Post-Bubble Ruble Trouble And Reversal

"Russia is a riddle wrapped in a mystery inside an enigma." – Winston Churchill

One of the nice things about trading is the certainty of your position. Economists argue famously over issues that should have been decided long ago, and lawyers do nothing but argue for absolute determinations in an uncertain world, but traders have reality staring at them on the screen and on their account statements. You can argue with the market if you would like, but the dispute will be from your side alone.

Similarly, the units in which markets are measured are seldom in dispute, either. In nearly all cases currencies are measured against the U.S. dollar; relationships between two non-dollar currencies are referred to as cross-rates. However, prominent exceptions over the years have arisen in Europe where the cross-rates between the British pound, Swiss franc and others against the euro are more important than the dollar rate.

Russia, as we might expect given its economic links to Europe, has an important cross-rate to the euro. As its economy is heavily dependent on the price of commodities denominated globally in dollars, its exchange rate to the dollar is critical as well. This places Russia in the uncomfortable role of having much of its export income denominated in dollars while many of its import costs and financing arrangements are denominated in euros. Which is the more important rate, if either, and how did this unfold during the collapse of Russian markets in the second half of 2008 and their subsequent rebound after the March 2009 low?

Views You Can Use. Maybe

One possible way of answering the question of which is the more important measuring stick for the ruble (RUB) is to see against which currency it reacted most in a crisis. This is akin to asking a multilingual person which language they think in; the answer is the language in which they mentally count.

The reaction measure will be the ratio of implied volatility to high-low-close volatility, or excess volatility. The implied volatility measure used is the rate for three-month RUB non-deliverable forwards for USD and EUR holders, respectively. The HLC volatility is defined as:

$$\sum_{i=1}^{N}\left[\frac{\left[.5*\left(\ln\left(\frac{\max(H,C_{t-1})}{\min(L,C_{t-1})}\right)\right)^2-.39*\left(\ln\left(\frac{C}{C_{t-1}}\right)\right)^2\right]*260}{N}\right]^{1/2}$$

Where N is the number of days between 4 and 29 that minimizes the function:

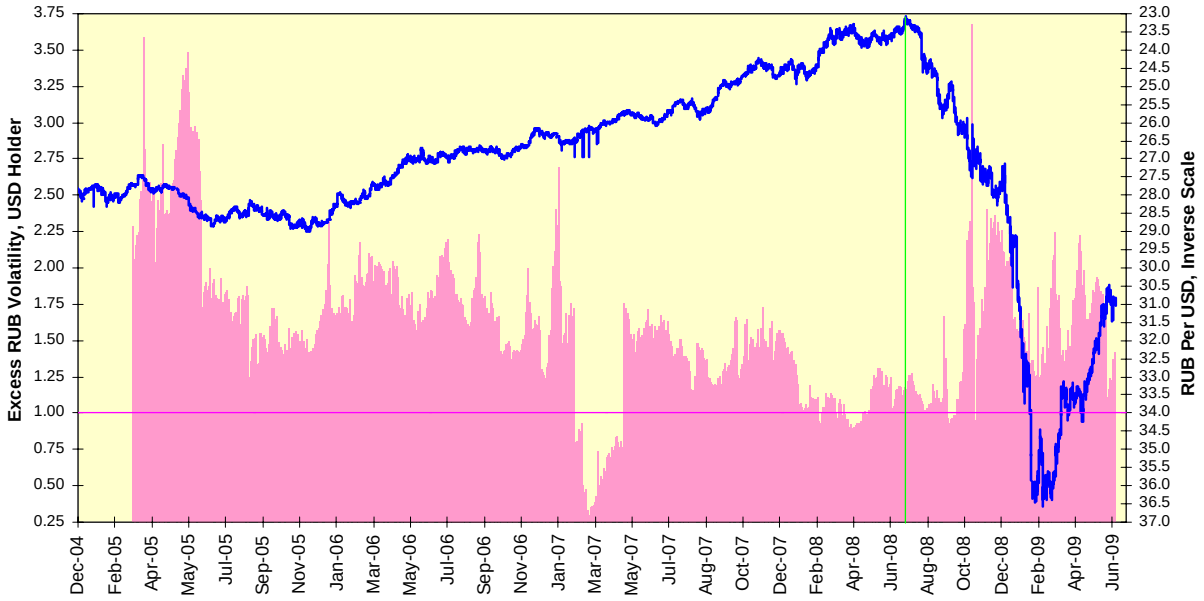
$$\frac{1}{N}*\sum_{i=1}^{N}\frac{N}{Vol^2}*|(P-MA)|*|\Delta MA|$$

A key date in the analysis is July 15, 2008, which is when the U.S. government backstopped Fannie Mae and Freddie Mac. On that date the Chinese yuan stopped appreciating, the EUR fell and the euro-yen cross-rate moved strongly in favor of the yen; all this suggests a massive currency deal was cut between governments who did not find informing their citizens thereof necessary (see "A Cross-Rate To Bear," May 2009).

If we mark that date on the charts with a green vertical line and map the RUB rates against the USD and EUR against their respective excess volatilities, we can see which rate expressed their higher demand for insurance against moves in the RUB.

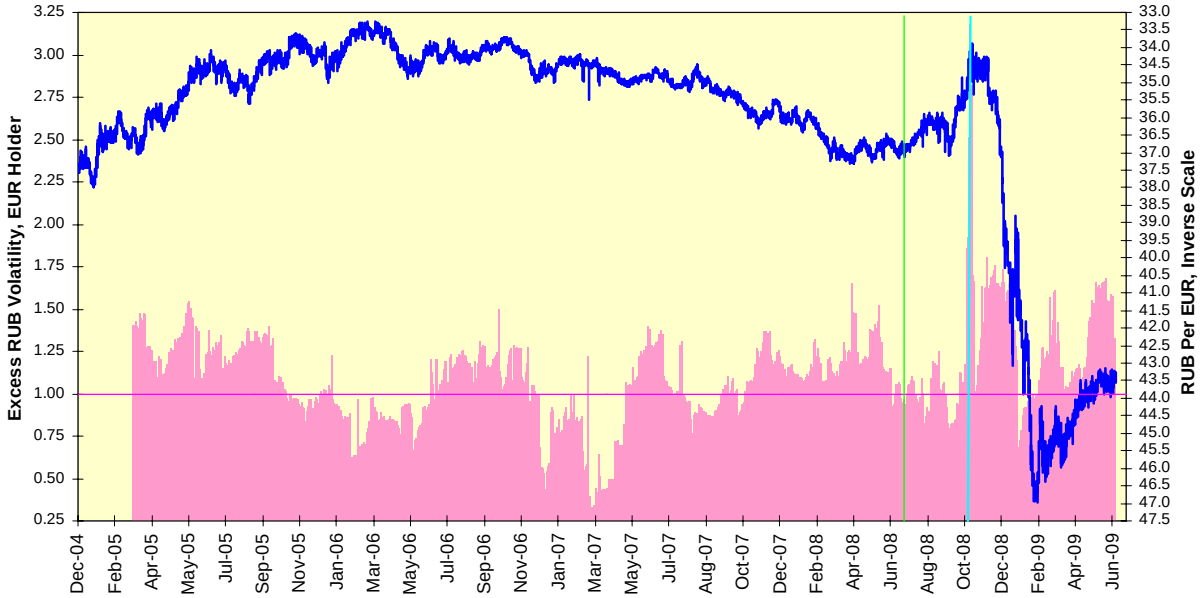
Excess volatility for the USD rate did not climb until mid-October 2008, nearly three months after the RUB's peak against the USD and a month into the post-Lehman Brothers bankruptcy financial crisis. Interestingly, it remained at high levels well after the RUB's rebound after March 2009. This certainly argues the USD rate is of less than paramount importance.

Excess Volatility For Dollar Holders Did Not Rise Immediately After Ruble's Peak



If we repeat the exercise for the EUR, we see a much different picture. As the EUR weakened on the cross-rate, excess volatility rose and then fell as the trade reversed in mid-October, marked with the turquoise line. When the EUR strengthened on the cross-rate, excess volatility for RUB forwards fell. It then rose during the RUB's spring rally on the cross-rate. This tighter link in a crisis suggests the EUR rate is more important for the RUB than is the dollar rate.

Excess Volatility For Euro Holders Rose As Euro Weakened



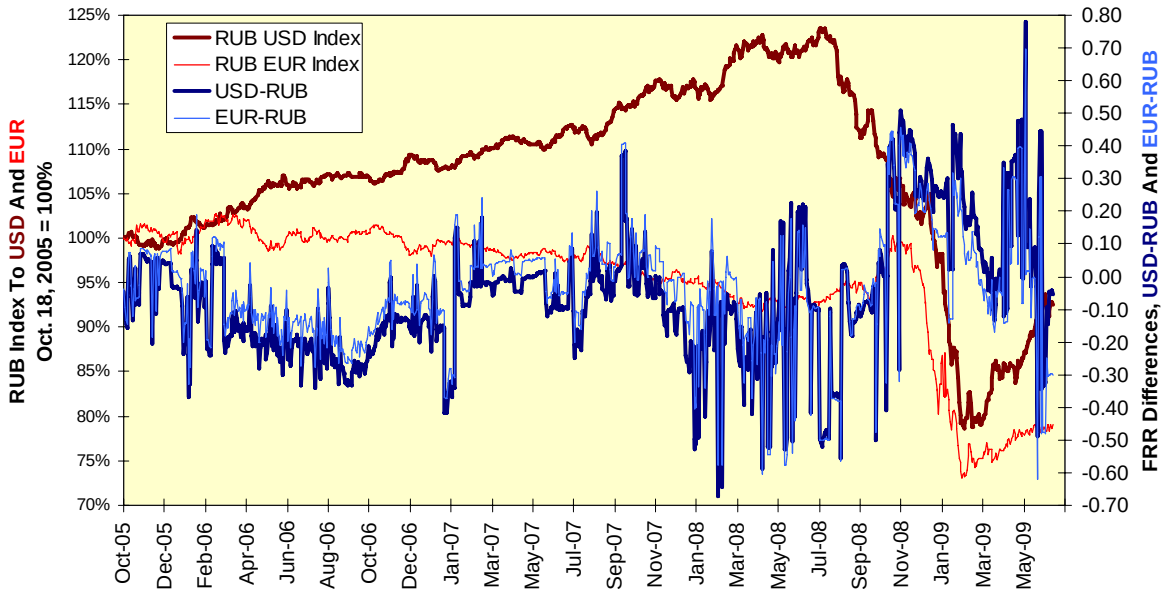
No Interest In Interest

A second way of looking at the problem is seeing which set of expected interest rate differentials is linked most closely to the currency movements. As has been the standard practice in this series, we will construct forward rate ratios between six- and nine-month interbank rates ($FRR_{6,9}$). This is the rate at which we can lock in borrowing for three months starting six months from now, divided by the nine-month rate itself. The more this ratio exceeds 1.00, the steeper the yield curve across this segment and the more the market expects interest rates to rise in that currency.

The difference between two $FRR_{6,9}$ numbers gives us a set of relative interest rate expectations. All else held equal, a rising differential should favor the currency from which we are subtracting, the USD and the EUR in the cases below.

Let's convert the two exchange rates into indices and map them against their corresponding FRR6,9 differentials. The answer is quite surprising: The two $FRR_{6,9}$ differentials are virtually identical, are quite volatile and appear to be unrelated to their underlying currencies. Based on this view, the only conclusion we can draw is movements in the RUB are unrelated to its expected interest rate differentials against either the USD or the EUR.

Key Ruble Exchange Rates Not Linked To Interest Rate Expectations

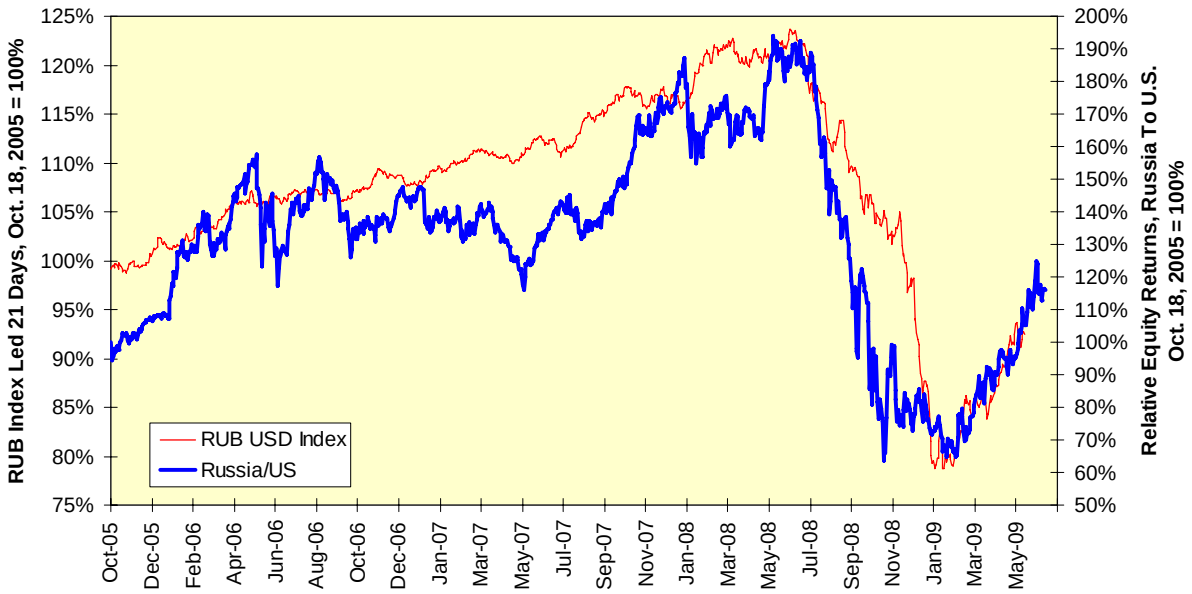


Stock Markets

Now let's turn our attention to another driver of currency movements, prospective returns on assets. Here we can use the relative total returns in USD terms for the American, Russian and Eurozone stock markets as calculated by Morgan Stanley Capital International. Two very different pictures emerge.

In the American comparison, the relative total returns on Russian equities relative to American equities lead the indexed currency movement by 21 trading days, or one month, on average. This indicates capital flows into Russia are a lagging indicator of performance, hardly an unusual conclusion in a world where flows follow performance. It also argues for a very strong linkage between the ruble and the dollar.

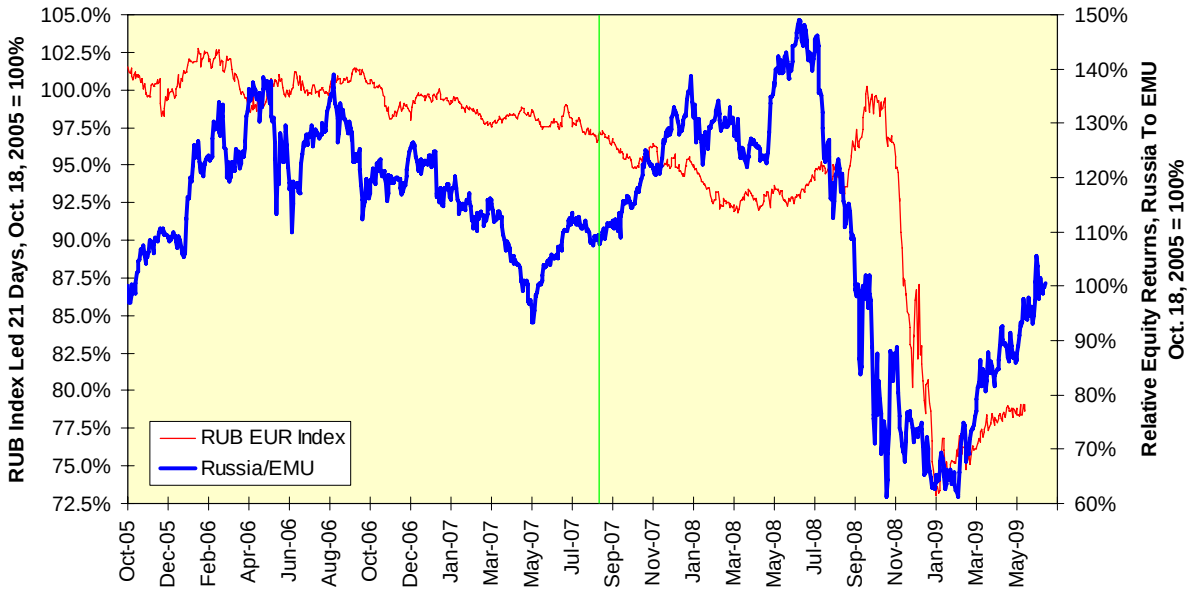
Russian Equities Relative Performance Leads RUB/USD Rate By One Month



A parallel map of comparative stock market performance and currency movement between Russia and the Eurozone tells a very different story. Prior to the onset of the commodity boom beginning with the Federal Reserve's first foray into monetary stimulus in August 2007, marked with a green line, the cross-rate had the same 21-day relationship with stock returns as noted for the American markets.

After the commodity boom and the EUR rally got underway, the two indices diverged and diverged sharply. Now Russian equities outperformed their European counterparts smartly even as the EUR gained on the RUB; that trend reversed again in July 2008. Unlike the steady American comparison where flows and relative performance remained linked, flows and performance disconnected after August 2007.

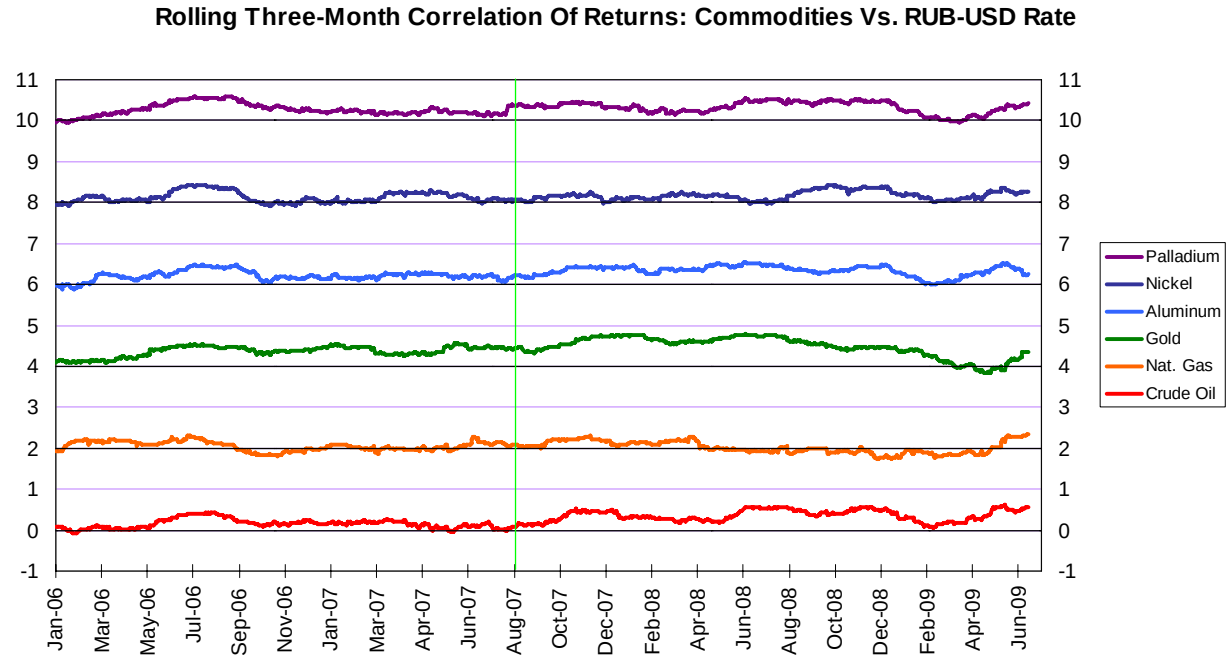
Russian Equities Relative Performance Changed With 2007 Commodity Boom



Commodity Connection

Both the RUB-EUR cross-rate and relative equity performance were distorted by the rise and fall of various commodity prices. As global commodities are priced in USD, let's map the three-month rolling correlation of returns for the RUB-USD against six different commodities exported from Russia, crude oil, European natural gas, gold, aluminum, nickel and palladium.

The chart below shifts each correlation to a new "zero" level, marked with black lines. Instead of each correlation being centered on zero, they are centered on 0, 2, 4, 6, 8 and 10. The lavender lines at 1, 3, 5, 7 and 9 mark the ±1 bounds for each correlation.



With the sole exception of natural gas, nearly all of the rolling three-month correlation sets remain positive nearly all of the time. The correlation trends after August 2007, marked with the green vertical line, rose for palladium, nickel and crude oil and fell for no commodities except for aluminum after May 2009.

The overall conclusion favors the EUR as being the key currency for the RUB. Its excess volatility is linked for closely and the relative performance of its associated stock market is tied more closely to the commodities critical for Russian finances. We can suppose, without being able to prove, the linkage after July 2008 would have been more prominent in the absence of an alleged global currency deal.

Mystery solved. As a trader, focus on the RUB-EUR cross-rate and match it to the prices of key commodities and to the relative performance of Russian and Eurozone equity markets.