The Elephant Hiding in the Room: Currency Intervention and Trade Imbalances

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Trade Surpluses of the Largest Interveners
USD billions

Note: Aggregates for countries in the top decile of net official foreign assets to GDP in 2010.
Trade Surpluses of the Largest Interveners exc. China

USD billions

Note: Aggregates for countries in the top decile of net official foreign assets to GDP in 2010.

Current Account

Net Official Flows

Note: Aggregates for countries in the top decile of net official foreign assets to GDP in 2010.
• Current account, or trade, balance equals exports minus imports.

• Exports and imports are determined by prices, spending, productive capacity, and trade barriers at home and abroad, as well as the exchange rate.

• But prices, spending, the exchange rate, and some elements of productive capacity are themselves affected by exports and imports.
  o Complicated inter-causality at work.
  o Prices are not measured in a useful way (for this purpose).
• Current account balance (CAB) also equals the difference between saving and investment.

• Recent series of papers seeks to explain CABs over the medium to long run in terms of relatively exogenous factors:
  o Demographics
  o Fiscal policy
  o Wealth
  o Stage of economic development
  o Institutions
  o Other factors
• My contribution is to add government exchange rate policy as measured by currency intervention.

• A broad measure of currency intervention is net official flows (NOF) or government investment in foreign assets minus government borrowing in foreign markets.
  o Accumulation of foreign exchange reserves is the most important element of NOF.
Current Accounts and Net Official Flows
1986-2010 averages in percent of GDP
Current Accounts and Net Official Flows exc. Singapore

1986-2010 averages in percent of GDP
Current Accounts Moving with Net Official Flows
percent of GDP, 5-year moving averages

Egypt
Korea
Norway
Pakistan

- Current Account
- Net Official Flows
Current Accounts Not Moving with Net Official Flows
percent of GDP, 5-year moving averages

Brazil

India

South Africa

Sweden

Current Account
Net Official Flows
Controlling for Other Factors

\[
\text{CAB} = \text{NOF} + \text{NPF} + \text{ERR}
\]

\[
\text{NPF} = \lambda \times \text{NOF} + C \times X + u
\]

\[
\text{CAB} = (1+\lambda) \times \text{NOF} + C \times X + v
\]

CAB: Current Account Balance
NOF: Net Official Flows
NPF: Net Private Flows
ERR: Errors and Omissions
X: Exogenous Factors
But, NOF is not exogenous
Need Instrumental Variables

• Reasons for governments to buy foreign assets independent of stabilizing exchange rate in face of trade or financial shocks.
  
  o Lagged ratio of stock of foreign assets (reserves) to imports or short-term debt or GDP.

  o Natural resource sovereign wealth fund.

  o History of currency crisis—IMF program.
Regression Analysis

Baseline: 40 Countries, 5 5-year periods, 1986-2010

Alternates: 115 Countries, 25 annual obs., different instrumental variables, different X variables

Regress both equations:

\[ \text{NPF} = \lambda \times \text{NÔF} + C \times X + u \]

\[ \text{CAB} = (1+\lambda) \times \text{NÔF} + C \times X + v \]
<table>
<thead>
<tr>
<th>Baseline Results</th>
<th>NPF</th>
<th>CAB</th>
<th>( \lambda = 0.79 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOF (( \lambda ))</td>
<td>-0.21</td>
<td>-0.21</td>
<td></td>
</tr>
<tr>
<td>FISCAL</td>
<td>0.06</td>
<td>0.07</td>
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<tr>
<td>NPFA</td>
<td>0.02*</td>
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<tr>
<td>YPPP</td>
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<td>0.06*</td>
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<tr>
<td>YFORE</td>
<td>-0.87*</td>
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<tr>
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<td>-0.96*</td>
<td>-0.87*</td>
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<tr>
<td>CAPCON</td>
<td>0.03*</td>
<td>0.04*</td>
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</tr>
</tbody>
</table>

\[ R^2 \quad .33 \quad .58 \]

\[ \text{No. Obs.} \quad 172 \quad 172 \]
Singapore Stabilizes Exchange Rate

The chart illustrates the stabilizing of the exchange rate in Singapore from 2001 to 2006. The graph shows the percent of GDP, with CAB (left) and NOF (left) represented by blue and pink bars, respectively. The PPP Exchange Rate (right) is indicated by a green line. The data indicates a stabilization effect from 2003 onwards, with a gradual increase in the percent of GDP.

The X-axis represents the years from 2001 to 2006, while the Y-axis represents the percent of GDP ranging from 0 to 20. The US$100 is marked at 80 on the Y-axis.
Korea Lets Exchange Rate Rise

- CAB (left)
- NOF (left)
- PPP Exchange Rate (right)
Conclusions

- Currency intervention matters!
  - Each $1 of intervention raises CAB about $0.80

- Financial markets are not efficient

- Counter-intervention most direct response:
  - Potential budgetary cost and risk exposure

- Capital controls (taxes) are budget-friendly alternative
  - May be difficult to target at manipulators