Key finding

- FX variance “risk premium” proxy = (backward looking) realized volatility - implied volatility
- Strongly negative variance “risk premium” ≈ High cost of volatility insurance
- VRP strategy = Cheap-vol-insurance currencies - expensive-vol-insurance currencies
- VRP strategy has high returns in short run and low returns in long run
Measurement and interpretation

- Paper emphasizes “exchange rate return” and “spot rate predictability” rather than excess returns
  - Relevance (for asset pricing) of “exchange rate return”?
- Variance risk premium proxy = Past 12-month realized volatility – implied volatility
  - Backward looking volatility likely a poor proxy for current expected volatility
  - Any currency with big rise in expected volatility will end up in expensive-vol-insurance bucket
  - Examine alternative sorting variable: Past 12-month realized volatility – last month volatility?
  - The latter could be evaluated over much longer sample period
Properties of VRP: Relationship with carry trade

- Low correlation of VRP and carry trade: VRP + carry close to MVE
- VRP returns revert at holding periods greater than a few months, carry returns do not
- Reverse peso problem?
  - Sharpe ratios

<table>
<thead>
<tr>
<th></th>
<th>VRP</th>
<th>Carry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full sample 1996-2011</td>
<td>0.48</td>
<td>0.61</td>
</tr>
<tr>
<td>Excluding Aug-Oct 1998 and Sep-Nov 2008</td>
<td>0.29</td>
<td>0.89</td>
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Properties of VRP: Does well when volatility shoots up

(3-month moving averages)
Properties of VRP: Does well when volatility shoots up and subsequently

- Innovations in FXVol $\xi_t$. Monthly data.

$$VRP_{t+k} = a + b\xi_t + u_{t+k}$$

<table>
<thead>
<tr>
<th>$k$</th>
<th>$b$</th>
<th>adj. $R^2$</th>
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<tbody>
<tr>
<td>0</td>
<td>0.16</td>
<td>0.04</td>
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<tr>
<td></td>
<td>(0.07)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0.10</td>
<td>0.01</td>
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<tr>
<td></td>
<td>(0.06)</td>
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<tr>
<td>1 + 2 + 3</td>
<td>0.27</td>
<td>0.04</td>
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<tr>
<td></td>
<td>(0.12)</td>
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</table>

- Paper: VRP does well in recession periods

Some similarity: Liquidity provision strategy in equity markets

from Nagel (2012, RFS). (3-month moving averages)
(1) Why is volatility insurance more expensive for some currencies?

- Paper: “Time-variation in the amount of arbitrage capital” available to volatility insurance providers
- Might help explain *time-variation* in conditional expected VRP strategy returns, but does not explain *cross-sectional* differences between currencies
- Does *volatility* of high-insurance-cost currencies co-move more strongly with global volatility? (Paper only checks for co-movement of FX *returns* with volatility)
- Or, again, perhaps variance risk premium proxy just picks up change in expected volatility, not a risk premium?
Why does more expensive volatility insurance lead to selling pressure in a specific direction?

- Paper: “Given the high cost of volatility insurance, natural hedgers scale back on the amount of spot currency they are willing to hold”
- Do natural hedgers (NH) hold currency? They presumably hold options, swaps, forwards.
- Suppose NH hedge with options and reduce demand for options when options become “expensive”
- Possibility 1: NH replace options with swaps/forwards,
  - Offsetting effects on hedging demands of option dealers and swap/forward dealers
  - Not clear that there is any change in net demand
- Possibility 2: NH abandon the hedge → change in net demand as dealers abandon their hedges. But which direction was NH’s hedge?
  - Exporters vs. importers?
  - Foreign corporations vs. U.S. corporations?
  - Foreign asset owners vs. domestic asset owners?
- Weak link in the story: Not clear how one can establish a directional prediction from option expensiveness to spot selling pressure
(3) Why is there persistence/delay in price pressure?

- Persistence of the order flow coming from “natural hedgers”?
- Dealers/arbs don’t (or at least ex-post did not) fully anticipate the persistence of the order flow?
- Second weak link in the story

Wrap up

- Interesting, novel facts about FX returns
- Some concerns about reverse peso problem
- VRP strategy returns resemble returns from a liquidity-provision strategies in other markets
- But it is difficult to come up with a coherent explanation that plausibly applies to the VRP strategy