

Robin Hood Carry: The Yuan As A Funding Currency

Carry trades have been part of the global financial and economic landscape for the entirety of the floating exchange rate era; so long as one country's interest rates are less than another country's interest rates, the temptation to borrow in the former and lend in the latter will be there. It is no more remarkable than water flowing downhill.

What is unusual about the topic at hand is we are accustomed to thinking of the funding currency, the one with the low interest rates, as being one in economic trouble. This certainly was the case for the long-running yen carry trade and later for the Swiss franc and U.S. dollar carry trades (see "Looking At The Carry Trade," "The Short, Awful Life Of The Dollar Carry Trade," and "Franc-ly My Dear, I Don't Give A Carry," June 2007, August 2008 and September 2008, respectively). What happens when the funding country is the world's largest holder of foreign reserves, the world's largest creditor to the United States and the owner of the highest average annual economic growth rate for the last decade, respectively?

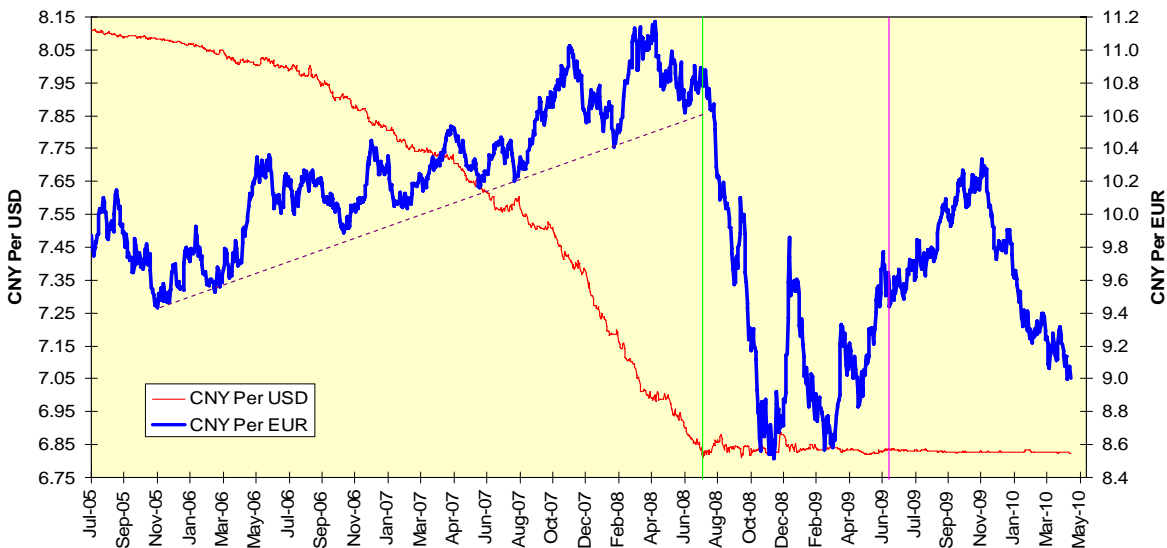
We are speaking, of course, about China. The Chinese yuan has gone through three distinct periods over the past decade. First, it was pegged, much to the consternation of U.S. protectionists, to the USD until July 21, 2005. It then began a gradual and controlled revaluation until, without public notice, it was re-pegged to the USD over the weekend of July 12-13, 2008; this apparently was part of a deal to maintain China as an investor in U.S. agency securities. This date will be noted with a green vertical line on all subsequent charts.

The third period, noted with a magenta vertical line on all subsequent charts, came during mid-June 2009. This was when the total carry return of the USD into the CNY stopped rising. As the currency was pegged, we can infer the interest spread converged to zero at this time. The Chinese had to adopt U.S. interest rates to maintain the peg of the CNY. At the time of this writing, the CNY remains pegged despite widespread speculation it will be allowed to revalue by mid-year.

Greenbacks And Euros And Yuan, Oh My

We can illustrate the yuan carry trade with two currency pairs, the USD-CNY and the CNY-EUR. First, let's take a look at these two as spot rates only. Here we see the history discussed above; prior to July 2008, the monotonic strengthening of the CNY against the USD is quite visible. The CNY weakened against the EUR as part of an erratic trend; by the transitive property of relationships, we can deduce the USD was weakening against the EUR significantly over this period.

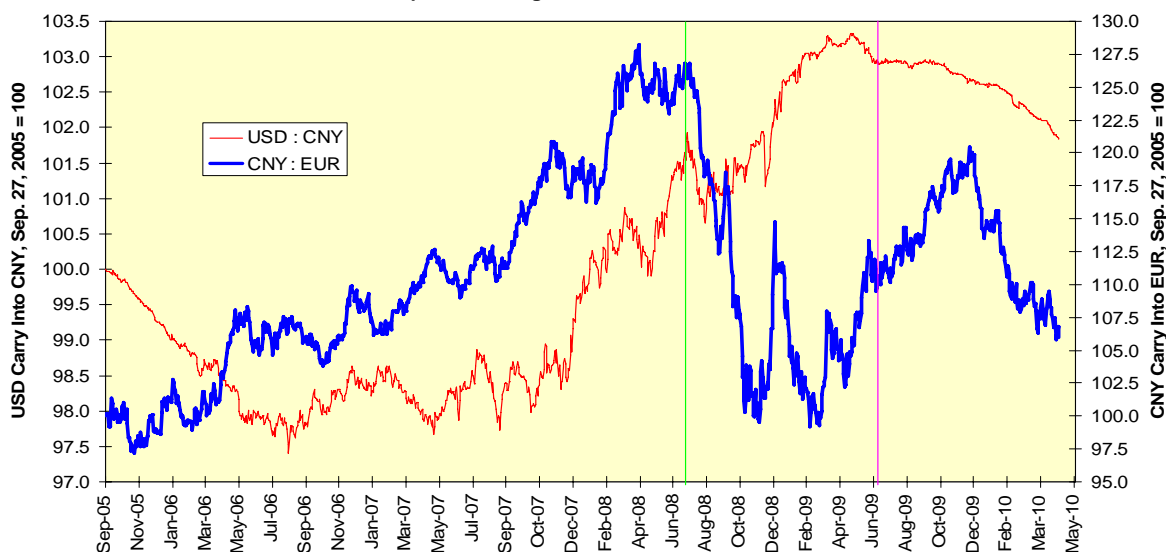
Two Yuan Spot Rates



The effects of the July 2008 re-pegging of the CNY are obvious, especially in light of the rather pronounced volatility of the CNY per EUR rate. Once interest rate convergence was achieved in June 2009, the CNY began to weaken against the EUR until the common currency started to feel the ill effects of its various sovereign credit crises at the end of November 2009.

Now let's restate the two exchange rates not in terms of spot values, but rather in terms of a carry index beginning in September 2005. For simplicity's sake going forward, the dollar carry into the yuan and the yuan carry into the euro will be designated as USD:CNY and CNY:EUR. The carry indices combine interest rate spread returns as well as spot rate gains and losses.

China Could Lend Profitably In The Eurozone Prior To European Sovereign Debt Weakness Took Hold

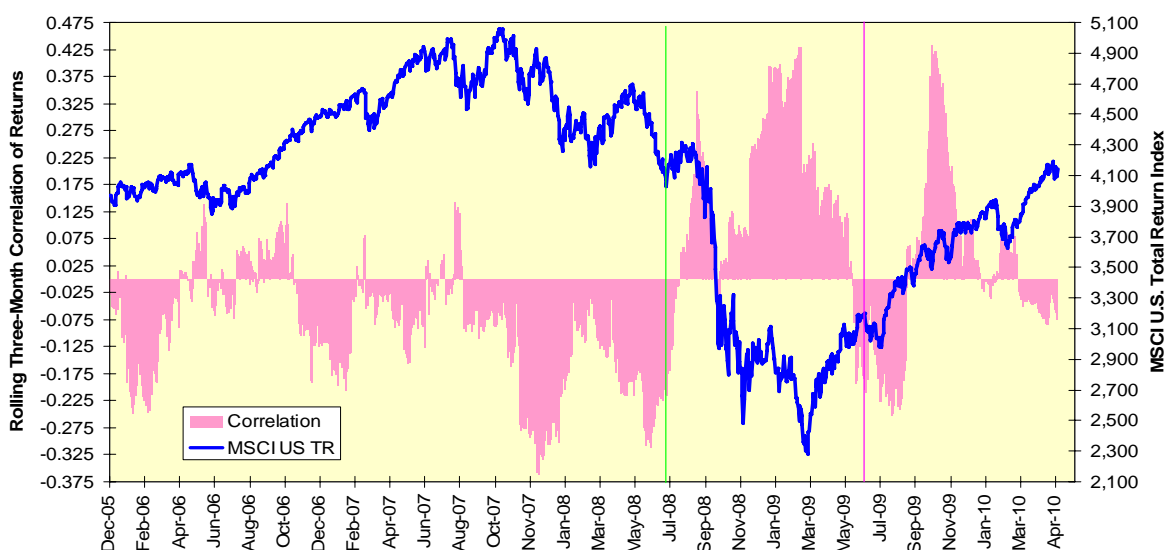


The key feature for the USD:CNY is how it flattens after interest rate convergence. The key feature for the CNY:EUR is how profitable it became between June and November 2009 to borrow the CNY and lend in the EUR. This profitability and a similar profitability for the USD:CNY prior to July 2008 coincided with global bull markets in equities and other risky assets. After both carry trades started to weaken, global markets for risky assets remained stalled until irrefutable evidence the world was not headed back into recession emerged in February 2010.

Equity Market Effects

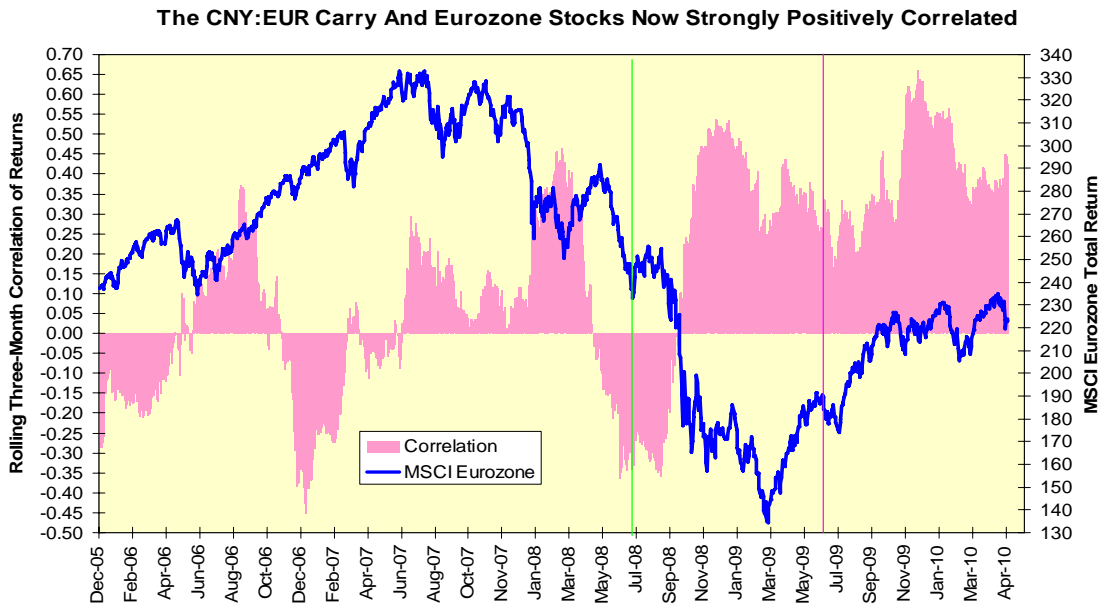
Let's demonstrate these relationships by mapping the MSCI total return index for the U.S. against a three-month rolling correlation of returns for this series against those of the USD:CNY. The answer does not jump out at us immediately when we view the chart; prior to July 2008, the correlation of returns is mostly negative. As American stocks rose (fell), the USD:CNY generally fell (rose). During the financial crisis of late 2008, the correlation of returns turned positive as global money fled into the dollar. By 2010, the overall correlation was weak and unstable once again.

The USD:CNY Carry And U.S. Stocks



It was only after August 24, 2009 that the impact of the USD:CNY became apparent, and here the cause was external. Three-month USD LIBOR fell under three-month JPY LIBOR; it was now cheaper for anyone involved in global carry trades to borrow the USD than to borrow the JPY. This unexpected switch in global funding rates would remain intact until March 2010. As the global supply of USD is much larger than that of JPY and as the \$2.273 trillion foreign exchange reserves of China were linked to USD rates, a sudden source of cheap funding became available for global financial speculation. Global equity markets scarcely experienced a downtick over the next two months.

It is in the EUR, however, where the effects of the carry trades really become evident. Shortly after the July 2008 re-pegging, the three-month rolling correlation of returns between the MSCI Eurozone index and the CNY:EUR turned and remained strongly positive regardless of what European equities were doing. USD rates were well below EUR rates throughout this period, and as China moved toward interest rate convergence with the U.S., both currencies became funding sources for European (and other) markets.

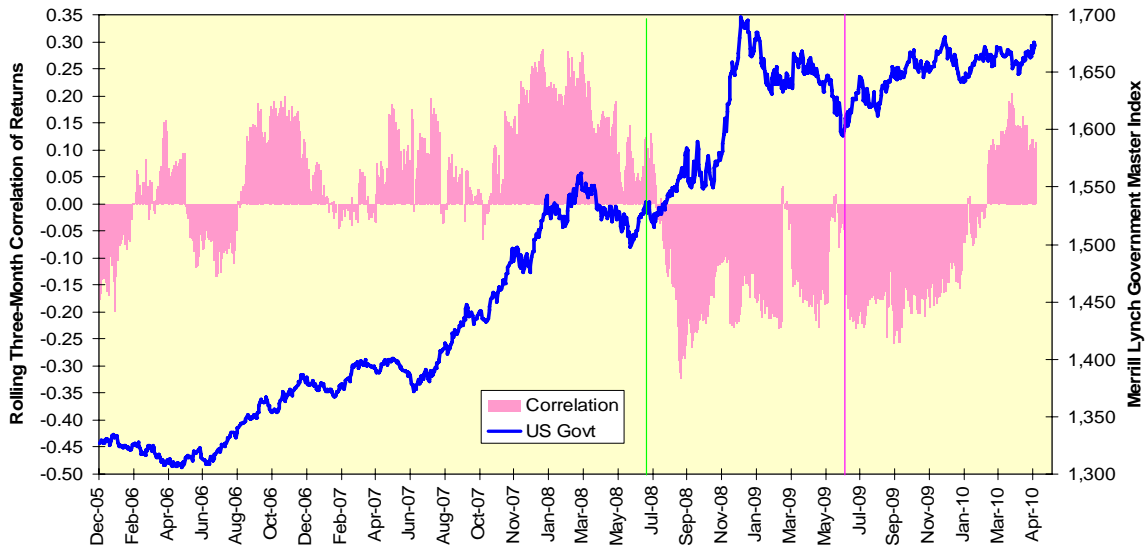


Fixed-Income Effects

If the yuan carry trade effects equities, it should affect fixed-income markets as well. Let's use the Merrill Lynch total return series for the U.S. and Pan-European bonds for government bond returns and the ML U.S. Corporate & High-Yield Master and Eurozone 7-10 Year Corporate index for corporate bonds.

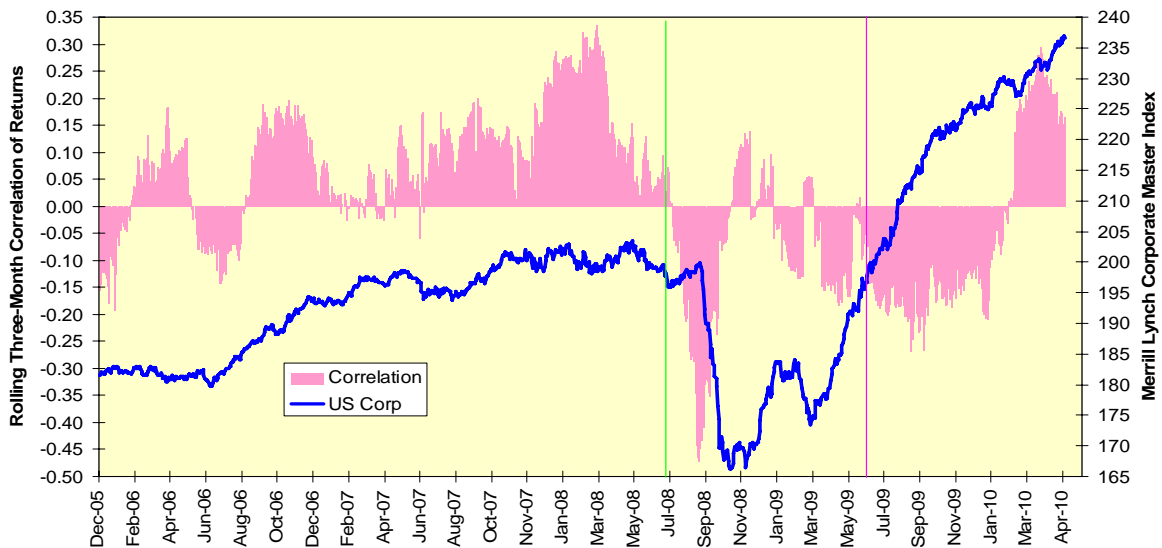
First, the three-month rolling correlation of returns between the USD:CNY and U.S. governments turned negative after the July 2008 re-pegging of the CNY, and it remained negative until February 2010.

The USD:CNY Carry And U.S. Government Bonds



The picture is different for the U.S. corporate bonds. As investors dumped these bonds during the 2008 financial panic, the correlation turned sharply negative. Once the returns on the USD:CNY started to flatten and investors moved back into corporate bonds in 2009, the correlation once again turned negative until February 2010.

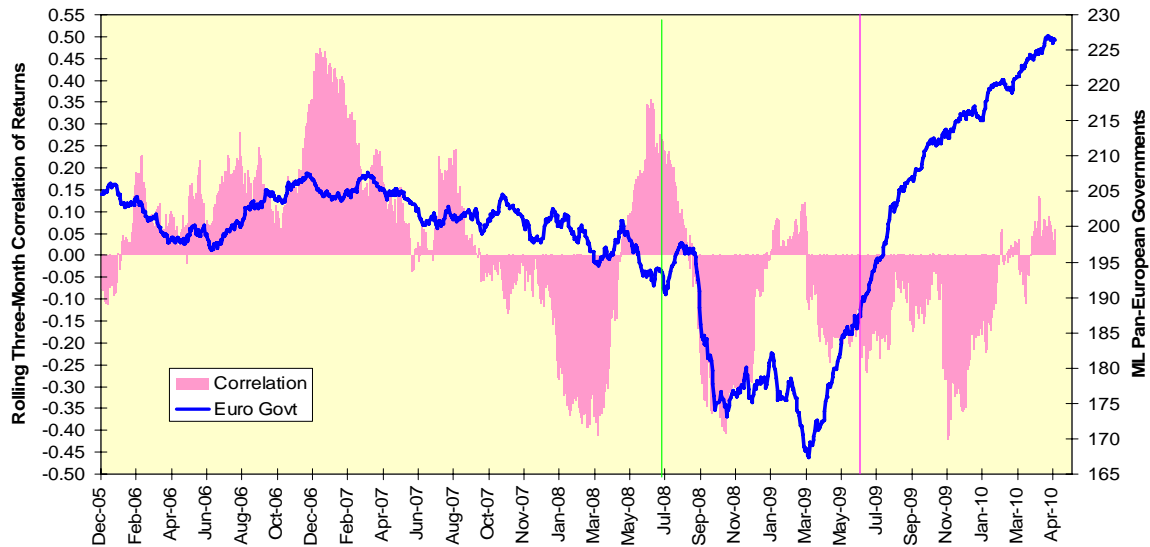
The USD:CNY Carry And U.S. Corporate Bonds



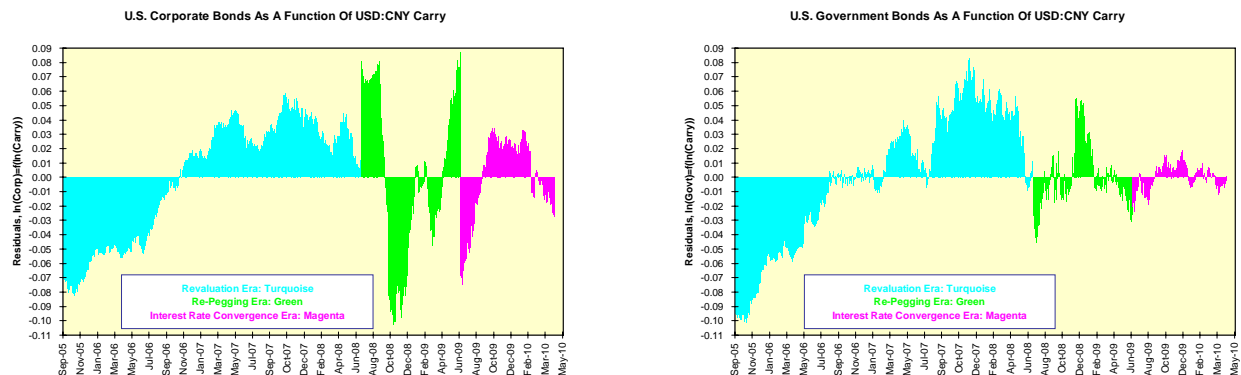
We see much less negative correlation of returns between the CNY:EUR and the Pan-European government bonds. The wider carry allowed for funds to flow into the European government bonds and support a huge rally therein during 2009.

That diminished negative and weakly positive correlation of returns is even more apparent when we look at the European corporate bonds. Investors were able to pile into these bonds at a very wide carry, especially after the June 2009 convergence of interest rates.

The CNY:EUR Carry And Eurozone 7-10 Year Corporate Bonds



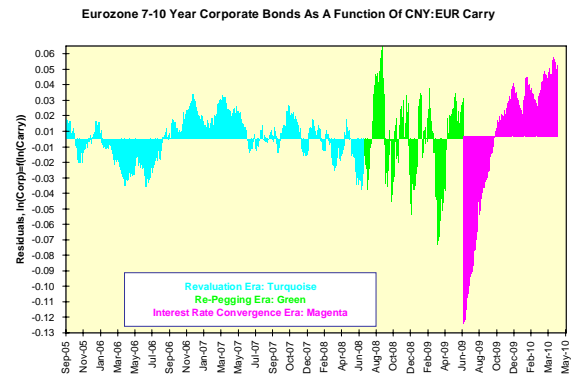
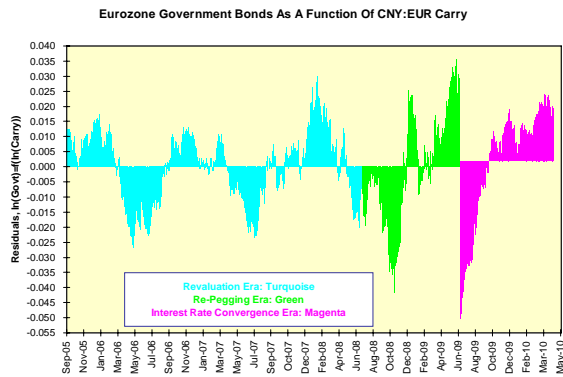
How significant were the shift dates of July 2008 and June 2009 in assessing the impact of the carry trades on fixed-income markets? If we run a series of regressions across the three different periods of the form $\ln(\text{bond}) = f(\ln(\text{carry}))$ and capture the residuals of each, the results become quite apparent. Each residual set is displayed with the pre-July 2008 period in turquoise, the revaluation period in green and the post-June 2009 period in magenta.



The shift in regime did not exert a significant change on the relationship between the USD:CNY and U.S. government bonds. We can be confident the third period, the interest rate convergence period, was different from the combined previous two periods and the second period at 5.6% and 0.8% confidence only. The answer is markedly different for the U.S. corporate bonds; here the respective confidence levels are 99.8% and 95.4%. We can conclude the convergence of interest rates for the yuan carry trade affected risk-taking behavior positively and risk-averting behavior not at all.

Now let's shift to the CNY:EUR cases. Here the impact of interest rate convergence for the third period with respect to the combined previous two periods was a highly significant 95.2%, and the impact between the third and second periods was 28.5%. The wide carry made European government bonds attractive.

What about the European corporate bonds? Here we should expect the very wide carry to produce highly significant changes in behavior, and this is exactly the case. The third period is different from both the combined first two periods and the second period alone at near-100% confidence.



We have to conclude on both the stock and the bond cases that the opening of the yuan carry trade after interest rate convergence in June 2009 led to a liquidity-fueled bull market around the world. Of course, liquidity, like tides, can flow out as well as in, and any ending of the interest rate convergence accompanied by an increase in U.S. short-term interest rates (note to younger traders: U.S. short-term interest rates can and do rise) will pose an extreme threat to the global financial markets.