IMF SURVEILLANCE: METHODS OF EXCHANGE RATE ASSESSMENTS

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Aim of Lecture

• Discuss role of current account and exchange rate assessment in IMF surveillance
• Give a brief historical overview of the IMF’s methodologies to assess current accounts and exchange rates
• Elaborate on the IMF’s new external assessment methodology (EBA), which replaces its previous methodology (CEGR)
• Discuss some recent assessments
Overview: Rationale

- Exchange rate / external stability surveillance has always been at the core of IMF’s responsibilities
- Members’ obligations focus on the pursuit of domestic economic and financial policies that promote growth and stability at home, and on the avoidance of external instability that may affect other members
- IMF conducts Article IV consultations with each member country, typically once a year or every two years
- Exchange rate advice cannot be considered in isolation from other macroeconomic policies
- Examples of possible effects:
  - Undervaluation: artificially boosts competitiveness, build-up of reserves (quasi fixed exchange rate regime), attraction of speculative capital inflows
  - Overvaluation: stifled competitiveness, larger risk of sudden stop, balance sheet effects
CPI Based REER Developments and Current Account: China and United States

**CPI Based REER Index, 2005=100**
Source: IFS

**Current Account, in Percent of GDP**

*Source: IMF (IFS, WEO).*
CPI Based REER Developments and Current Account: Czech Republic, Latvia, Poland

CPI Based REER Index, 2005=100
Source: IFS

Current Account, in Percent of GDP

Source: IMF (IFS, WEO).
CPI Based REER Developments and Current Account: Spain and Greece

CPI Based REER Index, 2005=100

Current Account, in Percent of GDP

Source: IMF (IFS, WEO).
CPI Based REER Developments and Current Account: Germany and France

CPI Based REER Index, 2005=100

Current Account, in Percent of GDP

Source: IMF (IFS, WEO).
ULC Based REER Developments: Examples

Note: ULC Based REER Index, 2005=100
Source: IFS
A Global Perspective: Current Accounts Across Countries and Regions (Percent of World GDP)

IMF, World Economic Outlook, October 2014.
A Global Perspective: Net Foreign Asset (NFA) Stocks Across Countries and Regions

IMF, World Economic Outlook, October 2014.
Agenda

- Exchange Rates and Current Account Developments
- Exchange Rate Assessments in the IMF before 2012: Three Methodologies
- External Balance Assessment (EBA)
- Conclusions
Overview: Methodologies

• As part of its mandate, since the mid-1990s the Consultative Group on Exchange Rate Issues (CGER) has provided exchange rate assessments (initially for a number of advanced economies) with the aim of informing country-specific analysis, including Article IV reports.

• The methodology has been revised and extended over the years, including to cover also emerging market economies and low-income countries.

• A new methodology is being refined: the external balance assessment (EBA).

• Empirical approaches serve as useful benchmarks but should be supplemented by a closer analysis of underlying country-specific economic developments and other competitiveness and financial indicators.
Exchange Rate Assessments: Three Complementary CGER Methodologies (see Lee et al. 2008)

**Macroeconomic balance (MB) approach**
- Based on difference between the CA balance projected over the medium term and “CA norm”
- Calculate exchange rate adjustment that would eliminate this difference

**Equilibrium real exchange rate approach**
- Estimates directly an equilibrium real exchange rate for each country as a function of medium-term fundamentals
- Difference between the estimated equilibrium real exchange rate and its current value

**External sustainability approach**
- Calculates the difference between the actual CA balance and the balance that would stabilize the net foreign asset (NFA) position (at some benchmark level)
- Translate difference into the real exchange rate adjustment

In the following, the focus is on the macroeconomic balance approach.
Macroeconomic Balance Approach

Three Steps:

- **Step 1.** Estimate an equilibrium relationship between CA balance and a set of fundamentals with panel regression techniques

- **Step 2.** For each country, compute the CA norm from the relationship estimated at step 1 as a function of the levels of macro fundamentals projected to prevail in the medium term

- **Step 3.** For each country, compute the REER adjustment that would close the gap between CA norm and the “underlying” CA balance in the medium term

**Memo:** “underlying” CA balance is CA stripped of temporary factors (e.g., domestic and foreign output gaps are closed) and assessed on the basis of current REER and on continuation of established domestic policies
MB Approach: Mechanics

• Step 1. \( CA_{i,t} = \beta_0 + \beta'_1 X_{i,t} + \varepsilon_{i,t}, \quad \varepsilon_{i,t} \sim N(0, \sigma_i^2) \)

\( i = 54 \) countries; \( t = 1973\ldots2004 \), non-overlapping four-year averages
\( H = 6 \) years - medium-term horizon \( \Rightarrow T+H \)
\( CA_{i,t} \) is the current account to GDP ratio, country \( i \) at time \( t \)

• Step 2. \( CA_{i}^{\text{norm}} \stackrel{\text{def}}{=} \beta_0 + \beta'_1 \hat{X}_{i,T+H} \)

where \( \hat{\beta}_0, \hat{\beta}'_1 \)
\( \hat{X}_{i,T+H} \)

- GMM estimates of step 1 regression
- set of medium-term projections of economic fundamentals
MB Approach: Current Account Regression

Results

Table 1. Macroeconomic Balance Approach: Current Account Regressions

<table>
<thead>
<tr>
<th></th>
<th>Pooled Estimation</th>
<th>Hybrid Pooled Estimation</th>
<th>Fixed Effects Estimation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiscal balance</td>
<td>0.20***</td>
<td>0.19***</td>
<td>0.32***</td>
</tr>
<tr>
<td>Old-age dependency</td>
<td>−0.14**</td>
<td>−0.12**</td>
<td>−0.23**</td>
</tr>
<tr>
<td>Population growth</td>
<td>−1.21***</td>
<td>−1.03***</td>
<td>−0.47</td>
</tr>
<tr>
<td>Initial net foreign assets (NFA)</td>
<td>0.02***</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Lagged current account</td>
<td>...</td>
<td>0.37***</td>
<td>...</td>
</tr>
<tr>
<td>Oil balance</td>
<td>0.23***</td>
<td>0.17***</td>
<td>0.31***</td>
</tr>
<tr>
<td>Output growth</td>
<td>−0.21**</td>
<td>−0.16*</td>
<td>−0.27</td>
</tr>
<tr>
<td>Relative income</td>
<td>0.02*</td>
<td>0.02*</td>
<td>...</td>
</tr>
<tr>
<td>Banking crisis</td>
<td>0.01*</td>
<td>0.01</td>
<td>...</td>
</tr>
<tr>
<td>Asian crisis</td>
<td>0.06***</td>
<td>0.04***</td>
<td>0.07***</td>
</tr>
<tr>
<td>Financial center</td>
<td>0.03***</td>
<td>0.03***</td>
<td>...</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.52</td>
<td>0.62</td>
<td>0.56</td>
</tr>
</tbody>
</table>

Note: The regression specification in the second column (hybrid pooled estimation) also includes a few country-specific constant terms (see Appendix 2.1 for details). * , **, and *** indicate significance at the 10, 5, and 1 percent level, respectively, based on standard errors robust to serial correlation.

MB Approach: Determinants of CAB Over the Medium Term

• Fiscal Balance
  - GB balance↑ ® $\text{S}_{\text{national}}$↑ ® CA balance↑
  - Exception: full Ricardian equivalence (empirically, does not hold)
  - Measure: General government balance to GDP ratio in deviation from average budget balance of trading partner

• Demographics
  - Share of economically inactive, dependent population↑ ® $\text{S}_{\text{national}}$↓ ® CA balance↓
  - Measures: Old-age dependency ratio (ratio of retirement age population to working age population), relative population growth rate (proxy for the share of economically dependent young people)
MB Approach: Determinants of CAB Over the Medium Term

• Net Foreign Assets (NFA): impact on CA generally ambiguous
  ➢ Negative: high-NFA economies may run trade deficits for long periods of time and still remain solvent
  ➢ Positive: high-NFA economies benefit from high net foreign income inflows. Therefore, NFA↑ ➔ CA balance↑
  ➢ Combined impact: positive, as 2nd effect dominates (empirical evidence)
  ➢ Measure: “initial” NFA position = NFA_{-1} / GDP_{-1}

• Oil Balance
  ➢ P_{oil}↑ ➔ CA balance↑ in oil-exporting countries
  CA balance↓ in oil-importing countries
  ➢ Measure: oil trade balance as a share of GDP
MB Approach: Determinants of CAB Over the Medium Term

• Economic Growth
  ➢ Dynamic emerging economies in early stage of development require greater investment and are more likely to finance it through external borrowing
  ➢ As they develop, their income approaches the income of advanced economies ➔ CA balance ↑
  ➢ Measures: relative income level (relative to US level)
  ➢ relative GDP per capita growth (in relation to trading partners)
  ➢ Effect on CA: relative income (+), relative growth (-)

• Other: economic crises dummies, financial center dummies etc.

• To reflect significant persistence of current account series, a specification including lagged current account has also been estimated
Interpretation of Results: Magnitude of Effects (Hybrid Estimation)

• **Fiscal balance ratio** up by 1 pp
  - CA up by 0.19 percent of GDP

• **Old-age dependency ratio** up by 1 pp
  - CA down by 0.12 percent of GDP

• **Population growth** up by 1 pp
  - CA down by 1 percent of GDP

• **Past current account balance** up by 1 pct of GDP
  - CA up by 0.37 percent of GDP

• **Relative GDP growth** up by 1 pp
  - CA down by 0.16 percent of GDP

• **Oil balance/GDP** up by 1 pp
  - CA up by 0.17 percent of GDP

• **Relative income** a country whose income is half of the US level would have on average a CA balance that is 1 percent of GDP smaller
Illustrative Current Account Norms

Table 2. Macroeconomic Balance Approach: Illustrative Current Account Norms
(In percent of GDP)

<table>
<thead>
<tr>
<th>Country</th>
<th>Current Account(^1)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Observed 2006</td>
<td>Medium term 2012</td>
<td>Current Account Norm(^2)</td>
</tr>
<tr>
<td>Advanced countries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>0.3</td>
<td>-0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Other</td>
<td>-3.4</td>
<td>-3.3</td>
<td>-1.9</td>
</tr>
<tr>
<td>Emerging markets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia</td>
<td>6.3</td>
<td>7.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Latin America</td>
<td>1.8</td>
<td>-0.8</td>
<td>-0.3</td>
</tr>
<tr>
<td>Central and Eastern</td>
<td>-3.8</td>
<td>-3.9</td>
<td>-2.8</td>
</tr>
<tr>
<td>European countries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>3.7</td>
<td>-0.2</td>
<td>1.1</td>
</tr>
</tbody>
</table>

\(^1\)Based on the September 2007 World Economic Outlook database.
\(^2\)Calculated from hybrid pooled estimates.

MB Approach: Mechanics II - Getting to the RER Gap

Which exchange rate adjustment is needed in the medium-term to close the gap between the “Underlying Current Account” and the “Current Account Norm”?

\[
RER \text{ gap}_i = \left( \ln Q_i - \ln Q_i^E \right) = \frac{1}{\eta_{CA,i}} \left( CA_i^U - CA_i^{norm} \right)
\]

where \( CA_i^U \) “underlying” CA to GDP ratio, projected at horizon \( T+H \) for country \( i \) (e.g., taken from WEO)

\( \eta_{CA} \) is medium-run elasticity of the current account wrt RER
Agenda

- Exchange Rate Concepts
- Exchange Rates and Current Account Developments
- Exchange Rate Assessments in the IMF before 2012: Three Methodologies
- External Balance Assessment (EBA)
- Conclusions
EBA Methodologies

- The External Balance Assessment (EBA) Methodology has been developed by the Research Department as a successor to the CGER exercise.

- EBA also comprises three methods, each based on its corresponding CGER predecessor (see IMF Occasional Paper 261, 2008).

- Sharper distinction between positive (descriptive) understanding of the current accounts and real exchange rates and making normative evaluations.

Key Innovations in the EBA Methodology

• The typical EBA regression contains a much broader set of variables that can explain the current account
  - Variables include financial sector variables
  - Variables include cyclical influences (e.g., output gaps) which are not filtered out by moving averages (use of annual data)
  - Variables include policy variables that influence the CA (and RER) in addition to fiscal balances
• Annual data, some variables instrumented
• As before, most variables relative to trading partners (world average)
• Crucial: Makes a clearer distinction between the CA and RER at current policies, and the CA and RER at desired policies
## EBA Current Account Regression: Results (1/2)—IMF (2013)

### 1. Traditional Fundamentals

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFA/Y</td>
<td>0.016**</td>
</tr>
<tr>
<td>NFA/Y*(dummy if NFA/Y&lt;-60 percent)</td>
<td>-0.012</td>
</tr>
<tr>
<td>Financial center dummy</td>
<td>0.033***</td>
</tr>
<tr>
<td>Output per worker, relative to top 3 economies</td>
<td>0.007</td>
</tr>
<tr>
<td>Relative output per worker * K openness</td>
<td>0.065***</td>
</tr>
<tr>
<td>Oil and natural gas trade balance *resource temporariness</td>
<td>0.615***</td>
</tr>
<tr>
<td>Dependency ratio</td>
<td>-0.030</td>
</tr>
<tr>
<td>Population growth</td>
<td>-0.629</td>
</tr>
<tr>
<td>Aging speed (proj.), change in old age dependency ratio</td>
<td>0.156***</td>
</tr>
<tr>
<td>GDP growth forecast in 5 years</td>
<td>-0.471***</td>
</tr>
<tr>
<td>Safer institutional / policy environment (index)</td>
<td>-0.109***</td>
</tr>
</tbody>
</table>

Source: IMF 2013, p. 63, *significant at 10% level, **at 5 percent level, *at 1 percent level. The following analysis follows IMF (2013).
## EBA Current Account Regression (2/2)—IMF 2013

<table>
<thead>
<tr>
<th>Financial Factors</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Own currency share in world reserves</td>
<td>-0.045***</td>
</tr>
<tr>
<td>Global risk aversion * capital account openness</td>
<td>0.068***</td>
</tr>
<tr>
<td>Global risk aversion * openness*share in world reserves</td>
<td>-0.136*</td>
</tr>
<tr>
<td>Private Credit / GDP (relative to historical average)</td>
<td>-0.026***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cyclical / Temporary Factors</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative output gap</td>
<td>-0.400***</td>
</tr>
<tr>
<td>Commodity terms of trade * trade openness</td>
<td>0.230***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy-Related Regressors</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative fiscal policy (cyclically-adjusted fiscal balance, % GDP)</td>
<td>0.324***</td>
</tr>
<tr>
<td>Public health expenditure in percent of GDP</td>
<td>-0.551***</td>
</tr>
<tr>
<td>FX intervention, interacted with capital controls</td>
<td>0.346**</td>
</tr>
</tbody>
</table>

Source: IMF 2013, p. 63, *significant at 10% level, **at 5 percent level, *at 1 percent level.
Explanatory Variables: Traditional Fundamentals (1/6)

• Relationship with (lagged) NFA position:
  ➢ Countries with more positive NFA positions tend to have somewhat higher CA balances
  ➢ Regression allows for a non-linear relation, as positive relation flattens / disappears when NFA/GDP is far in the negative
  ➢ Estimated positive coefficient is about 0.015

• Financial center dummy
  ➢ On average financial centers are found to have a CA balance about 3 1/2 percent of GDP higher than others
Explanatory Variables: Traditional Fundamentals (2/6)

Output per worker, relative to top 3 economies

- Theory suggests capital will flow from higher- to lower-productivity economies, according to the extent to which the economy “is behind the economy at the frontier”

- Productivity is measured as an economy’s output, measured in PPP terms, to the size of its working age population

- Can only occur if capital is allowed to flow across countries (thus interaction with a measure of capital account openness)

- An increase in relative productivity by 10 percent is associated with an improvement in the current account by about 0.6 percent of GDP with open capital account
Explanatory Variables: Traditional Fundamentals (3/6)

• Exhaustable resources of oil and natural gas:
  ➢ Countries with energy resource tend to save a portion of its income because of the exhaustable nature.
  ➢ Current accounts are expected to be positively related to the size of such exports and their “temporariness” (measured by the production / stock of proven reserves).
  ➢ Each 1 percentage point of GDP of “temporariness-adjusted” net exports of oil and gas is associated with an increase in the current account of 0.6 percentage points of GDP.
Explanatory Variables: Traditional Fundamentals (4/6)

• Demographic Factors
  - Aging Speed
    - Defined as projected change in the dependency ratio 20 years out (dependency ratio = ratio of population aged 65 divided by population between 30 and 64 years old)
    - A faster projected aging is associated with a stronger current account
    - Increase in relative aging speed by 1 percentage point improves current account by about 0.15 percent of GDP
  - Demographic factors
    - Population growth and old age dependency ratio enter with the expected negative sign (but are not statistically significant)
Explanatory Variables: Traditional Fundamental Factors (5/6)

• Expected growth rate 5 years ahead—economies with faster growth tend to invest more and have less positive CA balances

• An increase in the relative growth forecast of 1 percentage point is associated with a reduction in the current account of almost half a percentage point
Explanatory Variables: Traditional Fundamental Factors (6/6)

• Risks associated with institutional / political environment
  ➢ Greater risk or perception of greater risk is expected to be a disincentive to investment spending and possibly an incentive to save more, thus should be reflected in a more positive CA balance
  ➢ Indicator is the average of 5 indicators from the International Country Risk Guide
  ➢ Constructed so that higher values signify less risk
  ➢ A reduction in the risk indicator by one standard deviation is associated with a weaker current account by about 1 percentage point of GDP
Explanatory Variables: Financial Factors (1/2)

• Reserve currency status—the share of a country’s currency in the total stock of world reserves
  ➢ Coefficient has expected negative sign and is significant
  ➢ Every 10 percent of global reserves held in its own currency, is associated with a current account deficit of 0.45 percentage point of GDP

• Global capital market conditions or global risk aversion
  ➢ Measured by implied volatility of S&P index (VIX)
  ➢ VIX is interacted with openness
  ➢ Asymmetric effects
    ✓ For non-reserve currencies—a rise (decline) in global risk aversion is associated with a rise (fall) in the current account. An improvement in the VIX by 10 percentage points is associated with an improvement in the current account of about 0.7 percent of GDP
    ✓ For reserve currencies opposite effects
Explanatory Variable: Financial Factor (2/2)

- Private credit / GDP (relative to its own average and relative to the average of other countries)
  - Financial excesses may cause demand boom
  - Increase in relative private credit to GDP by 10 percentage points is associated with a weaker current account of 0.3 percent of GDP
Explanatory Variables: Cyclical Temporary Factors (1/1)

• Relative output gap
  - Cyclically lower output is typically associated with higher savings and lower investment
  - An increase in the relative output gap by 1 percentage point is associated, other things constant, with a decline of the current account by about 0.4 percent of GDP

• Commodity terms of trade (cyclical element)
  - Increase in the TOT relative to trend by one percentage point is associated with an improvement of the current account by about 0.4 percent of GDP (in a country with average trade openness of about 30 percent of GDP)
Explanatory Variables: Policy-Related Regressors (1/2)

• Fiscal Policy
  - Cyclically-adjusted fiscal balance
  - Increase in the relative fiscal balance by 1 percentage point of GDP is associated with an improvement of the current account of about 0.3 percentage point of GDP

• Social protection proxied by the level of public expenditure in percent of GDP
  - Better social protection tends to reduce need for precautionary saving
  - An increase in the relative health expenditure by 1 percentage point of GDP is associated with a lower current account by about ½ percent of GDP
Explanatory Variables: Policy Related Regressors (2/2)

• Foreign exchange (FX) intervention, interacted with capital controls
  ➢ Increase in reserve accumulation of 2 percentage points is associated with a current account that is higher by 1/3 percent of GDP for a country with a capital control index of 0.5

• Capital controls
  ➢ Enters the regression as interaction term with reserves and the level of development
Identifying and Measuring Policy Gaps

• Policy gaps are the difference between observed policies and benchmarks

  ➢ Fiscal policy—provided by country team
  ➢ Social protection—based on regression of social (in particular health spending and GDP per capita) or from country team
  ➢ Capital controls cross-country average (0.15 in 2010, or the country’s actual level, whatever is smaller)
  ➢ Change in international reserves—assumption observed change was appropriate. For countries with excess reserves, appropriate change is zero
Contributions of Policy Gaps

- Contributions of policy gaps are estimated based on the coefficient in the regression.
- Important to remember that regression variables are measured on a relative basis.
- Caveat: some effects which may influence CA, e.g., financial regulation (which affects savings) is only captured indirectly.
The Concept of the EBA Current Account GAP - Estimated Current Account

• The estimated current account can be written as:

\[
\left( \frac{CA}{Y} \right) = \alpha + X'\beta + P'\gamma
\]

• X is the vector of non-policy “structural” variables
• P is the vector of policy variables
• And define now: \( P^* \) desirable values for policy variable
The Concept of the EBA Current Account GAP: Decomposing the Fitted Values into Two Parts

• With $P^*$ as desirable values for policy variables
• Add and subtract on $P^* \gamma$ from the right hand side

\[
\left( \frac{\hat{CA}}{Y} \right) = \alpha + X'\beta + P^* \gamma + (P - P^*) \gamma
\]

- EBA’s CA “norm” (i.e. EBA’s predicted CA at $P^*$)
- Contribution of policy gaps to deviations from CA norm
The Actually Observed Current Account Can Then be Broken Down into three Parts

\[
\frac{CA}{Y} = \frac{\hat{CA}}{Y} + \text{regression residual} = EBA \text{ norm} + (P - P^*)' \gamma + \text{regression residual}
\]

1. EBA CA norm, i.e., the CA implied by the regression if all policies were at their desirable level P*

2. Contribution of policy gaps to explain deviations of the actual current account from the EBA norm

3. Regression residual
The EBA Estimated *Total Current Account Gap*: Several Equivalent Ways:

Current Account Gap = Actual Current Account - EBA norm

\[
\text{Total CA gap} = \frac{CA}{Y} - EBA \text{ norm} = \frac{CA}{Y} - \left[ \frac{\hat{CA}}{Y} - (P - P^*)' \gamma \right]
\]

= Regression Residual + (P - P^*)' \gamma
Four Important Points about EBA gaps

• The *policy-adjusted* EBA residual now becomes the relevant assessment metric, rather than “raw” residual

• If regression residual = 0 you don’t necessarily give a country a “pass” if P-P* # 0

• P* has a non-trivial normative content, i.e., means what a country’s desired policy should be, in terms of mitigating/avoid distortions and be “sustainable”

• Because P* is also measured relative to the world, what others do in terms of their own P* will affect your CA

• Because of the above and also because regression residual contains our measure of ignorance and possible specification and/or measurement errors, a tolerance band must be allowed, including room for discussion/policy judgment as to the final assessment.
Figure 1. Actual VS Fitted CA/GDP for 2008-2010

- Linear (45 degree +/− 2* RMSE)
- Linear ("45 degree - 2 * RMSE")

1 st.dev dev band
Current Accounts and Staff Assessed Norms

Figure 9. Actual Current Accounts and Staff Assessed Norms (2013)
(Percent of GDP)

Source: WEO and IMF staff calculations.

Assessed Differences Between Cyclically-Adjusted Current Accounts and Those Consistent with Fundamentals and Desirable Policies

Figure 10. Assessed Differences Between Cyclically-Adjusted Current Accounts and those Consistent with Fundamentals and Desirable Policies (2013) (Percent of GDP)

Assessed Differences Between Real Effective Exchange Rates and Those Consistent with Fundamentals and Desirable Policies

Figure 11. Assessed Differences Between Real Effective Exchange Rates and those Consistent with Fundamentals and Desirable Policies (2013 year average) (Percent)

Staff Assessed REER Gaps and EBA Regression Estimated Current Account Gaps

Individual Economies: Contribution of Policies to Current Account Gaps

Figure A10. Individual Economies: Contribution of Policies to Current Account Gaps (2013)
(Percent of GDP, based on midpoint of staff estimates)

Coming Back to China: The Real and Nominal Effective Exchange Rate Have Gradually Appreciated
Example China: The Current Account Surplus Has Declined

Source: IMF, China 2014 Article IV Consultation, p. 34.
Example China: Appreciating Exchange Rate and Evolving Assessment

• **2010:** “Staff believe that the renminbi remains substantially below the level that is consistent with medium-term fundamentals” (China, P.R. Staff Report for the 2010 Article IV Consultation, p. 19, IMF)

• **2012:** “The renminbi is assessed to be moderately undervalued, reflecting a reassessment of the underlying CA, slower international reserve accumulation, past REER appreciation.” China, P. R. (Staff Report for the Article IV Consultation, 2012, July 2012, p. 1, IMF)

• **2015:** “While undervaluation of the Renminbi was a major factor causing the large imbalances in the past, our assessment now is that the substantial real effective appreciation over the past year has brought the exchange rate to a level that is no longer undervalued” (IMF Staff Completes the 2015 Article IV Consultation, Press Release 15/237)

Coming back to Germany —The Current Account Balance at a New Peak

Source: IMF, Germany 2014 Article IV Consultation.
Example: Germany IMF Assessment 2014
Article IV Consultation

- The current account (CA) surplus was 7½ percent of GDP in 2013, corresponding to an estimated cyclically adjusted surplus of around 8¼ percent of GDP.

- Staff assesses the norm at 2¼-5¼ percent of GDP. Thus, the cyclically adjusted CA is 3-6 percent of GDP stronger than that implied by fundamentals and desirable policies.

- ..., based on an estimate of Germany’s trade elasticity, the CA gap implies a more sizable misalignment of 9-18 percent.

- Turning to the real effective exchange rate (REER), model-based estimates have an unusually poor fit for Germany, pointing to a highly implausible 11 percent overvaluation in 2013.

- All in all, staff’s assessment is of a REER undervaluation of 5-15 percent.

Source: IMF, Germany 2014 Article IV Consultation, p. 20.
Agenda

Exchange Rates and Current Account Developments

Exchange Rate Assessments in the IMF before 2012: Three Methodologies

External Balance Assessment (EBA)

Conclusions
The EBA Cooking-Book Summary: From Regression to Assessment

1) For each economy in each year, regression yields the contribution of each determinant (including current policies) to the CA. This is the fitted CA/GDP.

2) Regression also yields residuals (at current policies).

3) Judgments about *desirable* policy levels yield “policy gaps.”

4) Policy gaps help answer the question “What would the fitted CA be if policies were at *desirable* levels?”
Additional Remarks/Suggestions for Current Account and Exchange Rate Assessments

• Three EBA approaches present useful yardsticks. Lecture focussed on one

• Closing policy gaps is a medium-term exercise (no cyclical influences)

• Use your economic knowledge and common sense
  ➢ Is the country’s external position improving or deteriorating sharply? External sustainability very useful benchmark
  ➢ Are there “fundamental” reasons for such improvement or deterioration?
  ➢ Is the real exchange rate broadly in line with historical trends (excluding “abnormal” periods)? Are there factors explaining the deviations (trade liberalization, terms of trade, etc.)?

• Complement current account and exchange rate assessments with broader measures of competitiveness
Selected References

• Bems, R., and I. Carvalho Filho, (2009), Exchange Rate Assessments: Methodologies for Oil Exporting Countries, IMF WP 09/281.

• IMF (2011), 2011 Triennial Surveillance Review—Staff Background Studies, August.

• IMF (2013), External Balance Assessment (EBA) Methodology: Technical Background, June.*


• IMF (various), IMF Country Reports (Article IV Consultations) and Selected Issues Papers.


* Indicates papers most relevant for the lecture.