Part III
Exchange Risk, Exposure, and Risk Management
Can we Explain/Predict Exchange Rates?

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

Overview

Chapter 10

Do We Know What Makes Forex Markets Tick?
Overview

Behavior of spot rates
Log Xrates
Changes in Log Xrates

PPP—the behavior of the Real Exchange Rate
Concepts and issues
Computations and Findings
Concluding Discussion

Exchange Rates and Economic Policy
The Monetary Model
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   - understandable?
     - economic models: PPP, Monetary Approach, Real Business Cycle, Taylor

2. Are exchange rate changes ...
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     - univariate time-series models
     - economic models
     - (next chapter:)
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     - professional forecasters
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Data used in this chapter (rates for USD):

Country coverage:

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**ZAR, THB, INR, BRL**

**ZAR/USD**

**THB/USD**

**INR/USD**

**BRL/USD**
Outline

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Why logs? Four related properties:

- **from** $-\infty$ **to** $+\infty$

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- de-exponentialises the variable

- symmetry of doubling v halving: change of sign
- symmetry of GBP/USD and USD/GBP: change of sign
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\end{array} \]

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logs of levels: daily, monthly

### Table 10.1: Descriptive Statistics on Spot Rates (1): Logs of Levels

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#### Monthly logs of levels

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**Key**

- Nobs: number of observations; avg: average; var: variance; skew: skewness; krt: (excess) kurtosis; $\rho_l$: autocorrelation coefficient for lag $l$; Q: Box-Ljung statistic on the sum of the $\rho$'s, against the null of a zero sum; ADF: Augmented Dickey-Fuller statistic for the null of no mean reversion (i.e. a unit root). See the TekNotes for definitions. The critical values for the ADF with an intercept, at 5 (1) percent, are $-2.88$ ($-3.45$), and those for the Box-Ljung $\chi^2(5)$ are 11 (15). Table kindly provided by R. H. Badrinath.

**Concl:** in $\ln S_t = (1 - \rho_{1,S})E(S) + \rho_{1,S}\ln S_{t-1} + e_t$, ... the weight for the unconditional mean is zero. This looks like a martingale (except for BRL).
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### logs of levels: daily, monthly

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**Concl:** in \( \ln S_t = (1 - \rho_{1,S})E(S) + \rho_{1,S} \ln S_{t-1} + e_t \), ... the weight for the unconditional mean is zero. This looks like a martingale (except for BRL).
Changes in logs of levels: properties

Diamonds:

1. **linked to simple returns:**

\[
\ln S_T - \ln S_t = \ln \left( \frac{S_T}{S_t} \right) = \ln \left( 1 + \frac{S_T}{S_t} - 1 \right)
\]

- Contcomp return
- Simple return

2. **numerically close to simple returns if changes are small:**

<table>
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<tr>
<th>Simple</th>
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3. **additive over time:**

First-period return:

\[
\ln S_{t+1} - \ln S_t = \ln S_{t+1} - \ln S_t + \ln S_t - \ln S_{t-1}
\]

⇒ Annualise e.g. monthly means and variances by \( \times 12 \)

4. **not additive across assets (e.g. portfolio return)**
Can we Explain/Predict Exchange Rates?

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

### Changes in logs of levels: properties

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Log Xrates
Changes in Log Xrates
PPP—the behavior of the RER
Exchange Rates and Economic Policy

Interpreting 1st-order $\rho$ for returns

**for well-behaved variables, $\rho$ is below 1 and above $-1$**

If $x_t = \pm x_{t-1} + e_t$ then $\text{var}(x) = \text{var}(x) + \text{var}(e)$ so either $\text{var}(e) = 0$ or $\text{var}(x) = \infty$.

**interpreting $0 < \rho_1 < 1$ (momentum / regression towards mean):**

$$\tilde{s}_{t,t+1} \equiv \mathbb{E}_t(\tilde{s}_{t,t+1}) + \tilde{\epsilon}_{t,t+1}$$

$$\approx FP_{t,t+1} + RP_{t,t+1} + \tilde{\epsilon}_{t,t+1}.$$ 

- Slow changes in forward premia
- Waves in the risk premium
- Inefficiencies: predictable errors
  - Bandwagon effects
  - Slow dissemination of information

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Interpreting 1st-order $\rho$ for squared returns

The conditional expected squared return is essentially the conditional variance:

$$\tilde{s}_t = \mathbb{E}_{t-1}(\tilde{s}_t) + \tilde{\epsilon}_t,$$

$$\Rightarrow \tilde{s}_t^2 = \mathbb{E}_{t-1}(\tilde{s}_t)^2 + \mathbb{E}_{t-1}(\tilde{s}_t)\tilde{\epsilon}_t + \tilde{\epsilon}_t^2,$$

$$\approx \tilde{\epsilon}_t^2;$$

$$\Rightarrow \mathbb{E}_{t-1}(\tilde{s}_t^2) \approx \mathbb{E}_{t-1}(\tilde{\epsilon}_t^2) =: \text{var}_{t-1}(\tilde{s}_t).$$

(1)

So $\delta > 0 (< 0)$ signals momentum/mean-reversion (oscillation) in uncertainty:

If $\epsilon_{t,t+1}^2 = \gamma + \delta \epsilon_{t-1,t}^2 + \nu,$

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Changes in logs of levels: daily, monthly

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Is it lack of statistical power?

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So why do we fail to see much of that mean-reversion?

◊ **Is it lack of statistical power?**
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   ▶ Panel tests: Sweeney (2006) finds mean-reversion
   ▶ Cleverer models: let $\kappa$ (in $E_t(\tilde{S}_{t,t+1}) = \kappa [E(\ln \tilde{S}) - \ln S_t] + ...$ depend on $[E(\ln \tilde{S}) - \ln S_t]$.

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   Is it reasonable to work with a constant attractor? PPP says no.
Discussion of near-martingale behavior

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Can we Explain/Predict Exchange Rates?

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

Behavior of spot rates
Log Xrates
Changes in Log Xrates

PPP—the behavior of the RER
Exchange Rates and Economic Policy

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# Outline

Can we Explain/Predict Exchange Rates?

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

<table>
<thead>
<tr>
<th>Behavior of spot rates</th>
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<td>Computations and Findings</td>
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<td>The Monetary Model</td>
</tr>
<tr>
<td>Computations and Findings</td>
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</tbody>
</table>
A respectably old idea

The $\text{PPP}$ rate is the notional exchange rate that would equalize the price levels $\Pi$ internationally:

$$\hat{S}_t^{\text{PPP}} = \frac{\Pi_t}{\Pi_t^*}.$$  

School of Salamanca (1400s), G Cassel (1918): actual Xrates tend to equalize price levels, or Real XRates are attracted towards unity.
PPP Issue 1: no series of price-level data

Patchy data on genuine price *levels* for a *given* packages:
- WB/OECD survey 1980s (¿30? countries, ¿300? goods)
- IMF survey 2007 (195 countries, 3000 goods)
  Note: issue of composition of package; heterogenous countries (China)

... so we use CPIs as stand-ins:

\[
\begin{align*}
\Pi_t & \approx k I_t, \\
\Pi_t^* & \approx k^* I_t^*,
\end{align*}
\]

\[\Rightarrow \hat{S}_t^{PPP} \approx \frac{k I_t}{k^* I_t^*} =: \alpha \frac{I_t}{I_t^*}.\]

Implications:
- \(\alpha\) unknown, so all we can test is relative PPP.
- issue of heterogenous bundles as source of deviations
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PPP Issue 2: effects of non-tradables

Balassa-Samuelson Effect: DCs cheaper
– productivity of (industrial) labor is lower in DC
– so tradables relatively expensive, nontradables relatively cheap
– tradable prices roughly equalized across countries
– so in DC nontradables absolutely cheap

Example:

<table>
<thead>
<tr>
<th></th>
<th>hours needed for haircut</th>
<th>plough</th>
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<tbody>
<tr>
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<td>1</td>
</tr>
<tr>
<td>Emerging</td>
<td>1</td>
<td>4</td>
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</tbody>
</table>

Haircut costs 1 plough or 20 dollar
Haircut costs 1/4 plough or 5 dollar

\[
S_t \frac{\Pi^*(P_0^*, P_1^*)}{\Pi(P_0, P_1)} = S_t \frac{w^*P_0^* + (1 - w^*)P_1^*}{wP_0 + (1 - w)P_1},
\]

\[
= S_t \frac{P_1^*}{P_1} \times \frac{w^*[P_0^*/P_1^*] + (1 - w^*)}{w[P_0/P_1] + (1 - w)},
\]

\[
= \frac{w^*[P_0^*/P_1^*] + (1 - w^*)}{w[P_0/P_1] + (1 - w)} < 1 \text{ as } w^* < w, \; [\ast] < \square.
\]
PPP Issue 2: effects of non-tradables

Balassa-Samuelson Effect: DCs cheaper

- productivity of (industrial) labor is lower in DC
- so tradables *relatively* expensive, nontradables *relatively* cheap
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- so in DC nontradables *absolutely* cheap

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Graphs (1)

Concluding Discussion

Concepts and issues

Computation and findings

Exchange rates and economic policy

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PPP—the behavior of the RER

note: $\Delta \ln = 1 \iff \Delta x/x = 170\%$
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Comments on graphs

Procedure:

– set $\alpha$ such that avg(RER) = 1 in first 10 years
– plot $S$ against $\alpha P^*/P$

Findings:

➤ RPPP rates smoother/less volatile
  (but still unpredictable martingales)

➤ $S$ very loosely follows RPPP rate

➤ but sudden reversals, often in short periods

➤ big and persistent deviations in medium run
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<th>Nobs</th>
<th>avg</th>
<th>var</th>
<th>skew</th>
<th>krt</th>
<th>ρ1</th>
<th>ρ2</th>
<th>ρ3</th>
<th>ρ4</th>
<th>ρ5</th>
<th>Q</th>
<th>ADF</th>
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<tbody>
<tr>
<td>GBP</td>
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<td>0.04</td>
<td>1.49</td>
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<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
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<td>1.00</td>
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<td>0.99</td>
<td>0.99</td>
<td>2221</td>
<td>0.12</td>
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</table>

Log RPPP rates

<table>
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<tr>
<th></th>
<th>Nobs</th>
<th>avg</th>
<th>var</th>
<th>skew</th>
<th>krt</th>
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<th>ρ3</th>
<th>ρ4</th>
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<th>Q</th>
<th>ADF</th>
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<tbody>
<tr>
<td>GBP</td>
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<td>0.99</td>
<td>0.98</td>
<td>0.97</td>
<td>0.95</td>
<td>0.94</td>
<td>2094</td>
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</tr>
<tr>
<td>ZAR</td>
<td>443</td>
<td>-0.21</td>
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<td>-0.85</td>
<td>0.50</td>
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<td>0.97</td>
<td>0.96</td>
<td>0.94</td>
<td>0.92</td>
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<tr>
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<td>0.99</td>
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</table>

Log of actual over RPPP rates

<table>
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<tr>
<th></th>
<th>Nobs</th>
<th>avg</th>
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Key

The RPPP rates are computed from CPIs and rescaled such that their average over the first ten years matches that of the corresponding actual exchange rate. Nobs: number of observations; avg: average; var: variance; skew: skewness; krt: (excess) kurtosis; ρi: autocorrelation coefficient for lag i; Q: Box-Ljung statistic on the sum of the ρi’s, against the null of a zero sum; ADF: Augmented Dickey-Fuller statistic for the null of no mean reversion (i.e. a unit root). See the TekNotes for definitions. The critical values, in samples our size, for the ADF with an intercept, at 5 (1) percent, are about -2.88 (-3.45), and those for the Box-Ljung χ²(5) are 11 (15). Table kindly provided by R. H. Badrinath.

unsurprisingly, RPPP rate has high memory

surprisingly, RER looks like a martingale too
The numbers

Table 10.3: Descriptive Statistics on the Scaled RPPP Rate and the Real Rate (1): log levels

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<th>Log RPPP rates</th>
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Log of actual over RPPP rates

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Key: The RPPP rates are computed from CPIs and rescaled such that their average over the first ten years matches that of the corresponding actual exchange rate. Nobs: number of observations; avg: average; var: variance; skew: skewness; kurt: (excess) kurtosis; ρi: autocorrelation coefficient for lag i; Q: Box-Ljung statistic on the sum of the ρ’s, against the null of a zero sum; ADF: Augmented Dickey-Fuller statistic for the null of no mean reversion (i.e. a unit root). See the TecNotes for definitions. The critical values, in samples our size, for the ADF with an intercept, at 5 (1) percent, are about -2.88 (-3.45), and those for the Box-Ljung χ²(5) are 11 (15). Table kindly provided by R. H. Badrinath.

- unsurprisingly, RPPP rate has high memory
- surprisingly, RER looks like a martingale too
Concluding Discussion (1): Statistical issues

– short periods, simplistic models, or inefficient tests?
– PPP force must still be puny. Economics behind this?

1. Statistical issues
– earlier tests, monthly post-BW: Roll, Adler-Lehman, Sercu, Abuaf-Jorion
– same conclusions

◊ Longer periods
– Abuaf-Jorion: 100 yrs annual data. Lothian and Taylor: 200 yrs
– half-lifes of 3-6 yrs
– illustration of power issue: 20-yr subsample tests all end agnostic

◊ Panels

◊ Nonlinear models
– ESTAR: Taylor et al. (2001); Kilian and Taylor (2003)
– De Grauwe and Grimaldi (2001): PPP effect for hi-infl countries only

◊ Choice of indices
– Tradeables index v WPI v CPI: declining PPP effect
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**Economic Story (1)**

- **nontradables**
  - obviously increases scope for RPPP deviations
  - but can this create systematic yoyo-ing?
  - this is not Balassa-Samuelson: we use RPPP data, and TS not CS
  - what else? different weights & inflation rates, changing structures?

- **Relative price effects**
  - rising relative price of services, combined with different weights

**Example: assume CPP and constant nominal rate**

Let US $w_s = 0.75$, China $w_s^* = 0.40$. Services inflation 50%, goods 20%

- US inflation $= 0.75 \times 0.50 + 0.25 \times 0.20 = 0.425$,
- China’s inflation $= 0.40 \times 0.50 + 0.60 \times 0.20 = 0.320$.

$\Rightarrow$ 10% deviation from RPPP even though assumedly CPP holds.

- **Economic development**
  - JP went from DC to top league
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Concepts and issues

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nltraladables

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Economic Story (2): imperfections

- transaction costs
- Non-tariff Barriers
- Non-pecuniary costs (hassle; cont(r)act with dealer)
- Price rigging/differentiation by monopolists
- Sticky prices combined with volatile Xrates
- Entry costs for professional arb-traders
  – goes up with volatility (Krugman)
Outline

Can we Explain/Predict Exchange Rates?

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Behavior of spot rates
- Log Xrates
- Changes in Log Xrates

PPP—the behavior of the Real Exchange Rate
- Concepts and issues
- Computations and Findings
- Concluding Discussion

Exchange Rates and Economic Policy
- The Monetary Model
- Computations and Findings
Exchange Rates and Economic Policy

– grandfather approach: monetary model (macro)
– more recent (and more financial?): Taylor-rule models

Key equation:

$$S_t = \frac{E_t(\tilde{S}_{t+1})(1 + r_{t,t+1}^*)}{1 + r_{t,t+1} + RP_{t,t+1}};$$

$$\Rightarrow \ln S_t \approx E_t(\ln \tilde{S}_{t+1}) + \ln(1 + r_{t,t+1}^*) - \ln(1 + r_{t,t+1}).$$

Comments:

– this is macro: \(\ln[E(\tilde{S})]=E[\ln(\tilde{S})]\) and \(RP_{t,t+1} = 0\)??

– weak starting point: the interest differential is an awful predictor of the future spot rate

– but let’s suspend disbelief
Exchange Rates and Economic Policy

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– but let’s suspend disbelief
The Monetary Model

Notation: $L_s = \text{money supply}$, $Y = \text{real volume of transactions per period}$, $v = \text{the velocity of the money}$.

Long-run expectations model
– Quantity theory: in $v := \frac{Y \cdot \Pi}{L}$ we assume $v$ is exogenous.

$$\Pi = v \frac{L}{Y} \text{ and } \Pi^* = v^* \frac{L^*}{Y^*}.$$ 

– PPP: 

$$\hat{S}^{PPP} = \frac{\Pi}{\Pi^*} = \frac{\frac{v}{Y} \frac{L}{Y}}{\frac{v^*}{Y^*} \frac{L^*}{Y^*}} = \frac{v}{v^*} \frac{L}{L^*} \frac{Y}{Y^*}.$$ 

What’s good news for a currency? Long-run spot value of a foreign currency rises, c.p., with
– slower money-supply growth abroad (less inflation abroad)
– higher real growth abroad (more money demand, prices fall)
The Monetary Model, cont’d

Setting the current spot price

\[ S_t = \frac{(1 + r_{t,T}^*) \frac{v^*}{v} \frac{L_s^*}{L_s} \frac{Y^*}{Y}}{1 + r_{t,T}}, \text{ where } T - t \text{ is “the long run”.} \quad (3) \]

What drives spot value of a foreign currency?

– any rumour that has implications about the country’s long-run inflation rates [-] and economic healths [+]

– long-run interest rates at home [-] and abroad [+]

Testable version

– assume that \( E_t(X_T) = a + bX_t \), or similar for changes

– empirical disaster (Meese and Rogoff “disconnect” puzzle)
The Monetary Model, cont’d

Setting the current spot price

$$S_t = \frac{(1 + r^*_{t,T}) \frac{v^*}{v} \frac{L^*_s}{L^*_s} \frac{Y^*}{Y}}{1 + r_{t,T}}, \text{ where } T - t \text{ is “the long run”}. \quad (3)$$

What drives spot value of a foreign currency?

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Graphs (1)

note: $\Delta \ln = 1 \Leftrightarrow \Delta x/x = 170\%$

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---

USD/ZAR

USD/THB

USD/INR

USD/BRL
Comment on graphs
Comment on graphs

bizarre
Numbers (1)

Table 10.5: Descriptive Statistics on the Monetary Model of the Exchange Rate (1): Logs of Levels, Quarterly

| Nobs | avg | var | skew | kurt | ρ₁ | ρ₂ | ρ₃ | ρ₄ | ρ₅ | Q | ADF | ρ₁ | ρ₂ | ρ₃ | ρ₄ | ρ₅ | Q |
|------|-----|-----|------|------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| GBP  | 77  | 0.49| 0.01| 0.30| 2.30| 0.78| 0.64| 0.48| 0.39| 0.28| 94.1| -2.73| 0.53| 0.36| 0.05| -0.02| -0.07| 60.8|
| DEM  | 144 | -0.73| 0.06| -0.60| 2.44| 0.93| 0.87| 0.80| 0.73| 0.64| 444.4| -2.65| 0.89| 0.78| 0.69| 0.60| 0.51| 384.3|
| JPY  | 137 | -5.10| 0.15| -0.29| 1.51| 0.96| 0.92| 0.88| 0.84| 0.80| 530.9| -1.42| 0.87| 0.78| 0.70| 0.62| 0.53| 385.0|
| ZAR  | 136 | -0.76| 0.77| -0.13| 1.64| 0.97| 0.94| 0.92| 0.89| 0.86| 606.4| -0.56| 0.97| 0.95| 0.92| 0.88| 0.85| 617.8|
| THB  | 45  | -3.54| 0.05| 0.50| 1.45| 0.91| 0.83| 0.73| 0.66| 0.59| 148.3| -1.14| 0.77| 0.70| 0.65| 0.53| 0.45| 117.0|
| BRL  | 44  | 0.89| 9.04| 1.77| 4.73| 0.88| 0.77| 0.66| 0.55| 0.44| 126.6| -3.01| 0.84| 0.67| 0.51| 0.37| 0.25| 94.5 |
| INR  | 146 | -3.82| 0.00| -0.03| 1.80| 0.85| 0.69| 0.58| 0.46| 0.34| 44.6 | -1.81| 0.63| 0.27| 0.03| -0.18| -0.42| 43.7 |

Log of actual over proposed attractor, \( \frac{\log Y}{\bar{Y}} \)

| GBP  | 77  | -0.03| 0.01| 0.60| 2.33| 0.88| 0.79| 0.72| 0.65| 0.59| 236.6| -2.72| 0.66| 0.55| 0.27| 0.16| -0.04| 69.8 |
| DEM  | 144 | 0.23| 0.09| -0.17| 2.06| 0.95| 0.91| 0.85| 0.79| 0.73| 508.2| -2.06| 0.92| 0.82| 0.73| 0.61| 0.51| 408.3|
| JPY  | 137 | 0.79| 0.97| 0.18| 2.52| 0.94| 0.91| 0.91| 0.91| 0.85| 590.1| -1.89| 0.72| 0.61| 0.64| 0.67| 0.43| 330.8|
| ZAR  | 136 | -0.90| 0.60| -0.14| 1.69| 0.97| 0.94| 0.92| 0.89| 0.86| 606.9| -0.66| 0.97| 0.94| 0.90| 0.86| 0.82| 590.0|
| THB  | 45  | -0.25| 0.10| -0.06| 1.61| 0.93| 0.85| 0.80| 0.77| 0.70| 179.1| -0.28| 0.69| 0.38| 0.26| 0.25| 0.05| 39.7 |
| BRL  | 44  | -0.77| 1.27| 1.54| 6.39| 0.76| 0.55| 0.39| 0.16| -0.02| 66.5 | -5.21| 0.69| 0.37| 0.19| 0.04| -0.04| 35.8 |
| INR  | 146 | 0.03| 0.00| 0.02| 2.79| 0.64| 0.34| 0.47| 0.62| 0.28| 23.5 | -1.58| 0.33| -0.28| -0.11| 0.12| -0.09| 7.3 |

Key: Quarterly data. Nobs: number of observations; avg: average; var: variance; skew: skewness; kurt: (excess) kurtosis; \( \rho \): autocorrelation coefficient for \( l \) lag; Q: Box-Ljung statistic on the sum of the \( \rho \)'s, against the null of a zero sum; ADF: Augmented Dickey-Fuller statistic for the null of no mean reversion (i.e., a unit root). See the TekNotes for definitions. The constant \( \omega \) in the attractor is set so as to equalize the means of attractor and actual rate over the first ten years. Table kindly provided by Fang Liu.

Conclusion: model is a sorry joke (unless you’re dead)

- variance of ‘residuals’ is even worse than of raw \( S \) — except BRL
- autocorrelation of ‘residuals’ is even worse than of raw \( S \) — except: INR (where corr is wrong, though), BRL
Table 10.6: Descriptive Statistics on the Monetary Model of the Exchange Rate (1): Changes of Logs, Quarterly

<table>
<thead>
<tr>
<th>Nobs</th>
<th>avg (%)</th>
<th>var (%)</th>
<th>skew</th>
<th>kurt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ρ1</td>
<td>ρ2</td>
<td>ρ3</td>
<td>ρ4</td>
</tr>
<tr>
<td>GBP</td>
<td>65</td>
<td>0.18</td>
<td>0.28</td>
<td>-1.00</td>
</tr>
<tr>
<td>DEM</td>
<td>143</td>
<td>0.56</td>
<td>0.30</td>
<td>-0.23</td>
</tr>
<tr>
<td>JPY</td>
<td>136</td>
<td>0.75</td>
<td>0.38</td>
<td>-0.50</td>
</tr>
<tr>
<td>ZAR</td>
<td>135</td>
<td>-1.49</td>
<td>0.45</td>
<td>-0.08</td>
</tr>
<tr>
<td>THB</td>
<td>44</td>
<td>-0.83</td>
<td>0.40</td>
<td>-1.05</td>
</tr>
<tr>
<td>BRL</td>
<td>43</td>
<td>-16.95</td>
<td>9.63</td>
<td>-1.42</td>
</tr>
<tr>
<td>INR</td>
<td>145</td>
<td>-0.12</td>
<td>0.04</td>
<td>-0.36</td>
</tr>
</tbody>
</table>

Key: Quarterly data. Nobs: number of observations; avg: average; var: variance; skew: skewness; kurt: (excess) kurtosis; ρ: autocorrelation coefficient for lag l; Q: Box-Ljung statistic on the sum of the ρ’s, against the null of a zero sum; ADF: Augmented Dickey-Fuller statistic for the null of no mean reversion (i.e. a unit root). See the TekNotes for definitions. The constant ω in the attractor is set so as to equalize the means of attractor and actual rate over the first ten years. For the changes of logs, mean and variance are in percent. Table kindly provided by Fang Liu.

Conclusion: model is a sorry joke (unless you’re dead)

– variance of ‘residuals’ is much worse than of raw ΔS—even for BRL and INR
Cheung, Chinn, and Pascual (2002) survey all models, and ... “the results do not point to any given model/specification combination as being very successful. On the other hand [...] it may be that one model will do well for one exchange rate, and not for another.”

Hopper (1997) 
“[...] exchange rates don’t seem to be affected by economic fundamentals in the short run. Being able to predict money supplies, central bank policies, or other supposed influences doesn’t help forecast the exchange rate.”

Frankel and Rose:  
“Exchange rates are difficult to forecast at short- to medium-term horizons. There is a bit of explanatory power to monetary models such as the Dornbusch ‘overshooting’ theory, in the form of reaction to ‘news’ and in forecasts at long-run horizons. Nevertheless, at short horizons, a driftless random walk characterizes exchange rates better than standard models based on observable macroeconomic fundamentals.”

Faust and Rogers (2001) 
“the overshooting cannot be driven by Dornbusch’s mechanism”.
EconPolicy Models: Concluding discussion

Can we Explain/Predict Exchange Rates?

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Behavior of spot rates
PPP—the behavior of the RER

Exchange Rates and Economic Policy
The Monetary Model
Computations and Findings

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**EconPolicy Models: Concluding discussion**

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Faust and Rogers (2001)
“the overshooting cannot be driven by Dornbusch’s mechanism”.
What’s wrong?

Rogoff:

"Among rational economists, the debate is over whether the glass is 5% full or 95% empty”.


  Cheung and Chinn (1998) and Berkowitz and Giorgianni (2006): No – inconsistencies w.r.t. cointegration

– **selective reporting (or luck?),**

– **bad data (revisions!)**

– **missing features?**— bubbles, sentiment, micro foundations, Carter and the Iran hostages. The A’dam Treaty, China’s entry into WTO, the crisis

– **changing fads:** current account, mon model, interest rates, Gt default risk