The Rand exchange rate – the fundamental truth

UN DESA/Project LINK meeting
23 October 2013
Agenda

• The challenge (problem)
• The quest (objective)
• The mechanics (methodology)
• The evidence (empirical results)
• A reality check: drilling deeper into the fundamentals
• Policy implications
The challenge – hero or zero

Nominal (actual) exchange rate

Temporary deviation vs. Fundamental adjustment?
A Note: South African exchange rate regime

- South Africa has a *floating* exchange rate system.
  - SARB only a market agent: buying/selling currencies
  - Objective: accumulation of foreign reserves, i.e. should be seen as *management of international liquidity*, not *exchange rate policy*.

- South Africa’s floating exchange rate regime has been an important absorber of shocks, enabling the economy to adjust in the face of the global financial crisis.
The quest

• Structural exchange rate model:
  – To determine and model the true or fundamental level and direction of the Rand exchange rate, taking into consideration structural and/or long-term drivers of the exchange rate.
  – A complicated issue given its multi-dimensional nature. Both domestic factors and external international events impact on the rand’s value – some causing the currency to temporarily deviate from its true path and some causing a fundamental adjustment in the exchange rate.

• Exchange rate barometer:
  – The objective is to extend on the standard methodologies such as purchasing power parity (PPP) and the Dornbusch model, and develop an “Exchange Rate Barometer” as an analytical tool/instrument that econometrically determines the degree of over- or undervaluation in the rand by utilising structural (fundamental) exchange rate estimation.
  – Policy tool/rule: industrial & trade policy; inflation rate targeting

• Other attempts (research)
  – More concerned about explaining/forecasting the volatility in the currency, rather than the long-run fundamental trend
  – Primarily utilising a range and combination of various Time-series techniques
The mechanics

• A sticky-price, Dornbusch-type monetary model specification to allow:
  – Integration of the current and capital accounts of the balance of payments.
  – Integration with domestic economy through consumer and production price structure

• A useful tool for exchange rate analysis:
  – Defines the role of speculation among the exchange rate determinants;
  – Gives a simple definition of the equilibrium exchange rate; and
  – Relates the equilibrium rate to the underlying instruments of monetary policy.
The mechanics

- The structural exchange rate model is integrated with a dynamic, full-sector macroeconometric model:
  - Production capacity, demand and business cycle trends, price adjustments, policy interventions and the impact of the rest of the world.
  - Understanding the extent and nature of the impact of various external and international events on the one hand, and inherent structural impediments of the domestic economy on the other.

- Generate the exchange rate barometer
  - Attempts to serve as a policy instrument by providing guidance and insights in distinguishing between short-run volatility and longer-run structural adjustment in the exchange rate.
The mechanics

- The model specification:

\[ e = (m - m_f) - \phi(y - y_f) - \lambda(\Pi - \Pi_f) \]

- The long-run exchange rate is therefore determined by relative money supplies (m), relative income levels (y) and relative inflation rates (\Pi).

- Various additional variables were introduced – without success. These variables included the budget deficit, the debt/GDP ratio, the price of oil and a gold price/oil price terms-of-trade type of variable.
Empirical results

SA Rand per US Dollar

Nominal (actual) exchange rate (lhs)
Fundamental exchange rate (lhs)
Empirical results

SA Rand per US Dollar

Nominal (actual) exchange rate (lhs) & Fundamental exchange rate (lhs)

Speculation & Global financial crisis
Empirical results

2001 – 2004: The speculation trigger

The rand tumbled from an average of R7.64 against the dollar in December 2000 to R11.55 in December 2001 – a 51 per cent depreciation (the weakest recorded price was R13.34 on 21 December 2001). South Africa’s low and deteriorating financial asset base made the rand especially vulnerable to short-run speculative activity.

The Exchange Rate Barometer indicates that since 1998 (at R4.80) the rand depreciated beyond the levels of its true (fundamental or structural) value. By December 2001 (at R11.55), the rand was undervalued by almost 70 per cent.

Supporting the analysis, the currency retraced its slump and by May 2003 the currency had fully recovered to levels of R7.60 and continued to strengthen to levels below R6.10 (November 2004) which, at the time, according to the Exchange rate Barometer was the fundamental or true value of the rand.
Empirical results

2007 – onwards: The global financial crisis trigger


General opinion holds that this collapse was fundamentally due to the global crisis, which on the back of uncertainties and risk aversion, led to capital flight from emerging economies to more secure investment havens (developed economies).

However, the Exchange Rate Barometer already signalled that the rand was overvalued at levels of approximately R7.00. The South African economy’s deteriorating competitiveness in terms of sustainable, poverty-alleviating and productive growth, is main reason for this. In addition to aggravating the inherent weakness of the currency, the global financial crisis acted as a trigger for the imminent correction which had to take place in adjusting the rand to its true or fundamental value.

The depreciation of the rand (48 per cent) was more severe than that of its BRICS counterparts (23 per cent) – the BRIC(S) currencies weakened by less than half of the rand’s loss in value. As a direct result of its domestic economic woes, South Africa was relatively less effective than other emerging economies in mitigating and escaping the international recessionary contagion.
Empirical results

Since the 2008 collapse, the rand regained the majority of its pre-slump value and averaged at levels of R7.20 and R7.30 for 2010 and 2011 respectively. However, while mainstream opinion holds that this recovery was a correction from an undervalued rand on the back of external and extraordinary global factors, the Exchange Rate Barometer contradicts this argument by indicating that the rand was in fact overvalued at levels below R8.30.
Empirical results

A fundamental shift

The analysis points to the fact that the rand has undergone a structural shift to a new and weaker true fundamental level since the global shock and is currently estimated to be in equilibrium, or have an ‘on par’ value of R8.50 for 2012.

The rand is overvalued at levels of R8.50 and below.

Source: Plus Economics
A reality check: Drilling deeper

1. Structural unemployment
   - NAWRU 23%, while ULC↑ and productivity↓
   - Socio-economic in nature
   - Implication: ↓ ‘employability’; ↓ productivity; ↓ growth potential (< 3.2%)

2. Structural inflation
   - Headline: 5.8%
   - ‘True’ inflation? (1% administered prices; 3% structural costs)
   - Implication: misinterpretation of inflation pressures?; too aggressive monetary prudence? ↓ firms investment & expansion

3. Institutional and productivity constraints
   - Lack of savings & FDI
   - Access to funding? (SMME’s)
   - Cost and ease of doing business?
   - Education & skills
   - Implementation capacity
   - Labour market rigidities (strong unionization; rigid labour legislation)
Limited labour absorption capacity

High unemployment

Growing population

Inbound migration
Growing labour force

Limited labour absorption capacity

Inadequate economic growth and limited job opportunities

Low levels of saving and investment

Low and inequitable income

HDI 121 (187)

Gini 0.7

Low living conditions

• Poverty
• Inadequate health, nutrition, housing and transport
• Crime & violence
• Poor education and access to social services

Skills shortages and mismatches

Inadequate economic growth and limited job opportunities

High unemployment

Low levels of saving and investment

Inadequate economic growth and limited job opportunities

Low and inequitable income

HDI 121 (187)

Gini 0.7

Limited labour absorption capacity

Low levels of saving and investment

Growing population

Inbound migration
Growing labour force

Grow ing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force

Growing population

Inbound migration
Growing labour force
Poverty Trap

Unemployment

Skills vacuum
- Shortage
- Mismatches

Lacking skills development
- Training of trainers
- In-job-training for the unemployed

Non-functional training incubator
- Education infrastructure
  - Schools
  - Tertiary institutions
- Corporate & State-owned enterprises training facilities

Enterprise constraints
- Lacking entrepreneurial skills
- Factor production intensity
- Production sector focus

Misdirected & inefficient political/policy environment
- Labour policy
- Industrial policy
- Trade policy
- Skills migration policy
- Education

Lacking International competitiveness
- FDI
- Skills migration
A skills & innovation trap

**Poverty Trap**
- Unemployment
- Skills vacuum
  - Shortage
  - Mismatches

**Lacking skills development**
- Training of trainers
- In-job-training for the unemployed

**Non-functional training incubator**
- Education infrastructure
  - Schools
  - Tertiary institutions
  - Corporate & State-owned enterprises training facilities

**Misdirected & inefficient Political/ Policy environment**
- Labour policy
- Industrial policy
- Trade policy
- Skills migration policy
- Education

**Corruption**
- 47% of South Africans believe a government official will ask for a bribe
- Rank (142 countries) 2013 2011
  - Macroeconomic environment
    - 95 55
  - Health & Education
    - 135 131
  - Labour market efficiency
    - 116 95
  - Higher education
    - 89 73

**Global Competitiveness**
- Ranking (142 countries)
  - 2013 2012
  - Doing business
    - 39 35
    - Starting a business
      - 53 44
    - Registering property
      - 79 76
    - Getting credit
      - 1 1
    - Protecting investors
      - 10 10
    - Paying taxes
      - 32 44
    - Trading across borders
      - 115 144
    - Enforcing contracts
      - 82 81
    - Getting electricity
      - 150 124

**Enterprise constraints**
- Lacking entrepreneurial skills
- Factor production intensity
  - Production sector focus

**Lacking International competitiveness**
- FDI
- Skills migration
Institutional and Legislative rigidities

- Limit growth and income potential
- Unemployment
- Poverty (poor socio-economic status)
- Under-utilisation of Labour resources
- Limited Infrastructure
- Limited Investment
- Limited Savings and Financial resources
- Limited Productivity
- Limited Skills & Innovation

3.6%
Policy implication

It is not a fuelling problem, but an engine-capacity issue