Discussion of

“The Returns to Currency Speculation”

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January 5, 2007
• Uk interest rate = 5%, US interest rate = 2%. Invest in UK?

1. Naive: Yes, Make 3% more

2. Traditional: No, Pound will depreciate 3% (on average)

3. Fact: Pound seems to go up!

4. Evidence

$$\text{Return}_{t+1} = a + b(R^f_t - R^d_t) + \varepsilon_{t+1}$$

$$b \geq 1.$$ Small $R^2$, but still you make money.

5. Economically large: All interest differential (and more?) is expected return, none expected depreciation (≤ 1 year)
• This paper:

1. Confirm and update evidence

2. Sharpe ratio is large, survives quoted bid/ask spreads


• Conclusion: “Price impact” is large, *marginal* Sharpe ratio is zero.
Evidence

Con: Much to do. $i$ in $a_i$ is important. Pooled or cross-sectional does not work.\\
\[
\text{Return}^i_{t+1} = a_i + b_i(R_t^i - R_t^d) + \varepsilon_{t+1}^i; \ t = 1, 2, \ldots T
\]

Pro:

- Common pattern across all assets:
  1. Dividend yield forecasts stock returns
  2. Long yield - short yield forecasts long-short bond returns
  3. Foreign - domestic yield forecasts foreign - domestic returns
• More in common with stocks, bonds

1. “Follow yield,” “All price variation = ER”

2. “Missing adjustment” (short run, i.e. \( \leq 1 \text{ year} \))

3. All together.
   
   (a) “Bad times”, P/D is low, \( R^f \) is low \( \rightarrow R^f < R^{(10)}, R^f,US < R^f,UK \).

   (b) All risk premia are high.

4. Cross-predictability?
   
   (a) \( R^f \), term spread, bond forecast factor also forecast stock excess returns

   (b) One common forecaster, as in bonds? Term \( \rightarrow \) fx?

• In sum:

1. Pervasive common pattern makes FX phenomenon believable.

2. But.. Common timing & pattern needs common explanation. All microstructure, limits to arbitrage?
**Fact:** *Net order flow is associated with price changes. ("order flow" not "trades")*

- Don’t jump to: *Any order causes price changes.*

“A buy order of 1 billion dollars increases the execution spot exchange rate by 0.54 percent” (p.20, top.)
1. Price and order flow: correlation or causation?

- Association of $\Delta p$ with order flow: “Price pressure” (trade $\rightarrow \Delta p$) or “Price discovery” ($\Delta p \rightarrow \text{trade}$)?

- Regress $y_{t+1} - y_t$ on net order flow (daily data, Brandt and Kavajecz 2004 JF)

1. Price change of off-the-run bonds is associated with on-the-run order flow.

<table>
<thead>
<tr>
<th>Maturity</th>
<th>Own Net Orderflow by Maturity ($\times 100$)</th>
<th>On-the-run Net Orderflow by Maturity ($\times 100$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0–6 months 6–12 months 1–2 years 2–5 years 5–10 years 10–30 years</td>
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</tr>
<tr>
<td>Just off-the-run</td>
<td>-0.13 -0.04 -0.06 -0.03 -0.02 0.46*</td>
<td>-0.21*** -0.37*** -0.69** 0.43** -0.28 -0.30</td>
</tr>
<tr>
<td>0–6 months</td>
<td>-0.80* 0.15 -0.16 0.08 -0.04 0.15</td>
<td>-0.15** -0.56*** -0.47*** -1.08*** -0.54 -0.34</td>
</tr>
<tr>
<td>6–12 months</td>
<td>-0.42 0.00 -0.31 -0.04 -0.46* -0.64*</td>
<td>-0.61** -0.52** -0.99*** -1.77** -0.98** -0.45*</td>
</tr>
<tr>
<td>1–2 years</td>
<td>-0.70 -0.01 -0.59 0.33 0.11 -0.02</td>
<td>-0.42** -0.40** -0.82** -1.32** -1.25*** -0.72**</td>
</tr>
<tr>
<td>2–5 years</td>
<td>0.25 -0.10 -0.59 -0.35 -0.33 -0.40</td>
<td>-0.93** -0.32 -0.57 -1.00*** -1.46*** -1.08**</td>
</tr>
<tr>
<td>5–10 years</td>
<td>-0.24 0.37* -0.55 0.21 0.02 -0.03</td>
<td>-0.02 -0.55* -0.33 -1.39** -1.09*** -1.13***</td>
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<td>10–30 years</td>
<td>-0.24 0.37* -0.55 0.21 0.02 -0.03</td>
<td>-0.02 -0.55* -0.33 -1.39** -1.09*** -1.13***</td>
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</table>

2. Price change of each bond is driven by 2–5 year order flow.

- Association of $\Delta p$, net order flow need not measure “price impact” of a trade
2. Carry trade is long term, slow moving

- “Carry trade” goes on for many years at a time. Easy to sneak on a position!

-(Looks just like interest rates. \( a_i \) is vital.)
3. **Gross and Net, Swaps**

- *Gross* volume, order flow is huge compared to *net* order flow associated with $\Delta p$.
  
  1. Evans and Lyons 1999: DM/$ average $300 billion/day!
  
  2. Does each billion push exchange rates by 0.5%?

- Most fx trading is high frequency bets.
  
  1. Any “asymmetric information,” “price impact” is about day to day movements, not interest differentials.
  
  2. Easy to hide “carry trade” in this.

- Don’t have to buy billions of spot or forward currency!
  
  1. Simple cash-settled return swap: I agree to pay you $ interest, you agree to pay me £ interest. No up-front payment, only interest *difference* changes hands ex-post.
  
  2. Transactions costs, yes, but do not swallow up 2-3% interest differentials!
Summary

- Phenomenon is economically large: all (and maybe more) interest rate spread is expected return, none expected depreciation. (1 year and less horizon).

- Paper: “price impact” is large, marginal sharpe ratio is zero, this does not measure an economically interesting risk premium

- Big question: $R^{UK} = 5\%, \ R^{US} = 2\%$
  
  1. Nobody (else) wants to buy $\mathcal{L}$? (Risk premium)
  
  2. Nobody (else) can buy $\mathcal{L}$? (This paper)
My doubts:

1. Then why common pattern, timing across assets?
   
   (a) Price impact in stocks, bonds too?
   
   (b) Just happens to be associated with relative business cycles \((R^UK - R^US)\)?

2. Is the price impact of carry trades really so large?
   
   (a) Flow-price association does not mean price impact.
   
   (b) Even if there is impact, positions are very slow moving –years.
   
   (c) → Easy to hide such trades in 1 trillion/day volume of speculators.

3. Even if spot or forward price impact is large, implement with swaps, etc.

Order flow/price change, “downward sloping demands,” “liquidity” are fascinating, and may have big impacts on non-microstructure finance. Just not on this issue.