Can we Explain/Predict Exchange Rates?

P. Sercu, *International Finance: Putting Theory to Practice*

**Overview**

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**Chapter 11**

*Do FX Markets Themselves See What’s Coming?*
Overview

The Forward Rate as a Black-Box Predictor
Testing the forward rate as a predictor?
Unconditional tests
Time-series Regression Tests
Trading rules
The Forward Bias: Concluding discussion

Forecasts by Specialists
Central Banks
Professional Traders and Forecasters

What to take home?
Why do pros always know all?
Why do we know so little?
Can we still trust/use the fwd rate?
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– not successful: too streamlined, simplified, inflexible?
– market may be better at predicting, black-box style

We review
– forward rate
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Testing the forward rate as a predictor?

General: \[ \frac{E_t(\tilde{S}_T)}{1 + E_t(\tilde{r}_{\tilde{s},t,T})} = \frac{F_{t,T}}{1 + r_{t,T}} \] (\(=\) PV of FC 1);

\[ \Rightarrow E_t(\tilde{S}_T) = F_{t,T} \frac{1 + E_t(\tilde{r}_{\tilde{s},t,T})}{1 + r_{t,T}} \]

\[ = F_{t,T} \frac{1 + r_{t,T} + RP_{t,T}}{1 + r_{t,T}} \]

\[ \Rightarrow E_t(\tilde{S}_T) = \frac{F_{t,T}}{S_t} \frac{1 + r_{t,T} + RP_{t,T}}{1 + r_{t,T}}; \]

\[ \Rightarrow 1 + E_t(\tilde{s}_{t,T}) = \left(1 + FP_{t,T}\right) \frac{1 + r_{t,T} + RP_{t,T}}{1 + r_{t,T}}; \]

\[ \Rightarrow E_t(\tilde{s}_{t,T}) = FP_{t,T} \text{ if } RP_{t,T} = 0, \]

\[ \approx 1 + FP_{t,T} + RP_{t,T} - 1 \text{ if not.} \]

Most of Lit: \(- RP \approx 0\) (Uncovered Interest Parity—UIP)\n
- to “solve Siegel”, write in terms of logs (“≈”)
Test 1-2: unconditional means tests

Simple test, currency by currency (C. Smith, 1974?)

If $E_t(\epsilon_{t,T}) = 0$,
then $E(\epsilon) = 0 \iff E(FP) = E(\tilde{s})$.

Meta-test across currencies (Backus and Smith, 2002?)
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Test 3-4: conditional tests

Fama / Cumbo-Obstfeld Currency-by-currency regression

Test for \([\gamma_1 = 1 \text{ and } \gamma_0 = 0]\) in

\[
E_t(\tilde{s}_{t+1}) = \gamma_0 + \gamma_1 FP_{t+1}.
\]

Evaluation of trading rules

- carry-trade style test: take clue from interest rates
- take clue from predictable \(E(\tilde{s})\), if any, and test whether \(FP_{t,T}\) picks it up

Below: tests on three data sets

- Lieven De Moor: 5-weekly obs on one-month \(\tilde{s}\) and \(FP_{t,T}\), 17 currencies against the GBP, 1977-1996
- Martina Vandebroek: one-week contracts against the DEM, 23 years
- Fang Liu: 24 years of weekly obs on (overlapping) monthly contracts, ERM rates for DEM
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**Unconditional tests**

**Sample 1** (prices for one pound—i.e. GBP as FC)

<table>
<thead>
<tr>
<th>Currency</th>
<th>avg s</th>
<th>avg FP</th>
<th>s-FP</th>
<th>t</th>
<th>prob</th>
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<td>-14.20</td>
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<td>18.00</td>
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<td>esp</td>
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<td>-7.49</td>
<td>-0.39</td>
<td>0.70</td>
</tr>
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<td>-3.20</td>
<td>9.25</td>
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<td>0.65</td>
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<td>-18.40</td>
<td>4.00</td>
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<td>0.89</td>
</tr>
</tbody>
</table>

\[
s = 3.37 + 0.64 \ FP, \ R^2 = 0.92 \\
(1.47) \quad (0.05)
\]

**Key** I test the equality of mean monthly exchange-rate changes and one-monthly forward premia against the GBP (quoted as HC/GBP, UK style), 1977-96. All means (and their differences) are expressed as basis points, i.e. percentages of percentages. The plot on the right visualizes the means. Means and t-tests kindly provided by Martina Vandebroek.
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**Unconditional tests — comments**

**Lieven’s data (sample 1)**
- t-tests individually insignificant
- meta-$R^2$ 0.92!
- meta-slope 0.62, statistically $> 0$ and $< 1$
- intercept 3.4 bp, statistically close to zero

**Fang’s data (sample 3)**
- meta-$R^2$ 0.42 (weekly)
- meta-slope 0.58, statistically $> 0$ and $< 1$

**Implication: carry-trade profits**

Let $\tilde{s} \approx 0.6 \times (r - r^*) + \tilde{c}$,

\[
\Rightarrow \tilde{s} + r^* - r \approx 0.6 \times (r - r^*) + (r^* - r),
\]

\[
= 0.4 \times (r^* - r),
\]

\[
\begin{cases} 
> 0 & \text{when } r^* > r \quad (\text{FC weak}) \\
< 0 & \text{when } r^* < r \quad (\text{FC strong})
\end{cases}
\]
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$\Rightarrow \tilde{s} + r^* - r \approx 0.6 \times (r - r^*) + (r^* - r)$,

$= 0.4 \times (r^* - r), \left\{ \begin{array}{ll}
> 0 & \text{when } r^* > r \quad \text{(FC weak)} \\
< 0 & \text{when } r^* < r \quad \text{(FC strong)}
\end{array} \right.$
What kind of risk premium?

Unconditionally, carry trade has a (hitherto) reliably high Sharpe Ratio – one of the best. What’s the rub?

◊ respectable v shady currencies?

  - Traders afraid to lose reputation.
    
    “Nobody ever got fired for buying CHF. Getting fired for buying Turkish Lira is much easier to imagine.”

  - Fallen angels in stock market, small-stock effect, liquidity?

◊ ‘picking up pennies in front of a steamroller’ (The Economist)

  - hi-ß currencies drop drastically when panic strikes and traders unwind their carry-trade positions
    ⇒ negative co-skewness (drop when variance is high) (Liu and Sercu, 2010; Christiansen, Ranaldo, and Söderlind, 2010)

  - these panicks are also times where stocks drop
    ⇒ these are conditionally high-beta assets (although on average low-beta) (Ranaldo and Söderlind, 2010; Christiansen, Ranaldo, and Söderlind, 2010)
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Time-series Regression Tests

\[ \gamma_1 s \text{ in samples 1 and 3} \] (Monthly for GBP and weekly for DEM)

\[ E_t(s_{t+1}) = \gamma_0 + \gamma_1 F_{t,t+1} \]

- Monthly observations, one-month contracts for GBP, 1977-96
  - ATS BEF CAD CHF DEM DKK ESP FRF
    -1.52 -1.21 -4.98 -1.24 -1.08 -0.90 0.22 -0.61
  - IEP ITL JPY NOK NLG PTE SEK USD mean
    0.35 -1.38 -5.11 0.01 -1.97 0.71 -2.68 -2.79 -1.50

- Weekly observations, one-month contracts for DEM, 1976-98
  - ATS BEF DKK FRF NLG ITL ESP IEP mean
    0.11 0.25 0.15 0.78 -0.66 0.16 0.91 0.15 0.23

**Key** Monthly percentage exchange rate changes are regressed on one-month forward premia. The base currency is the GBP, and we use OLS. Table kindly provided by Martina Vandebrrok.

**Comments**
- slope small or \(< 0\), not 0.6 or 1 – lots of variability (random error?)
- \(R^2\) (not shown) abysmal

**Nothing to predict?**
- maybe for floating rates, but not for DEM data (sample 2)
**Time-series Regression Tests**

\( \gamma_1 \)s in samples 1 and 3 (Monthly for GBP and weekly for DEM)

\[
E_t(\tilde{s}_{t,t+1}) = \gamma_0 + \gamma_1 F_{P,t+1}
\]

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  - ATS BEF CAD CHF DEM DKK ESP FRF
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\[ E_t(\tilde{s}_{t+1}) = \gamma_0 + \gamma_1 F P_{t,t+1} \]

monthly observations, one-month contracts for GBP, 1977-96

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<thead>
<tr>
<th></th>
<th>ATS</th>
<th>BEF</th>
<th>CAD</th>
<th>CHF</th>
<th>DEM</th>
<th>DKK</th>
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<th>FRF</th>
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<tr>
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<td>-1.97</td>
<td>0.71</td>
<td>-2.68</td>
<td>-2.79</td>
<td>-1.50</td>
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</table>

weekly observations, one-month contracts for DEM, 1976-98

<table>
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<tr>
<th></th>
<th>ATS</th>
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<th>FRF</th>
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<th>ITL</th>
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<th>mean</th>
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<td>0.15</td>
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– maybe for floating rates, but not for DEM data (sample 2)
### Autocorrelations in sample 2 (weekly, DEM as HC)

\[ E_{t-1}(\tilde{s}_t) = \kappa_0 + \rho_1 \tilde{s}_{t-1} \]

<table>
<thead>
<tr>
<th></th>
<th>BEF</th>
<th>DKK</th>
<th>FRF</th>
<th>NLG</th>
<th>CHF</th>
<th>ITL</th>
<th>GBP</th>
<th>JPY</th>
<th>CAD</th>
<th>USD</th>
<th>ERM</th>
<th>other</th>
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</thead>
<tbody>
<tr>
<td><strong>Total period</strong> (1985/6 - 1998/3), ( \sigma(\rho) = 0.039 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>-0.17</td>
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<tr>
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<td>-0.22</td>
<td>-0.11</td>
<td>-0.44</td>
<td>-0.00</td>
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<td>-0.01</td>
<td>0.04</td>
<td>0.01</td>
<td>-0.23</td>
<td>0.01</td>
</tr>
<tr>
<td><strong>Early ERM</strong> (tight band, 1985/6 - 1992/8), ( \sigma(\rho) = 0.052 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>0.00</td>
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<td>0.03</td>
<td>0.01</td>
<td>-0.26</td>
<td>-0.01</td>
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<td>-0.39</td>
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<td>-0.17</td>
<td>-0.52</td>
<td>0.02</td>
<td>0.12</td>
<td>-0.01</td>
<td>-0.04</td>
<td>0.00</td>
<td>-0.01</td>
<td>-0.27</td>
<td>0.01</td>
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<tr>
<td><strong>Sept 92 - end 93</strong> (turbulence, 1992/9-1993/12), ( \sigma(\rho) = 0.12 )</td>
<td></td>
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<tr>
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<td>0.01</td>
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<td>0.08</td>
<td>-0.13</td>
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<td>-0.32</td>
<td>-0.00</td>
<td>0.13</td>
<td>0.07</td>
<td>0.08</td>
<td>-0.21</td>
<td>0.04</td>
<td>-0.16</td>
<td>-0.02</td>
</tr>
<tr>
<td><strong>Late ERM</strong> (wide band, 1994/1 - 1998/3), ( \sigma(\rho) = 0.066 )</td>
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<tr>
<td>OLS</td>
<td>-0.39</td>
<td>-0.09</td>
<td>-0.17</td>
<td>-0.26</td>
<td>-0.08</td>
<td>0.11</td>
<td>-0.03</td>
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<td>0.09</td>
<td>-0.01</td>
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<tr>
<td>GARCH</td>
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<td>-0.18</td>
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<td>-0.05</td>
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<td>0.11</td>
<td>-0.01</td>
<td>-0.21</td>
<td>-0.03</td>
</tr>
</tbody>
</table>

**Comments**
- negative autocorrelation for ERM rates—how else could it be?
- no autocorrelation for floaters
- well-behaved estimates
## Autocorrelations in sample 2 (weekly, DEM as HC)

\[ E_{t-1}(\tilde{s}_t) = \kappa_0 + \rho_1 \tilde{s}_{t-1} \]

<table>
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<tr>
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<th>DKK</th>
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<tbody>
<tr>
<td>OLS</td>
<td>-0.28</td>
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<td>-0.48</td>
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<td>0.01</td>
<td>-0.01</td>
<td>0.04</td>
<td>0.01</td>
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</table>

- Early ERM (tight band, 1985/6 - 1992/8), \( \sigma(\rho) = 0.052 \)
- OLS: -0.36, -0.30, -0.13, -0.51, -0.03, 0.03, 0.00, -0.03, 0.03, 0.01
- GARCH: -0.39, -0.28, -0.17, -0.52, 0.02, 0.12, -0.01, -0.04, 0.00, -0.01

- Sept 92 - end 93 (turbulence, 1992/9-1993/12), \( \sigma(\rho) = 0.12 \)
- OLS: 0.02, 0.01, -0.24, -0.45, 0.02, 0.13, 0.04, 0.02, -0.08, 0.08
- GARCH: -0.21, 0.01, -0.26, -0.32, -0.00, 0.13, 0.07, 0.08, -0.21, 0.04

- Late ERM (wide band, 1994/1 - 1998/3), \( \sigma(\rho) = 0.066 \)
- OLS: -0.39, -0.09, -0.17, -0.26, -0.08, 0.11, -0.03, -0.13, 0.09, -0.01
- GARCH: -0.42, -0.18, -0.16, -0.26, -0.05, -0.08, -0.03, -0.13, 0.11, -0.01

### Comments

- **negative autocorrelation** for ERM rates—how else could it be?
- no autocorrelation for floaters
- well-behaved estimates
But $FP_{t,T}$ does not predict change! (1)

$$E_t(s_{t+1}) = \gamma_0 + \gamma_1 FP_{t+1} + \kappa_1 st_{-1,t} + \tilde{e}_{t,t+1}.$$  

### Panel A: COF slope coefficient ($\gamma_1$)

<table>
<thead>
<tr>
<th></th>
<th>BEF</th>
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</table>

A1. Total period (1985/6 - 1998/3)

A2. Early ERM (tight band, 1985/6 - 1992/8)

OLS  -0.37 -0.33 -0.21 1.71 0.38 -0.44 0.80 -3.96 -1.90 -0.42 -0.47 -0.35
FIML -0.58 -0.67 -0.28 1.49 0.17 -0.28 -0.62 -4.42 -1.48 -0.96 -0.76 -0.60
GMM  -0.46 -0.75 -0.17 1.33 0.28 -0.41 0.93 -4.52 -1.37 0.30 -0.49 -0.29


OLS  1.74 2.48 0.89 -2.42 9.31 -12.53 3.44 57.92 9.06 63.30 13.32 2.96
FIML 0.57 -0.62 -0.04 -3.78 7.13 -3.81 5.35 19.29 -5.43 12.10 3.08 0.27

A4. Late ERM (wide band, 1994/1 - 1998/3)

OLS  -1.11 -1.55 -4.31 -2.35 -5.52 -3.90 -7.23 -19.06 -2.66 -7.20 -5.49 -4.10
FIML -2.18 -1.85 -4.18 -2.22 -4.15 -2.71 -1.74 -23.64 -5.08 0.31 -4.74 -2.47
GMM  0.07 -1.63 -4.28 -2.12 -5.30 -3.57 -6.80 -17.82 -2.58 -6.79 -5.08 -3.92

Comments

- horribly unstable slopes across currencies, periods
- even central estimates total period vary from 0.71 to –0.08
But $FP_{t,T}$ does not predict change! (1)

$$E_t(\hat{s}_{t+1}) = \gamma_0 + \gamma_1 FP_{t+1} + \kappa_1 s_{t-1,t} + \tilde{\epsilon}_{t+1}.$$ 

Panel A: COF slope coefficient ($\gamma_1$)

<table>
<thead>
<tr>
<th>coefficients for individual currencies</th>
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<tbody>
<tr>
<td><strong>OLS</strong></td>
<td>-0.05</td>
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<td>0.69</td>
<td>1.17</td>
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<td>2.07</td>
<td>0.30</td>
<td>0.26</td>
<td>2.75</td>
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<tr>
<td><strong>FIML</strong></td>
<td>-0.34</td>
<td>-0.36</td>
<td>0.17</td>
<td>0.46</td>
<td>0.32</td>
<td>-0.33</td>
<td>0.97</td>
<td>-1.06</td>
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<td>-0.59</td>
<td>0.27</td>
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A1. Total period (1985/6 - 1998/3)

A2. Early ERM (tight band, 1985/6 - 1992/8)


A4. Late ERM (wide band, 1994/1 - 1998/3)

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<th>central values</th>
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<td>0.18</td>
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<table>
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<th>central values</th>
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<table>
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<th>central values</th>
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<td>-3.92</td>
</tr>
</tbody>
</table>

Comments

– horribly unstable slopes across currencies, periods
– even central estimates total period vary from 0.71 to −0.08
But $FP_{t,T}$ does not predict change! (2)

$$E_t(\delta_{t,t+1}) = \gamma_0 + \gamma_1 FP_{t,t+1} + \kappa_1 s_{t-1,t} + \epsilon_{t,t+1}.$$  

Panel B: autoregression coefficient ($\kappa_1$)

<table>
<thead>
<tr>
<th></th>
<th>BEF</th>
<th>NLG</th>
<th>DKK</th>
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<tr>
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<tr>
<td>B2. Early ERM (tight band, 1985/6 - 1992/8), $\sigma(\kappa_2) = 0.052$</td>
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<tr>
<td>B3. Sept 92 end 93 (turbulence, 1992/9 - 1993/12), $\sigma(\kappa_2) = 0.12$</td>
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<td>B4. Late ERM (wide band, 1994/1 - 1998/3), $\sigma(\kappa_2) = 0.066$</td>
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</tbody>
</table>

Comments
- nothing of the predictability was picked up by $FP_{t,T}$!
But $FP_{t,T}$ does not predict change! (2)

$$E_t(\delta_{t,t+1}) = \gamma_0 + \gamma_1 FP_{t,t+1} + \kappa_1 s_{t-1,t} + \epsilon_{t,t+1}.$$  

Panel B: autoregression coefficient ($\kappa_1$)

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B1. Total period (1985/6 - 1998/4), $\sigma(\kappa_2) = 0.039$

B2. Early ERM (tight band, 1985/6 - 1992/8), $\sigma(\kappa_2) = 0.052$

B3. Sept 92 end 93 (turbulence, 1992/9 - 1993/12), $\sigma(\kappa_2) = 0.12$

B4. Late ERM (wide band, 1994/1 - 1998/3), $\sigma(\kappa_2) = 0.066$

Comments
– nothing of the predictability was picked up by $FP_{t,T}$!
Concluding comments

– The above are not fluke databases
  Froot and Thaler, over seventy-five studies, find a meta-estimate for slope of –0.8.

– Implication 1: dynamic carry trade
  When a currency’s $FP_{t,T}$ is unusually high, expected carry trade profits are higher too (as long as there is no panic)

– Implication 2: inference about missing variable (RP?)
  – $\text{cov}(\text{RP},FP)$ is negative: $\Delta \text{RP} \pm$ neutralizes $\Delta FP$;
  – $\text{cov}(\text{RP},FP) > \text{var}(FP)$; and
  – $\text{var}(\text{RP}) > \text{var}(E(\tilde{s}))$.
  (Fama moment conditions)
Trading Rules (1): the Carry Trade

- Robinson and Warburton (1980), and later Bell and Kettle (1983)

Compare yield on GBP to return if one invests in currency with

1. the highest nominal interest rate.
2. the highest real interest rate (CPI),
3. the highest real interest rate (WPI),
4. the highest real interest rate (ULC)

Make pots of paper money

- Thomas (1986): buy futures with negative basis ($F < S$)
- Taylor (1992): trade on basis moving avges
- Deutsche Bank: Currency Harvest Fund: buy 3 highest-yield currencies, sell 3 lowest-yield
Chartism is popular. Lui and Mole (1998)’s survey:

“(…) over 85% of respondents rely on both fundamental and technical analyses for predicting future rate movements at different time horizons. At shorter horizons, there exists a skew towards reliance on technical analysis as opposed to fundamental analysis, but the skew becomes steadily reversed as the length of horizon considered is extended. Technical analysis is considered slightly more useful in forecasting trends than fundamental analysis, but significantly more useful in predicting turning points. Interest rate-related news is found to be a relatively important fundamental factor in exchange rate forecasting, while moving average and/or other trend-following systems are the most useful technical technique.”

- Sweeney (1986, 1988): statistically significant returns, before costs, from Alexander filter
- Gernaey (1990) finds opposite
- Curcio and Goodhart (1991) chartist software does not improve trading—and students do as well as pros
– many others claim success—incl Sercu et al. (2006) on ERM
– conclusions?

    – publication bias: you can’t sell a paper saying “rule X does not work”
    – fishing bias: 1000 people do nothing but fishing for successful rules (in-sample)

– but may really be marginally profitable: mkts cannot be 100% efficient (Grossman and Stiglitz, 1980)
– Still, most CFOs don’t bother: they have better things to do
Trading Rules (2): Technical cont’d

– many others claim success—incl Sercu et al. (2006) on ERM
  – conclusions?

  – publication bias: you can’t sell a paper saying “rule X does not work”
  – fishing bias: 1000 people do nothing but fishing for successful rules (in-sample)
  – but may really be marginally profitable: mkts cannot be 100% efficient (Grossman and Stiglitz, 1980)
  – Still, most CFOs don’t bother: they have better things to do
What’s causing the bias?

An orthodox risk premium?

◊ **CAPM and beta:**
  – traditional unconditional beta: failure
  – conditional on things being panicky: yes

◊ **Beja pricing model** (cov with growth in marginal utility)
  Hollifield and Uppal (1997): GE model (Dumas (1992) and Uppal (1993)): RP tiny

◊ **Bansal (1997):** “CCAPM predicts $RP$ quadratic in $FP$”. Works in *his* sample

But: technical trading is short-term. Can risk change so fast, from day to day?
What’s causing the bias?

An orthodox risk premium?

◊ **CAPM and beta:**
  - traditional unconditional beta: failure
  - conditional on things being panicky: yes

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Markets need time to learn about new policies—Lewis (1989)
– but: all the time?

Dark Matter Theories: Peso risks, overreaction, career risks

1. Peso risk
– small probability of big event — easily missed by statistician
– negative $\gamma_1$?
– fluctuations in peso risk affect both $S(\downarrow)$ and $FP(\downarrow)$,
– but then $S$ picks up again, denying $F$’s forecast
– but: what’s the big event for floating currencies??
– untestable — indistinguishable from ‘seeing phantoms’

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– USD, DEM, CHF look respectable, safe, liquid, familiar
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Panicking steamroller effect
– whenever general panic, risky currencies plummet

“There’s nothing to predict, or profits are way to risky”
– assume $FP = -0.25\%$ 90d; so if $\gamma = -1$ then $E(\tilde{r} - r) = 0.5\%$
– but std $10\%\sqrt{1/4}$ so choose: $997.5 \pm 1005 \pm 2 \times 50$??
– but (Sercu et al., 2005) ERM game was low risk, hi SharpeRatio

Transaction costs; “extreme support” (Huisman et al, 1998)
– usually, $E(\tilde{s})$ small and fuzzy. Imperfections clog up picture
– but occasionally, $E(\tilde{s})$ is big $\rightarrow FP$ does react
– so: look at subsample with big $FP$s, and find higher beta
– but: $r$, $r^*$ sticky while $S$ isn’t: why doesn’t $S$ change iso $FP$?
– hi $FP$ may reflect hi $RP$ instead of hi $E()$
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What’s causing the bias? cont’d

Statistical flaws in the tests
– \( FP \) close to unit root \( \Rightarrow \) \( SE(\gamma_1) \gg \) what SPSS tells us
– but: doesn’t explain why \( \gamma_1 \) is low on average

Schizofrenic markets?
– portfolio managers are really marginal players, in FX mkts
– traders dominate, and play intraday, so ignore interest
– so \( E(\tilde{s}) \approx 0 \) all the time?
– if so, \( \Delta FP \) reflects \( \Delta RP \) or so, and \( \gamma_1 = 0 \).
Outline

Can we Explain/Predict Exchange Rates?

P. Sercu,
*International Finance: Putting Theory to Practice*

- $F$ as predictor
- Forecasts by Specialists
  - Central Banks
  - Professional Traders and Forecasters

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  F &= 1.50 & S &= 1.52 \\
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- **high turnover:** half-life 10 minutes (stocks: 1 week)

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  - after a purchase (sale), prices do not rise (fall) significantly
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Why do pros always know all?

Professionals can always explain

Hopper (1997): *No matter which way currencies zig or zag, it seems there is always an analyst with a quotable, ready explanation. Either interest rates are rising faster than expected in some country, or the trade balance is up or down, or central banks are tightening or loosening their monetary policies.*

How to become guru

1. Check which way the market went today
2. Run down the list of news items, and tick any bit that fits
   ¡¡Carefully ignore any news that does not!!
3. If unsuccessful at Step 2, select a conventional old-hat story:
   “The Euro again suffered from the sclerosis in Old Europe's labor markets.”
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**Check what traders are watching:**

**Theme of the Week - January 6, 2008 to January 11, 2008**

**Euro Gains vs Dollar on Hawkish Trichet and Dovish Bernanke:** The pair climbed 100 pips following the hawkish tone of Trichet’s conference. The pair then extended these gains after Fed Chairman Bernanke, in a speech, said that the FOMC was ready to lower rates to offset “downside risk to growth” fueling speculation of a 50 basis point cut in the next meeting.

**German Data Weakens Euros:** Fundamental reports out of Germany showed retail sales declining by 1.3% and industrial production falling 0.9% in November. The news underscored forecasts of increases to both indicators and caused the Euro to weaken.

**Pound Falls Prior to BOE Announcement:** The Pound fell during Wednesday’s trading session following data showing consumer confidence is at a 10 month low.

### Previous Week’s Recap

<table>
<thead>
<tr>
<th>Region</th>
<th>EST</th>
<th>Indicator</th>
<th>Actual</th>
<th>Forecasted</th>
<th>Previous</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ</td>
<td>4:45pm</td>
<td>Trade Balance</td>
<td>-0.55%</td>
<td>-0.47%</td>
<td>-0.72%</td>
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<tr>
<td>JPN</td>
<td>6:50pm</td>
<td>Monetary Base x/y</td>
<td>0.4%</td>
<td>1.0%</td>
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</table>

### Next Week’s Outlook

<table>
<thead>
<tr>
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<th>Forecasted</th>
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</tr>
</thead>
<tbody>
<tr>
<td>SWZ</td>
<td>1:45pm</td>
<td>Unemployment Rate</td>
<td>2.6%</td>
<td>2.5%</td>
<td>2.6%</td>
</tr>
<tr>
<td>EAU</td>
<td>4:30am</td>
<td>Saxo Bank’s Investor Confidence</td>
<td>105</td>
<td>105</td>
<td>119</td>
</tr>
<tr>
<td>EAU</td>
<td>5:00am</td>
<td>Producer Price Index m/m</td>
<td>0.8%</td>
<td>0.7%</td>
<td>0.4%</td>
</tr>
<tr>
<td>EAU</td>
<td>5:00am</td>
<td>Consumer Confidence</td>
<td>81</td>
<td>81</td>
<td>81</td>
</tr>
<tr>
<td>EAU</td>
<td>5:00am</td>
<td>Foreign Sovereign Indicator</td>
<td>104.7</td>
<td>104.3</td>
<td>104.6</td>
</tr>
<tr>
<td>EAU</td>
<td>5:00am</td>
<td>Industrial Confidence</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>EAU</td>
<td>5:00am</td>
<td>Business Climate Indicator</td>
<td>0.1%</td>
<td>0.9%</td>
<td>1.04%</td>
</tr>
<tr>
<td>EAU</td>
<td>5:00am</td>
<td>Unemployment Rate</td>
<td>7.2%</td>
<td>7.2%</td>
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</tr>
<tr>
<td>AUG</td>
<td>5:30pm</td>
<td>Construction PMI</td>
<td>59.2</td>
<td>59.2</td>
<td>59.2</td>
</tr>
<tr>
<td>UK</td>
<td>7:01pm</td>
<td>BBC Retail Sales x/y</td>
<td>0.3%</td>
<td>0.8%</td>
<td>1.2%</td>
</tr>
<tr>
<td>AUG</td>
<td>7:30pm</td>
<td>Building Approvals</td>
<td>8.9%</td>
<td>0.2%</td>
<td>-3.0%</td>
</tr>
</tbody>
</table>

### Monday, January 07 | Market Highlights

<table>
<thead>
<tr>
<th>Region</th>
<th>EST</th>
<th>Indicator</th>
<th>Actual</th>
<th>Forecasted</th>
<th>Previous</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ</td>
<td>4:45pm</td>
<td>Trade Balance</td>
<td>-0.55%</td>
<td>-0.47%</td>
<td>-0.72%</td>
</tr>
<tr>
<td>JPN</td>
<td>6:50pm</td>
<td>Monetary Base x/y</td>
<td>0.4%</td>
<td>1.0%</td>
<td></td>
</tr>
</tbody>
</table>

### Video Recap

- Trade Balance
- Monetary Base x/y

### Nilsson’s Commentary

- Trade Balance
- Monetary Base x/y

---

**What clues can gurus invoke?**

**Check what traders are watching:**

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</thead>
<tbody>
<tr>
<td>SWZ</td>
<td>1:45pm</td>
<td>Unemployment Rate</td>
<td>2.6%</td>
<td>2.6%</td>
<td>2.6%</td>
</tr>
<tr>
<td>EAU</td>
<td>4:30am</td>
<td>Saxo Bank’s Investor Confidence</td>
<td>105</td>
<td>105</td>
<td>119</td>
</tr>
<tr>
<td>EAU</td>
<td>5:00am</td>
<td>Producer Price Index m/m</td>
<td>0.8%</td>
<td>0.7%</td>
<td>0.4%</td>
</tr>
<tr>
<td>EAU</td>
<td>5:00am</td>
<td>Consumer Confidence</td>
<td>81</td>
<td>81</td>
<td>81</td>
</tr>
<tr>
<td>EAU</td>
<td>5:00am</td>
<td>Foreign Sovereign Indicator</td>
<td>104.7</td>
<td>104.3</td>
<td>104.6</td>
</tr>
<tr>
<td>EAU</td>
<td>5:00am</td>
<td>Industrial Confidence</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>EAU</td>
<td>5:00am</td>
<td>Business Climate Indicator</td>
<td>0.1%</td>
<td>0.9%</td>
<td>1.04%</td>
</tr>
<tr>
<td>EAU</td>
<td>5:00am</td>
<td>Unemployment Rate</td>
<td>7.2%</td>
<td>7.2%</td>
<td>7.2%</td>
</tr>
<tr>
<td>AUG</td>
<td>5:30pm</td>
<td>Construction PMI</td>
<td>59.2</td>
<td>59.2</td>
<td>59.2</td>
</tr>
<tr>
<td>UK</td>
<td>7:01pm</td>
<td>BBC Retail Sales x/y</td>
<td>0.3%</td>
<td>0.8%</td>
<td>1.2%</td>
</tr>
<tr>
<td>AUG</td>
<td>7:30pm</td>
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<tr>
<td>NZ</td>
<td>4:45pm</td>
<td>Commodity Price Index (ANZ)</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
Can we Explain/Predict Exchange Rates?

P. Sercu, *International Finance: Putting Theory to Practice*

F as predictor
Forecasts by Specialists

What to take home?
Why do pros always know all?
Why do we know so little?
Can we still trust/use the fwd rate?

Reader’s Digest

<table>
<thead>
<tr>
<th>Economic Activity</th>
<th>Employment</th>
<th>Construction, housing</th>
<th>Retail sales, cons. credit</th>
<th>Ind prod, inventories, orders, GDP</th>
<th>Commodity prices</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>economic activity (observed)</td>
<td>5</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>expectations, confidence, sentiment</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>25</td>
</tr>
</tbody>
</table>

You’ll always find something
Reader’s Digest

<table>
<thead>
<tr>
<th>Economic Activity</th>
<th>Observations</th>
<th>Factor</th>
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<tbody>
<tr>
<td>Employment</td>
<td>5</td>
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<td></td>
</tr>
<tr>
<td>Commodity prices</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>25</strong></td>
<td></td>
</tr>
</tbody>
</table>

| Expectations, confidence, sentiment    | 10           |        |
| Trade balance                          | 6            |        |
| CPI, WPI or TPI                        | 4            |        |
| Interest rates                          | 3            |        |
| Money supply                           | 2            |        |

You’ll always find something
Why do we know so little?

- the myth of a logical model. Hopper:

> Whatever the explanations, the underlying belief is that exchange rates are affected by fundamental economic forces, such as money supplies, interest rates, real output levels, or the trade balance, which, if well forecasted, give the forecaster an advantage in predicting the exchange rate.

(...) exchange economists ... tell very cogent stories ... often based on plausible economic assumptions or models. These economists hope that market participants will act on their forecasts and trade currencies.

- ... while, in reality,

  ▶ There is no obvious core story, unlike for stocks (earnings, dividends, interest rates, risk)
  ▶ guru may just spin tales to make us trade—like consultants inventing strategic threats?
Why do we know so little?

The myth of homogenous expectations, representative investors.

Evans (2002): a heterogenous-information structure

... permits the existence of an equilibrium distribution of transaction prices at a point in time. I develop and estimate a model of the price distribution using data from the Deutsche mark/dollar market that produces two striking results:

1. Much of the short-term volatility in exchange rates comes from sampling the heterogeneous trading decisions of dealers in a distribution that, under normal market conditions, changes comparatively slowly;

2. Public news is rarely the predominant source of exchange rate movements over any horizon.
Why do we know so little?

Even if there were a model, we would still need to be able to

- forecast future exogenous variables, and
- figure out to what extent others thunk the same
  - if so, it’s probably already in the price
  - if not, are we just imagining things?
Can we still trust/use the fwd rate?

- formal models of risk premia fail to explain the excess return

- but: does that mean the world is wrong, or the model?

My rule:

- the forward rate is the expected future spot rate corrected for any risks the market thinks to be relevant.

- If we want to maximize shareholder wealth, we should accept the market’s way of pricing too.