the exchange rate above its "norms" would not lead agents to expect further rises (...) because they would see the tax as operating as a disincentive to the market activity necessary to produce such a rise" (P. Arestis, M. Sawyer, 1997, p 760, see also J. Frankel, 1996, pp 54-59). Short-term speculators would be affected by the tax but not long-term investors who would benefit from stability. This is exactly the objective pursued by J.M. Keynes and J. Tobin. The CTT can be seen as an "uncertainty-reducing-institution" (P. Arestis and M. Sawyer, 1997, p 760) stemming destabilization through its effect on agents' expectations. In this sense it has the same advantage as prudential regulations advocated by R. Dodd (2002).

But if the "normal" tax proves insufficient because speculators bet on big profits in the coming three or four weeks, and not on small profits coming from intraday fluctuations between the Euro and the US dollar each day of the year, then a surcharge will be automatically applied. This occurs when the daily foreign exchange rate reaches the upper or lower limit of the band. The surcharge (50%, 100%, or more) will be calculated on the difference between the exchange rate outside the band (for example \$1 = 2.4 euros on the 16<sup>th</sup> day on the chart) and the upper limit of the exchange rate (around 1.3 euros for \$1 on the chart) multiplied by the amount of money traded this day by the speculator. Speculation is defined precisely as trading outside the band and the objective of the surcharge is to penalize it with a punitive tax that will cut the speculative profit. If the mechanism is announced in advance it should discourage speculators and if not, it will punish them until they trade inside the band. The punitive rate can lead to a temporary closing of the foreign exchange market similar to the way the circuit breakers enforce on the US stock exchanges. Since 1989, computers are automatically disconnected whenever the share prices move up or down by more than 10%. It avoids a crack and gives time for economic agents to change their mind. But the difference with the stock exchange circuit breakers is that speculators on the foreign exchange markets who trade outside the band have to pay a prohibitive tax.

The CTT could be implemented by the US alone if they wanted to, or by a significant group of countries like the European Union (EU), or

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<sup>11</sup> As we have already said, fundamental values and equilibrium are two different things. This leaves room for a Keynesian interpretation where the "fundamental value" is nothing else than what average opinion believes what average opinion to be.

regional unions of developing countries like the Mercosur, or a possible Asian monetary union. The major interest is to give back the necessary autonomy to national economic and social policies that existed during the Bretton Woods era.

## **Some Responses to the Criticisms**

***One frequent criticism is that the CTT is too high during “normal” times and too low in case of a major speculative attack.***

This criticism is right as far as the original “Tobin tax” is concerned, because there was only one small tax for any kind of speculation. The two-tier CTT was designed precisely by P.B. Spahn to address this criticism.

We have already explained how a prohibitive surcharge can be the appropriate answer to speculative attacks expecting big profit in a short period of time. We will return to this question below to show that the surcharge can also contribute to dampen capital flight. Here we will focus on the accusation that the ordinary tax is too high during periods of financial tranquility.

The “ordinary tax” is considered too high by some, for example, in 2001 58.7% of the transactions occurred between dealers and these transactions were critical in maintaining market liquidity. According to the “hot potato principle”, when a dealer receives a certain amount of a currency from a customer, he does not necessarily need it and holding it is costly and risky. He will try to sell the full amount or part of it directly to another customer or to another dealer who will sell it again to another for the same reason and so on. It is estimated that the chain involves 4 to 5 dealers until a final customer is found. These transactions are now made with a nearly zero transaction cost thanks to computers. This is the way liquidity is created and risk fractioned and disseminated through the market. In this ideal world, the ordinary tax will destroy the market because it will prevent the dealers from selling the currencies they receive to other dealers.

First, it is important to remember that during the seventies or eighties, transactions costs between dealers were much higher (0.5% to 1%) and it was not an obstacle to transactions. So, one should not overemphasize this argument.

Second, P.B. Spahn’s original proposal is a nearly zero rate (half a basis point or 0.005%) precisely to preserve market liquidity when the tax is borne by traders while at the same time eliminating some of the destabilizing noise trading. A higher tax of 0.1% (10 basis points)

would not cause the foretold chaos. Part of the tax would be shifted to final customers, which now accounts for 41.3% of the transactions (against 30.4% in 1992). Competition between banks will decide more precisely how much will be borne by dealers (mostly big banks) and how much by their final customers (other financial institutions and non financial institutions). But in any case, remember that the rate of the ordinary tax is a purely empirical question. If, by experience, it appears too high, then it can be lowered. If it appears too low, it can be increased.

Thus, interdealer transactions will still be possible. It is only when dealers will speculate on their own account that they will have to pay the full amount of the tax.

Third, the way the foreign exchange market works is changing. The description made by R. Dodd (2003, see his chapter in this volume) does not take into account the decline of interdealer transactions from 69.6% in 1992 to 58.7% in 2001.<sup>12</sup>

One reason for this decline is due to the consolidation process in the banking industry from 3,087 reporting banks for the 1998 BIS survey from 43 countries to 2,772 in 48 countries for the 2001 BIS survey and the growing share of electronic broking in the spot interbank market. So the “hot potato chain” is shortening spontaneously and no one has cried wolf for fear of reduced liquidity.

A second reason for the decline is the progress of electronic trading. According to G. Galati and K. Tsatsaronis (2001), in 2000 85%-95% of interbank trading in the major currencies was said to be conducted using electronic brokers, compared to about 50% in 1998 and 20%-30% in 1995. Before electronic brokerage, dealers tended to execute small trades regularly throughout the trading session to gather information about the current price and be continuously informed. “In 2001, any dealing room with an EBS terminal instantly knows the current dollar price of the euro and yen, certainly for trades of the size typically dealt through EBS”<sup>13</sup> (A. Chaboud, S. Weinberg, 2003). This means that the decrease in volume implied by the CTT won’t alter the price discovery process, because this one has already changed by itself through the implementation of technical progress.

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<sup>12</sup> During the same period, the transactions made between dealers and other financial customers increased from 12.5% in 1992 to 28% 2001, which reflects the increasing role of asset managers, while transactions with non-financial customers declined from 17.6% (according to the final data of the 2001 BIS triennial study of the foreign exchange market).

<sup>13</sup> Electronic Broking Service (EBS) is an electronic broker formed by a large group of dealing banks in 1993. It covers mostly trades in the dollar, euro, yen and Swiss franc. The other electronic broker, Reuters covers mostly transactions involving sterling.

As a consequence, trading is moving from bilateral over the counter (OTC) relationship towards a market place with more centralized price discovery and transparency (BIS, CGFS, 2001, p 1). So far, these trends have only affected the interdealer market (banks and brokers) and not much the dealer-to-customer market. But this could change. Electronic trading makes it technically feasible for the market structure to move to a centralized order book where final customers can transact directly with each other. Trading platforms<sup>14</sup> have appeared on the dealer-to-customer market. Banks are resisting this trend because they have a vested interest in the current segmented market but the balance of power seems to be shifting in favor of final customers. We are seeing a move from single- to multiple-dealers sites where dealers are put in more direct competition with each other for customer business. “Some market participants noted it is a matter of time before trading in these products (foreign exchange and sovereign bonds) takes place on a platform to which dealers and end-users have equal access” (BIS, CGFS, 2001, p 15). If so, a centralized customer-driven market could expand at the expense of the present decentralized dealer-drive market. The foreign exchange market would become closer to a stock exchange and the provision of liquidity by customers through limit order books would substitute for the current interdealer mechanism of risk-sharing. The “hot potato chain” would be shortened even more allowing customers to get into contact more directly, although dealers would not disappear totally.

The CTT would accelerate this trend because each participant would want to reduce the number of transactions in order to reduce the times they pay the tax (J. Frankel, 1996, p 66).

Would a much more centralized market be for the better or for the worse? It is difficult to answer this question because the theoretical literature is inconclusive. One may say that a lower number of dealers especially market-makers will reduce liquidity especially in times of stress. “However it is not so obvious from previous examples of market turbulence that market-makers did provide liquidity when it was required. There have been cases in various volatile markets where market-makers simply stopped answering their phones. Ultimate liquidity may be provided by those end-users able to take a long-term view because they are neither leveraged nor subject to daily marking to

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<sup>14</sup> A trading platform is an infrastructure or mechanism aimed at facilitating securities or foreign exchanges transactions between those who wish to buy and sell. A trading platform could be a legal entity recognized as an exchange or an integrated part of a stock exchange.

market” (BIS, CGFS, 2001, p 20). The CTT has exactly this objective of increasing the weight of long-term horizons propitious to stability.

***The CTT will reduce market liquidity and reinforce volatility***

Whatever the tax rate and whoever pays it, there will be a reduction of the number of transactions and liquidity will shrink. Since liquidity is necessary to stability, the tax will increase volatility.

To respond to this seemingly simple criticism, one has to define more precisely, if possible, what is liquidity. There are two interlinked but distinct aspects in liquidity. The first is what I would call the “technical liquidity” and the second the “economical liquidity”.

The “technical liquidity” can be defined by the depth, the tightness and the resilience of the market, as analyzed by the Bank of International Settlement (BIS). “Depth denotes either the volume of trades possible without affecting prevailing market prices, or either the amount of orders on the order-books of market-makers at a given time”. Tightness is a measure of liquidity derived from the bid-ask spread (difference between buying and selling quotes). “Resiliency refers to the speed with which price fluctuations resulting from trades are dissipated, or the speed with which imbalances in order flows are adjusted”. (BIS, 1999, p 5).

A fine tuned CTT would not reduce the depth of the market, i.e. its capacity to absorb large trades. It would increase the bid-ask spread because the difference between buying and selling prices includes all transaction costs and the tax will increase them. But the major component of the bid-ask spread is the risk premium that reflects the uncertainty of the market usually measured by volatility. As long as the tax will reduce volatility, it will reduce the risk premium. So, overall there must be compensation. For the same reason, resilience should be improved because the pre-announced automatic two-tier mechanism will reinforce market capacity to return to normal conditions. So the “technical liquidity” should be preserved.

The “economical liquidity” refers to economic factors that affect liquidity. Most of the studies cause confusion between volume (depth) and liquidity, and pretend that a very voluminous (liquid) market is a guarantee for stability.

That is simply not true. Peter Martin (2002), the famous *Financial Times* columnist, cannot be suspected of sympathy for anti-globalists, makes a distinction between an “... acceptably liquid market - one in which there is active trading, so you can deal in size without moving the price against you...” and “... super liquid markets that do not bring

extra benefits”. “Indeed, they may produce perverse effects such as a high degree of short-term volatility that makes trading appear more attractive-sucking in more briefly lucky fools. It also encourages the belief that you can always trade your way out of a tricky position”. Super liquidity also leads to large losses for banks.<sup>15</sup> Peter Martin believes that James Tobin’s solution is unlikely to happen. So his remedy to trading losses is very simple although never mentioned: “stop trading”.

I think that Peter Martin’s remedy is right--we must reduce the excessive liquidity--but it is also unlikely to happen spontaneously. Since the decline of their traditional lending activity, currency trading represents up to 50% of bank profits (H. Ramcharran, 2000). Competition pushes them to engage in even more trading to present the most brilliant financial results to their shareholders, and traders are encouraged to speculate by the promise of huge bonuses if a risky position pays off. So, one cannot expect banks to take the initiative to stop speculating and prudential regulations, if necessary, are not sufficient simply because they are violated when they are not binding.<sup>16</sup>

What is in fact the true guarantee for stability is the heterogeneity of beliefs and anticipations. That was precisely J.M. Keynes’ s opinion: “It is interesting that the stability of the system and its sensitiveness to changes in the quantity of money should be so dependent on the existence of a *variety* of opinion about what is uncertain”<sup>17</sup> (J.M. Keynes, chapter 14, 1936).

Heterogeneity ensures that there will always be a buyer and a seller, but there is no linear relation between market volume, (the number of investors and the number of transactions they make), and the diversity of beliefs. Of course, the probability for a seller to always find

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<sup>15</sup> “The \$750 millions losses attributable to John Rusnak, Allied Irish Bank’s alleged rogue trader, are by no means a record. Toshidhide Iguchi, of Daiwa Bank, lost 1.1 billion over 11 years. Robert Citron, Orange County’s Treasurer, lost US \$1.6 billion. Showa Shell Sekiyu, Shell’s Japanese affiliate, lost US \$1.5 billion in the early 1990s”. (P. Martin, 2002).

<sup>16</sup> See the exemplary case of John Rusnak, who was hired as a foreign exchange speculator by AIB, in 1993. In 1994, he had already breached his limits in 1994, then hid his losses by constructing bogus option trades that apparently offset those that were genuine, and was able to manipulate prices fed from Reuters, since they came into Allfirst through his computer. His traded conversations were not even recorded. (*The Economist*, 2002).

<sup>17</sup> And he added: “Best of all that we should know the future. But if not, then, if we are to control the activity of the economic system by changing the quantity of money, it is important that opinions should differ. Thus this method of control is more precarious in the United States, where everyone tends to hold the same opinion at the same time, than in England where differences of opinion are more usual”.

a buyer is low when the market is very thin. Contrary to common sense, beyond a certain threshold, which is probably what I call the “technical liquidity”, the probability that diversity increases becomes small.

This is because usually, when there is one more investor inside the market, it is rational for him to follow the mood. If the market is bearish, he will be a bear. If the market is bullish, he will be a bull. There can be a time lag between the arrival of a new investor on the market and the moment when he follows the trend. The new comer has to discover and learn market reality. But unless he systematically has better information or is risk prone, he will sooner or later follow the trend. Herd behavior models have shown why it is rational and less costly for an individual to follow the decision of a large number of people ahead of him without looking at his own private information (information-based herding). Another type of model is based on the “sharing-the-blame” effect. “Dumb” investment managers will always want to hide and disguise their inability and are therefore likely to imitate the “smart” investment managers and take action in conformity. If everyone gets it wrong at the same time, smart investors have an excuse to conceal their mistakes, by saying that the outcome was unexpected.

In times of market stress, the combination of short-termism, herding behavior and a generalized use of similar risk management techniques could amplify the homogeneity of behaviors and contribute to financial crisis. Variety in opinions disappears when it is most needed, i.e. during the crack. In this circumstance liquidity vanishes, proving how much liquidity is an institutional construction and not a natural feature (A. Orléan, 1999).

In the absence of an international coordination of economic policy, the two-tier CTT cannot work miracles. It would not have stopped the decline of the US dollar and the increase of the euro. But it could have slowed down the process, giving more time for firms to adapt to the new exchange rates, especially for those who cannot hedge against exchange rate fluctuations. As we shall see below, it is not a marginal question.

But, in this new period of uncertainty, the contribution of the CTT could be to prevent excessive fluctuations due to speculation. The re-established relationship between interest rate differentials and exchange rate movements promoted the return of leveraged speculative players to the foreign exchange markets. Macro hedge funds, which were said to have disappeared from the foreign exchange markets during the 1990s, were drawn in as a result of the lackluster performance of stock markets. Hedge funds and other institutional investors were borrowing

funds in countries where interest rates were low to invest them in countries where they were high (the so-called carry trade strategies). At the end of 2000 and throughout 2001, the yen was depreciating against the US dollar while at the same time the short-term interest rate were around 6 to 7% higher in the US vis-à-vis Japan. It was very profitable to borrow in yen and invest in dollars. As a consequence, the yen appreciated sharply in 2002. The same speculative episode had occurred in the fall of 1998 provoking a very strong short-term volatility. In October 1998, the dollar/yen rate decreased from ¥ 133 to ¥ 112 in less than 48 hours. Worse, between 1997-2000, there have been three more main stress events (May 1997, September 1999, and October 1999), i.e. increases of 10% of the yen vis-à-vis the US dollar in one day, when speculators unwound their positions in the US, selling the US dollar and buying yen.

The same carry trade strategy has also been observed on the foreign exchange markets of other industrial countries such as the non-EMU countries, Australia, New Zealand and Canada. According to the BIS (2003, p 87-88) the most striking example is the Norwegian krone. Hedge funds and other institutional investors were borrowing funds in euros and investing them in short-term Norwegian Papers. The krone strengthened 11% against the euro and 29% against the dollar throughout 2002 and peaked in January 2003, forcing the central bank to cut interest rates. Carry trade was also significant for some emerging market currencies like the South African rand, and the Brazilian real.

How can we strengthen the heterogeneity of beliefs and anticipations to favor a relative stability?

The solution is to support the existing convention, which is the true guarantee of the diversity of beliefs. The market will always determine endogenously a convention, based on the interpretation of the fundamentals that investors make at the moment. But the problem is that this convention can be established on a wrong basis, for instance, a false belief in the “new economy”, or the “strong dollar politics” or “huge twin deficits”. This is why it is preferable for the State to try to establish the appropriate convention through a sound and credible economic policy. J. M. Keynes considered this possibility when he explains how the State can lower the long-term interest rate step by step.<sup>18</sup>

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<sup>18</sup> Like equity prices or the foreign exchange rate, the long-term interest rate is defined by J.M. Keynes as a “highly conventional phenomenon” (see chapter 15).



*“Such comfort as we can fairly take from more encouraging reflections must be drawn from the hope that, precisely because the convention is not rooted in secure knowledge, it will not be always unduly resistant to a modest measure of persistence and consistency of purpose by the monetary authority. Public opinion can be fairly rapidly accustomed to a modest fall in the rate of interest and the conventional expectation of the future may be modified accordingly; thus preparing the way for a further movement — up to a point. The fall in the long-term rate of interest in Great Britain after her departure from the gold standard provides an interesting example of this; — the major movements were effected by a series of discontinuous jumps, as the liquidity function of the public, having become accustomed to each successive reduction, became ready to respond to some new incentive in the news or in the policy of the authorities”. (J.M. KEYNES, 1936, chapter 15, section 2).*

These lines were written in the 1930s, when it was still possible for the state to define the appropriate national economic policy without the fear of capital flight. Now that governments have decided to give capital the full liberty to travel from one country to another, it is no longer credible to contemplate a progressive economic policy that would be only based on a patient and gradual endeavor to convince investors to adopt the desired interest rate or foreign exchange rate. The only economic policy that markets are spontaneously ready to accept is the neoliberal one. So if we want a progressive economic policy to be adopted, say a full employment policy with the adequate interest rate, free movements of capital must be restricted, and there must be a strong commitment by the State to enforce its policy. If this policy is a good one, for instance, full employment creates a self-sustained growth process, then it will turn into a credible norm, or in other terms what I call a “good” convention.

The two-tier CTT can be an efficient institutional support for such a “good” convention once established by the State. It will convince investors that the daily fluctuations of the exchange rate will stay inside the normal limits tolerated by the convention and protected by the CTT. To paraphrase J.M. Keynes, *any* level of a conventional price (the rate of interest, the foreign exchange rate, or even the anticipated profit) which is accepted with sufficient conviction as *likely* to be durable will

be durable.<sup>19</sup> To conclude on this point, we can say that the CTT can extend the life of conventions.

***Is foreign exchange market volatility only important for developing countries or does it also concern developed countries like the US?***

One may think that fluctuations between major currencies are not important because short-term volatility is limited and speculative attacks are rare. A second reason is that the impact of exchange-rate fluctuations on domestic inflation is sometimes weak.<sup>20</sup> A third reason is the difficulty in identifying a large and negative effect of exchange rate volatility on trade. And finally, firms are supposed to hedge against foreign exchange rate volatility by buying foreign exchange derivatives.

There is no consensus to date among economists on how exchange-rate volatility influences trade volume from either a theoretical or an empirical perspective. But most of these studies with mixed results have focused on developed countries while developing countries received little attention.

However, it appears that for developing countries exchange rate volatility is a concern. For instance, K. Doroodian (1999) found that exchange rate volatility has a negative and significant effect on trade flows in the case of India, South Korea and Malaysia. Another recent study shows that "... the rise in exchange rate volatility had adverse consequences on both exports and imports of Thailand with the Japanese market, and the imports of Thailand from the US during the period of two decades before the break of the 1997 East Asian financial crisis" (T. Rahmatsyah et al., 2002). However less conclusive evidence was found for Thailand's exports to the US market.

To alleviate these adverse consequences on trade, developing countries cannot rely on hedging instruments. These instruments are not available in the less developed countries, and when they are available, their use is limited because of the high-risk premium associated with them due to persistently high domestic interest rate and very thin markets. As a consequence, most developing countries are exposed to currency risk and forced to peg their currency to the US dollar, and, less frequently, to the euro.

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<sup>19</sup> "Any level of interest which is accepted with sufficient conviction as *likely* to be durable will be durable" (J.M. Keynes, 1936, chapter 15).

<sup>20</sup> The academic literature calls this impact the "pass-through" effect. Exchange rate "pass-through" denotes the impact of a change in the exchange rate between exporting and importing countries on local-currency prices of imports.

Does it mean that developed countries are immune to foreign exchange-rate volatility?

The answer is negative. Exchange rate fluctuations between the euro, the US dollar and the yen are not so negligible. In the US and the United Kingdom, exchange rate changes are not fully passed through to domestic goods prices and have little effect on the behavior of final purchasers.<sup>21</sup> But if the decrease of the US dollar raises the cost of an imported good, without the possibility of the importer to increase the price in the same proportion on the US market, its profit shrinks.<sup>22</sup> This profit risk can be hedged using appropriate financial instruments, but these hedging instruments provided by their sophisticated financial markets are not a panacea.

Let's hear what the professionals from the banking and corporate world have to say.

According to Merrill Lynch & Co Chief Economist, "the decline in the euro cut Standard & Poor's 500 companies' profit by at least 3% in the third quarter of 2000, which compares to a negligible impact of 0% to 1% a year over the previous two years".

The consequence is the following: "As the euro dropped in value, hedging programs grew increasingly expensive; heightened volatility sent the cost of options and forward contracts skyrocketing". Many firms decided to remain unhedged (S. Mc Murray, 2000).

Business Week (2000) draws the same picture. "Each quarter, US corporations must tally their foreign revenues and earnings and then translate them into dollars. So if a company earns 1 million euros, but the euro's value drops from \$1 per euro to 90 cents, they would be worth only \$900,000, not \$1 million. An option to sell euros at \$1 each would avert the loss. But hedging isn't cheap. According to Goldman, Sachs & Co., hedging \$500 million worth of earnings cost about \$26 million".

This may explain why few US firms are hedged and why they don't hedge 100%.

According to a recent survey (G. Bodnar, R. C. Marston, 1998), only 50% of US firms report using derivatives. The use of derivatives is

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<sup>21</sup> J.M. Campa and L. S. Goldberg (2002) show that the US has among the lowest pass-through rates in the OECD, at about 25% in the short run and 40% in the longer run. It means that a 1% dollar depreciation would translate in a 0.25% increase in import prices. But the average for the OECD countries is much higher, 60% over one quarter and about 75% over the long term. For Germany these figures are respectively 60% and 80%, and for Japan, 0.88% and 1.26%. What's more, countries with more nominal exchange rate volatility have higher pass-through rates.

<sup>22</sup> The responsiveness of profits to changes in exchange rates is called the "exposure" in the academic literature.

much higher among large firms (83%) than among small firms (12%). This shows that small and medium US firms cannot avoid the adverse effect of exchange rate volatility on their profit to the contrary of big and often multinational firms. These multinational firms have also the possibility to hedge by arranging anticipated currencies purchase or sell between their subsidiaries (the so called “natural hedging”).

Among firms with significant foreign exchange exposure that regularly hedge, partial hedging is the normal practice. Less important exposures are hedged less than 25% and the three more important exposures are hedged less than 50%. Hedging instruments are often available only for short horizons. 82% of firms utilize foreign currency derivatives with an original maturity of 90 days or less.

Even mutual funds and other institutional investors, which manage a large proportion of U.S. foreign equity investments don’t hedge a lot. Levich et al. (1999) surveyed 298 U.S. institutional investors and found that more than 20% were not even permitted to hold derivative contracts in their investment portfolio. A further 25% of institutional investors were formally unconstrained, but did not trade in derivatives. The remaining 55% hedged only a minor proportion of their foreign exchange exposure.

To summarize, exposure to foreign exchange risk is not negligible even for US firms and financial instruments are not a sufficient protection.

## **CTT is Good Policy and Good Politics**

*The CTT will be confronted by an immense opposition. It is smarter to fight battles we can surely win. Easily attainable reforms are preferable.*<sup>23</sup>

Yes, the CTT will meet a formidable resistance organized by those who have much to lose. The opponents of the CTT are richer and more powerful. But isn’t it true for the great majority of reforms we would like to be adopted? Do we always renounce for this reason? If we restrict our ambitions to what can be easily achieved, then the scope of our ambitions will narrow even more because our opponents are reducing every day what is politically reasonable to achieve in a neoliberal world.

For example, we can all agree that it would be a good complementary measure to increase the capital gain tax as proposed by

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<sup>23</sup> See R. Dodd 2003, in this issue.

R. Dodd. But is it still reasonable after the tax cut program of the Bush administration?

Capital controls are needed when every other preventive measure has proven insufficient to stop the build up of a financial crisis and the associated capital flight. But again, can we seriously think that the opposition to capital controls will not be immense?

Even if no decisive progress has been made in favor of the CTT, some significant progress has been achieved. The French Parliament has passed a law in December 2001, in favor of the CTT. The law says that the CTT will be implemented as soon as the other EU countries will adopt it. The Belgium Parliament is on the verge to adopt a two-tier CTT, in the same conditions as France. The Italian Parliament will have to discuss a bill after ATTAC Italy gathered 30,000 citizens' signatures on a petition in favor of the CTT. In February 2003, the Indian Prime Minister, Atal Behari Vajpayee, called for a tax on international currency transactions to protect the world's developing economies. "I believe this (levy) is a reform whose time has come," he said on the eve of the 114-nation Non-Aligned Movement (NAM) summit in Malaysia. "It combines in one effective measure an instrument to protect weak economies from the volatility of capital, to enhance investor confidence through stability of capital markets and to generate valuable developmental resources". These are only first steps and we still have a long way to go. But it shows that there is political support for the CTT.

An international treaty should establish the CTT. The more global the better. But it does not mean that it should be global right from the start. A group of countries, probably located in the same continent, could take the initiative. It could be the EU because it has the same economic weight as the US and because around 50% of the foreign exchange markets are located there (UK and Switzerland included). Developing countries from Africa, Latin America (Brazil) and Asia could join in.

***If the tax were imposed in only one part of the world, it would be an incentive to relocate trading into untaxed countries, in particular in off shore tax havens that serve as a conduit for terrorist financing.***<sup>24</sup>

There is a solution to the problem of relocation and off shore tax havens.

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<sup>24</sup> See R. Dodd 2003, in this issue.

First. If tax havens are so attractive, why is the vast majority of the financial system of the world still located in a few developed countries plus Singapore and Hong-Kong?

Because geography still matters. Financial centers are natural monopolies (e.g. London and the Greenwich meridian). And they need external economies: infrastructures, lawyers, traders, computer engineers, and even economists. All these well paid people need a nice place to live in and spend their money.<sup>25</sup> And, finally, because all major financial centers need to be in the proximity of political centers of power.

If it was only a matter of transaction costs, and of costs in general, why is London, one of the most expensive cities of the world, one of the major financial centers?

Second. Currencies can be transacted everywhere, even in offshore tax havens or untaxed countries in general. When a transaction in US dollars is settled, US dollars will be transferred from one bank established in the US to another bank established in the US even if the trade was negotiated in Singapore. If US banks go the Cayman Islands, the US dollar they transact will stay in the US. They won't be settled in the Cayman Island but in the US through the use of correspondent banks.<sup>26</sup> These correspondent banks will transfer the dollars in the US through CHIPS the most important private clearinghouse<sup>27</sup> in the US, and FEDWIRE, the official Real Gross Time Settlement System (RTGS),<sup>28</sup> which provides a totally secure environment for the transfer of huge amounts of cash.

According to an official report (C. Levin, 2001), the correspondent banks are the "vital blood" of offshore paradise. Banks in offshore paradise are empty shells. They don't have the necessary competencies and infrastructure. Without their linkage with their correspondent banks

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<sup>25</sup> The government of Singapore has recently announced that it would allow discotheques to stay open late at night in order to attract more foreign investments.

<sup>26</sup> Correspondent banking is "an arrangement under which one bank provides payment services and other services to another bank", usually across international boundaries. (ECB, bluebook, 2001).

<sup>27</sup> A clearinghouse is a "department of an exchange or a separate legal entity which provides a range of services related to the clearing and settlement of transactions and payments and to the management of risks associated with the resulting contract. In many cases, the clearing house acts as the central counterparty". (ECB Bluebook, June 2001).

<sup>28</sup> An approved Real-Time Gross Settlement System is a system in which processing and settlement with finality takes place continuously in real time across Central Bank accounts. It is called Fedwire in the US and Target in the EU.

in the US, in Europe, etc., they cannot get access to the vast legal financial systems of these countries.

More important, countries have the right to cut off the access to their national financial system. In the US, this regulation exists:

“To enforce these regulations, the Federal Reserve reserves the right to prohibit the use of the Federal Reserve payment services to support fund transfers that are used to settle, directly or indirectly, obligations on large-dollar multilateral netting systems that do not meet the Lamfalussy Minimum Standards.... No future or existing privately operated large-dollar multilateral netting system will be permitted to settle on the books of a Federal Reserve Bank unless its participants authorizes the system to provide position data to the Reserve Bank on order” (Federal Reserve, 1994).<sup>29</sup>

The UK has the same regulation. These threats were decisive for the adoption of the Basle Accord.

The Kerry Amendment to 1988 Anti-Drug abuse empowered the US government to cut foreigners off from the access to the US financial system, including its clearing system, if their government refused to reach specific anti-money laundering agreements with the US treasury. (Eric Heillener, 2000).

All these regulations could be used to enforce the CTT if it was part of the financial and banking rules and regulations.

It is exactly at the settlement point that the bulk of foreign exchange transactions will be taxed, when they are netted through CHIPS or when they enter the Real Gross Time Settlement System.

As for the possibility that clearinghouses could be relocated in tax havens, (see R. Dodd, 2003), it is simply unbelievable. Not only these clearinghouses need very huge investments in computer systems and telecommunication infrastructures, but, more important, they need the juridical security and the financial backing provided by the central banks of the country where they are located. An American bank will accept to transfer US \$20 millions on the US territory because it knows that if necessary the FED will act as a lender of last resort. The Cayman Islands' central bank cannot be a credible lender of last resort for that matter.

Is it by accident that CLS,<sup>30</sup> the new international clearinghouse that settles the great majority of foreign exchange trade throughout the world is located in London and New York?

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<sup>29</sup> Quoted by R. Schmidt, 2001.

<sup>30</sup> CLS stands for Continuous Link Settlement. CLS was funded by 66 major international banks in 16 countries and seven central banks, including the Federal Reserve. Since September 2002, it provides for a simultaneous exchange of the

As for derivatives, those that are traded on a clearinghouse can be easily taxed. OTC derivatives products, which are not settled, will be taxed at the point of negotiation. The progress in straight-through-processing will make it easier. For those OTC that are processed manually, the master agreement leaves a trace that the fiscal authorities can check. Trading through telephone is also taped and therefore leaves a trace. This does not mean that fiscal authorities will check every transaction. Not only would it be unfeasible but also unnecessary. How many banks would risk their reputation and relationship with their government to avoid an ordinary small tax?

In summary, there are no major technical problems to collect the CTT and it is even easier for STETS because equities are traded on stocks exchanges and usually settled by the same firms that managed the transactions.

## **Conclusion**

In this paper, we have tried to demonstrate that the CTT can be a useful instrument against speculation. It could also dampen capital flight and therefore contribute to the prevention of financial crisis together with more comprehensive capital controls measures. It could stimulate economic cooperation at the regional level and therefore be a major step toward a new “developmentalist financial architecture” (I. Grabel, 2003b). It could also be useful to developed countries like the US and the EU and finally, it could generate huge revenues for financing development, universal access to social services, and global public goods.

For these reasons, it is worth supporting the CTT and other global taxes.

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currencies in each foreign exchange contract to eliminate settlement risk. CLS Bank is based in New York. It is a special purpose bank supervised by the Federal Reserve.



## References

- Arestis P. and M. Sawyer (1997) "How many cheers for the Tobin transaction tax?" *Cambridge Journal of Economics*, 1997, 21, p 751-768.
- Bibow J., P. Lewis and J. Runde (2001) "Uncertainty, conventional behavior, and economic sociology. Jerome Levy Institute, Working Paper No. 339 (September). [www.levy.org/docs/wrkpap/papers/339.html](http://www.levy.org/docs/wrkpap/papers/339.html)
- Bank for International Settlements (BIS) (1999) "Market liquidity: research findings and selected policy implications". Report of a Study Group Established by the Committee on the Global Financial System of the Central Banks of the Group of Ten Countries. Basle (May).
- BIS (2001a) 73<sup>rd</sup> Annual Report, Chapter V. Foreign exchange markets, pp. 87-107, Basle.
- BIS (2001b) "The implications of electronic trading in financial markets". Committee on the Global Financial System, BIS, Basle.
- Bodnar G., and R.C. Marston (1998) "1998 Survey of financial risk management by U.S. non-financial firms". Wharton/CIBC World Markets.
- Brooks R., K. Forbes, J. Imbs and A. Mody (2003) "Synchronized?" *Finance and Development* (June). [www.Imf.org/fandd](http://www.Imf.org/fandd)
- Business Week (2000) "Business won't hedge the Euro away" (December 4).
- Chaboud A. and S. Weinberg (2003) "Foreign exchange markets in the 1990s: Intraday market volatility and the growth of electronic trading". BIS Papers No. 12.
- Cheung Y., M.D. Chinn, and I. Marsh (2000) "How do UK-based foreign exchange dealers think their markets operates?" NBER Working Paper No 7524.
- Cheung Y. and M.D. Chinn (2000) "Currency traders and Exchange rate dynamics. A survey of the U.S. market." Department of Economics, University of California, Santa Cruz, mimeo.
- Chinn, M.D. and J.A. Frankel (1994) "Patterns in exchange rate forecasts for 25 countries". *Journal of International Economics*, Vol. 36, pp 355-372.
- Dodd R. (2002) "Improving Financial markets: regulatory proposals to dampen disruptions and deter distortions". In "After Neoliberalism: Economic Policies That Work for the Poor". Paper presented at a Conference on "Alternatives to Neoliberalism", May 23-24, 2002, Washington, DC.
- Dodd R. (2003) "Lessons for Tobin tax advocates: the politics of policy and the economics of micro-structure". (In this issue.)
- Doroodian K. (1999) "Does exchange rate volatility deter international trade in developing countries?" *Journal of Asian Economics*, Vol. 10, pp. 465-74.
- The Economist (2002) "Finance and economics: crying wolf; Allfirst's foreign-exchange losses". *The Economist*, London, March 23, Vol. 362, Issue 8265, p 70.

- Felix D. (1999) "Open economy Minsky-Keynes and global financial crisis". Presented at the 9<sup>th</sup> Annual Hyman P. Minsky Conference on Financial Structure, Jerome Levy Economics Institute (April).
- Frankel J.A. (1996) „How well do markets work: Might a Tobin tax help?“ in: *The Tobin Tax: Coping with Financial Volatility*, Haq, M., I. Kaul and I. Grunberg (eds), Oxford University Press, Oxford; pp. 41-81.
- Frankel J.A. and K.A. Froot (1987) "Using survey data to test some standard propositions regarding foreign exchange rate expectations". *American Economic Review*, Vol. 77, pp 133-53.
- Frankel J.A. and K.A. Froot (1990) "Exchange rate forecasting techniques, survey data, and implications for the foreign exchange market", NBER, Working Paper No. 3470.
- Froot K.A. and T. Ito (1989) "On the consistency of short-run and long-run exchange rate expectations". *Journal of the Japanese and International Economies*, Vol. 8, pp. 487-510.
- Galati G. and K. Tsatsaronis (2001) "The impact of the euro on Europe's financial markets". BIS Working Paper, No. 100.
- Gounder R. and K. Sen (2000) "Black market exchange rates and contagion effects: South East Asian economies". Working Paper.
- Grabel I. (2002) "Capital account controls and related measures to avert financial crises" in "*After Neoliberalism. Economic Policies That Work for the Poor*". Paper presented at a Conference on "Alternatives to Neoliberalism", May 23-24, 2002, Washington, DC.
- Grabel I. (2003a) "Currency transaction taxes: a brief assessment of opportunities and limitations". (In this issue.)
- Grabel I. (2003b) "International private capital flows and developing countries", in: "*Rethinking Development Economics*, Ha-Joon Chang (ed.), London: Anthem Press, pp 325-45.
- Grieve Smith J. (2002) "Exchange rate management". In "*After Neoliberalism: Economic Policies That Work for the Poor*". Paper presented at a Conference on "Alternatives to Neoliberalism", May 23-24, 2002, Washington, DC.
- Heillener E. (2000) "The politics of global financial regulation: Lessons from the fight against money laundering". CEPA Working Paper No. 15, April.
- Hutcheson T. (2000) "Trading in the Australian foreign exchange market". Working Paper No. 107, School of Finance and Economics, University of Technology, Sidney.
- Kray A. (2001) "Do high interest rates defend currencies during speculative attacks?" World Bank, Policy Research Working Paper No. 2267.
- Jetin B. (2002) "*La taxe Tobin et la solidarité entre les nations*". ("The Tobin tax and the solidarity between nations"). Editions Descartes et Compagnie, Paris.
- Keynes J.M. (1936) *The general theory of employment, interest and money*. Harvest/Harcourt Brace Jovanovitch, London.

- Levin C. (2001) "Correspondent banking: a gateway to money laundering". Report of the Minority Staff of the Permanent Subcommittee on Investigations, United States Congress.
- Martin P. (2002) "Trading on dangerous ground: the frenzied activity in financial markets arises from a misunderstanding of risk. It is now doing more harm than good". *Financial Times* (February 12).
- Mc Murray S. (2000) "The lost art of hedging". *Institutional Investor*, Vol. 34, No. 12 (December), pp. 63-69. .
- Olivei G.P. (2002) "Exchange rates and the prices of manufacturing products imported into the United States". *New England Economic Review*, pp. 3-18.
- Orléan A. (1989) "Pour une approche cognitive des conventions économiques". *Revue Economique*, Vol 40, No. 2.
- Orléan A. (1999) "Le pouvoir de la finance" (The Power of finance), Odile Jacob, Paris.
- Palley T.I. (2001) "Destabilizing speculation and the case for an international currency transactions tax". *Challenge*, Vol. 44 (May-June), pp. 70-89.
- Rahmatsyah T., G. Rajaguru and R.Y. Siregar, (2002) Exchange-rate volatility, trade and "fixing for life" in Thailand. *Japan and the World Economy*, Vol. 14 pp. 445-70.
- Ramcharran H. (2000) "The sensitivity of foreign exchange trading income to exchange rate changes: a study of large U.S. banks". *Multinational Business Review*.
- Schmidt R., (2001) "Efficient capital controls", *Journal of Economic Studies*. Vol. 28, No.3.
- Shiller R.J. (2001) *Irrational exuberance*. Broadway Books, New York.
- Spahn P.B. (2002) "On the feasibility of a tax on foreign exchange transactions". Report to the Federal Ministry for Economic Cooperation and Development, Bonn.
- Tymoigne E. (2002) "Financial inflation and financial convention". *Oeconomicus* (Winter).
- U.S. Securities and Exchange Commission (1998) "Trading analysis of October 27 and 28, 1997". A Report by the Division of Market Regulation (September).
- Wei S.J. and J. Kim (1997) The big players in the foreign exchange market: do they trade on information or noise?" NBER Working Paper No. 6256.