

Working Paper

Continuous interest rate payments:

Are daily interest rate payments in foreign exchange markets what decimals were for the US brokerage industry?

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American brokers resisted the introduction of decimal pricing, because it improved market transparency and reduced their profit margin. The same is true for the introduction of continuous interest rate payments. Banks resist the introduction of continuous interest rate payments, because it cuts into their profit margin.

Electricity has to be paid by the meter. We take it for granted that electrical utilities install equipment at every household to measure the electricity usage accurately. We would be extremely angry, if the utility company changed its pricing strategy and charged us for 24 hours of electricity usage, if we use electricity say at 8 pm in the evening. This is, however, exactly what happens in our banking system. Software programs in banks screen our accounts at night – depending on the account balance, they then credit or debit interest for a full 24 hours.

In earlier days, when interest rate payments were computed manually, it was obvious that second by second interest rate payments were too cumbersome. Today, in an age of electronic processing, this has changed. It has become technically feasible to make continuous interest rate payments. There is thus no technical obstacle to introduce continuous interest rate payments.

Why should we make all the fuss about introducing continuous interest rate payments? Does it really matter, if interest payments are made on a continuous basis or at discrete 24 hours intervals? In the long run, both computations yield the same result. It is only within a 24 hours interval that the outcome is very different.

For our every day bank account it does not really matter, the amounts involved are so small that it does not have a material impact. Having said this, we are irritated by the fact that banks take advantage of the discreteness of interest rate payments to make an extra buck. Fairness would require continuous interest rate payments.

There is, however, one area of our financial system that is severely affected by the discreteness of interest rate payments. Let me explain. Foreign exchange markets are not talked and written about as much as equity markets, nevertheless they have an equal or even bigger importance on our everyday lives. Only slight disturbances in currency markets backfire and have dramatic impact on our economy.

Foreign exchange markets are fifty times larger in terms of transaction volume than equity markets with a transaction volume in excess of 1.5 trillion USD per day. Shifts in the exchange rate alter the relative competitiveness of the manufacturing and servicing industry and impact the flow of goods. An in and outflow of capital has a big or even greater impact on the exchange rate than the actual trade and service balance of our economy. Even more worrisome, a random exchange rate spike might initiate a move in the flow of capital causing a further slide in the currency. It is thus in everyone's interest to have exchange rate stability.

The issue of discrete interest rate payments is critical for exchange rate stability. Even though the issue is straight forward, it has not been spotted and discussed in public. Over 90 percent of the transaction volume on currency markets is intra-day, where the positions are opened and closed within a few minutes or hours. Only 10 years ago, this was different. At that time, currency trading was done manually and a lower proportion of the trading was done intra-day. With the usage of electronic dealing systems in banks, trading has been automated and the percentage of intra-day trades has increased to a swooping 90 percents.

With discrete 24 hours interest rate payments, the 90 percent transaction volume of intra-day trading does not involve any interest rate payments. Whether a speculator buys or sells a currency, independent of its current rate of interest, he does not pay or receive any interest as long as he closes his position before midnight. This is like receiving a free loan.

Currency markets are open around the clock during week-days and he can thus trade at any time. Currencies as different as the US Dollar, Euro, Japanese Yen, Argentine Peso, South African Rand, Polish Zloty, etc. are thus assumed to be the same intra-day and carry a zero interest rate. This is like pretending that apples and pears as the same. A currency with a high interest has quite a different risk profile to a strong currency paying a low interest. What are the implications?

First, I have to explain the mechanism of trading. In foreign exchange markets, the bulk of trading is speculative. Unlike fundamentally driven trades, where an exporter receives a payment from his counter party in one currency and then converts it to another currency to pay his bills, speculative trading is done differently. The trader so to speak receives a loan in one currency, makes the currency exchange and then earns the money market interest on the currency that he holds.

For inter-day transactions that are kept open over night, the trader pays interest on the currency that he sells and receives interest in the currency that he buys. For a weak currency with high interest rates, the interest rate charge is a penalty or handicap for going short. Vice versa it is a premium for going long the weak currency. In intra-day trading, no interest rate charges are made on open positions, as long as they are closed before midnight. This introduces a systematic bias. It gives traders an incentive to take on speculative short positions in weak currencies.

In today's global economy it is a frequent occurrence that a fickle international investor loses his confidence in one currency and starts to sell. His selling propagates and other market participants start to sell as well initiating a rapid decline of the exchange rate. The central bank, which is responsible for maintaining exchange stability, will attempt to stem the flow by hiking interest rates. Because 90 percent of the transaction volume is intra-day, the interest rate increase will, however, not have an impact. To the contrary, it is a signal for every market participant that the currency is weak. To have an impact, the central bank has to make exceptional interest rate increases, which are disruptive for the economy as a whole.

Because interest payments are made over night, when market participants are asleep and cannot respond to political, economic and market events immediately, the interest rate increases have to be particularly large. This was illustrated in the case of the Turkish exchange rate crisis in February 2001. At the time, interest rates had to rise to 8000 percent before the slide of the currency came to a halt. In the wake of the interest rate increases a large number of banks and other businesses went bankrupt causing a great deal of hardship.

With continuous interest rates it would have sufficed to increase second by second interest rates to a lower level. Intra-day traders would then have propped up the Turkish Lira for a few hours at a time thus stemming the market down trend. Continuous interest rates would mitigate the big swings in exchange and interest rate volatility

Today, central bankers have little freeway. When central bankers have to maintain high rates of interest to keep inflation in check, they risk the undesirable effect of a capital influx driving up the currency. In an environment of continuous interest rate payments, they could substantially lower second by second interest rates to deter a capital inflow. Continuous interest rate payments increases the flexibility of central banks.

In a regular market environment, it might be argued that the impact is not as big. Even though interest rates are not paid intra-day, they shape the expectations of market participants and are thus discounted into the price. This is, however, not correct. Studies of the behavior of currencies have shown that the price risk occurs during opening hours and not over night. Market participants should be rewarded for taking the price risk during daytime, not at night, when the price risk is anyway minimal.

In the past few years, we have experienced several exchange rate crises in Argentina, Asia and Turkey. In our view, the practice of daily interest rate payments is the chief culprit for the extent of the exchange and interest rate crisis. Even worse, the global economy is so unstable that we are precariously close to the next exchange crisis, which may affect literally any currency. As long as, we stick to our system of daily interest rate payments, the financial system provides an incentive for traders to short the weak currency. In extreme situations, this leads to a collapse of the exchange rate. The cost of this deficiency is borne by the regular economy through bankruptcies, unemployment, etc. It is in our every interest to initiate the public debate and initiate a move to continuous interest rate payments.

