



IMF POLICY PAPER

2017 EXTERNAL SECTOR REPORT

July 2017

IMF staff regularly produces papers proposing new IMF policies, exploring options for reform, or reviewing existing IMF policies and operations. The following documents have been released and are included in this package:

- A **Press Release** summarizing the views of the Executive Board as expressed during its July 24, 2017 consideration of the report.
- The **2017 External Sector Report**, prepared by IMF staff and completed on June 23, 2017 for the Executive Board's consideration on July 24, 2017.

The document listed below will be separately released.

- 2017 External Sector Report—Individual Economy Assessments.

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IMF Executive Board Discusses the 2017 External Sector Report

On July 24, 2017, the Executive Board of the International Monetary Fund (IMF) discussed the 2017 External Sector Report (ESR).

The 2017 ESR found that *excess* current account imbalances (i.e., deficits or surpluses that deviate from levels deemed consistent with medium-term fundamentals and desired policies) represented about one-third of total global imbalances in 2016, remaining broadly unchanged since 2013, although increasingly concentrated in advanced economies. While this rotation of imbalances towards advanced economies could entail lower external financing risks in the near term, a greater concentration of excess deficits in advanced debtor economies may engender protectionist sentiment and raise the risk of disruptive corrections down the road, including due to widening external stock imbalances.

Addressing excess external imbalances in a manner that is supportive of global growth requires a recalibration of the macroeconomic policy mix and properly-targeted structural policies in deficit and surplus economies alike. In general, excess surplus countries with fiscal space should allow for greater fiscal stimulus, while advancing structural reforms that support domestic demand and foster competition. Meanwhile, excess deficit countries should move forward with fiscal consolidation, while gradually normalizing monetary policy in tandem with inflation developments and focusing on structural policies that strengthen competitiveness and overall saving. Protectionist policies should be avoided as they are unlikely to reduce external imbalances and are detrimental to domestic and global growth.

The ESR, produced annually since 2012, analyzes global external sector developments and provides assessments of economies' external positions, including current account balances, real exchange rates, external balance sheets, capital flows, and international reserves. These assessments are derived at by integrating multilateral and country-specific perspectives, while ensuring individual economy assessments add up to a multilaterally consistent view. The report, which covers 28 of the world's largest economies plus the euro area (representing over 85 percent of global GDP), comprises two papers: (i) an overview paper that covers multilateral issues, showing how individual economies fit into the global picture and discussing policies needed to reduce global imbalances; and (ii) a set of individual country pages with details on external assessments for each economy.

Executive Board Assessment¹

Executive Directors broadly agreed with the assessment of global excess imbalances and related policy recommendations. They noted that, while global imbalances had narrowed markedly in the aftermath of the global financial crisis, with the adjustment process relying heavily on demand compression in deficit countries, progress had stalled more recently. Excess imbalances are increasingly concentrated in advanced economies, with persistent large excess surpluses in some economies. Directors noted that, absent policy actions and more effective automatic adjustment mechanisms, global excess imbalances are likely to widen over the medium term, potentially further straining the international monetary system. They agreed that addressing global excess imbalances is in the interests of all countries and requires collective efforts. Directors emphasized that both deficit and surplus countries have critical roles to play in that regard.

Directors broadly shared the view that excess imbalances have rotated toward advanced economies, and that deficits and surpluses have been concentrated in a few economies. While this points to lower deficit-financing risks in the near term, the widening of deficits in key economies, if unaddressed, could potentially increase protectionist sentiment, further straining global trade, investment, and growth. Directors also highlighted that diverging stock positions, coupled with continued overreliance on demand from debtor countries, could pose risks to global growth and raise the likelihood of a disruptive adjustment over the medium term.

Directors stressed the need for both deficit and surplus countries to recalibrate macroeconomic policies, with a view to achieving their domestic objectives as well as strengthening the global prospects for strong, sustainable, and balanced growth. In general, excess deficit countries should move forward with fiscal consolidation without delay, gradually normalizing monetary policy in tandem with inflation developments; while excess surplus economies with fiscal space should rely more on fiscal policy, especially to encourage investment. Where monetary policy is constrained, fiscal and structural policies could be necessary to facilitate relative price adjustments for internal and external rebalancing. Directors also stressed that countries should allow exchange rates to move in line with fundamentals. Directors underscored the importance of well-targeted structural policies to address the persistence of excess external imbalances. They concurred that structural policies in excess surplus countries should generally focus on boosting overall domestic investment, reducing saving, and promoting competition; while in excess deficit economies, policies should be directed to improving external competitiveness and overall saving. Directors urged countries to maintain open trade and investment regimes and to avoid

¹ At the conclusion of the discussion, the Managing Director, as Chairman of the Board, summarizes the views of Executive Directors, and this summary is transmitted to the country's authorities. An explanation of any qualifiers used in summings up can be found here: <http://www.imf.org/external/np/sec/misctools/qualifiers.htm>.

using protectionist policies to address excess imbalances, noting that they are detrimental to domestic and global growth.

Directors welcomed the analysis of persistent current account surpluses and the composition of sectoral saving in advanced economies. A few Directors, noting the concentration of large excess deficits in a handful of countries, suggested that a similar focus on external deficits would be useful, while others pointed to the extensive studies on the issue. Directors observed the large difference in gross corporate saving behavior across advanced economies and the role it plays in driving imbalances. They called for more research on the drivers of corporate and household savings.

Directors appreciated ongoing efforts by staff to better describe the external assessment methodology and improve transparency in deriving staff assessments. They saw value in a clear presentation of the different elements of the overall assessments, including the results of the models and the justification and application of country-specific judgment. They recognized that staff judgment is necessary to reflect country-specific factors not captured by the models, although further justification is warranted where large adjustments are made to current account norms. Directors called on staff to ensure that adjustments are transparent, evenhanded, and multilaterally consistent.

Directors pointed to limitations of the models, including in terms of data comparability and measurement issues, as well as methodological uncertainties inherent in the use of economic models to assess external positions. Directors thus emphasized the need for caution and nuance in interpreting the results, although some saw room for more persuasive policy recommendations. Careful and clear public communication about the nature of the exercise and role of judgment would also be essential. In this regard, Directors saw merit in sharpening key messages further for communication to a broader audience, conveying the criticality of conducting external assessments through a multilateral approach, and continuing to integrate them into the Fund's flagship reports. A number of Directors considered it a priority to clarify that external imbalances (deficits and surpluses), as opposed to excess imbalances, can be appropriate and desirable. Directors agreed that any domestic policy gaps identified by the models should be discussed thoroughly in Article IV consultations.

Directors acknowledged that although some improvements had been made to the External Balance Approach methodology, there remains scope for further refinements. They welcomed staff's intention to review the key models ahead of next year's report, with inputs from experts and country authorities across the membership and Board members, and offered many useful suggestions in this regard. Directors saw as priority areas for improvement: demographics-related variables, use of third-party indicators, and treatment of financial centers; as well as the identification of additional policy variables and other factors to reduce the unexplained components. They also offered a range of views on issues that deserve greater attention in future reports, including assessing the role of external stock positions,

income balances, capital flows, reserve currencies, foreign exchange intervention, and global value chains.

Directors supported the Fund's work on external sector assessments and the External Sector Report. They underscored the role of the Fund in providing multilaterally consistent assessments of member countries' external sector positions and policies. Directors welcomed staff's continued analysis of global excess imbalances and their causes, and broader efforts to strengthen integrated surveillance. They looked forward to discussing the planned refinements to the methodology, taking into consideration Directors' suggestions made today and in the earlier informal setting.



2017 EXTERNAL SECTOR REPORT

June 23, 2017

KEY POINTS

Global current account imbalances were broadly unchanged in 2016, with minor shifts adding to the reconfiguration under way since 2013. The fall in commodity prices, uneven cyclical recoveries in systemic economies, and differences in policy responses contributed to the rotation of imbalances. Current account surpluses of oil-exporting economies, as a group, shifted from large surpluses to small deficits, while deficits in emerging and developing economies narrowed markedly. At the same time, surpluses and deficits in key advanced economies widened. These trends were generally supported by real exchange rate movements.

Overall *excess* current account imbalances (i.e., deficits or surpluses that deviate from desirable levels) represented about one-third of total global imbalances in 2016, remaining broadly unchanged since 2013, although increasingly concentrated in advanced economies. In particular, excess imbalances narrowed in emerging and developing economies, led by a smaller excess surplus in China and smaller excess deficits in others (Brazil, Indonesia, South Africa, Turkey). This narrowing, however, was accompanied by a widening of excess imbalances in some advanced economies. The persistence of large excess surpluses in several advanced economies (e.g. Germany, Korea, the Netherlands, Singapore, Sweden) remains a distinguishing feature of the constellation of imbalances, an issue that is explored in greater detail in this year's report.

Persistent global excess imbalances suggest that automatic adjustment mechanisms are weak. While the rotation of excess imbalances toward advanced economies—with deficits increasingly concentrated in the United States and United Kingdom—likely entails lower deficit-financing risks in the near term, the increased concentration of deficits in a few economies carries greater risks of disruptive trade policy actions. Diverging stock positions coupled with continued overreliance on demand from debtor countries could also pose risks to global growth and raise the likelihood of disruptive adjustments down the road.

With nearly-closed output gaps in most systemic economies, addressing external imbalances in a growth-friendly fashion requires a recalibration of the policy mix in deficit and surplus economies alike. Excess deficit countries should move forward with fiscal consolidation, while gradually normalizing monetary policy in tandem with inflation developments. Excess surplus economies with fiscal space should reduce their reliance on easy monetary policy and allow for greater fiscal stimulus. Where monetary policy is constrained from playing a role, as in individual euro area members, fiscal and structural policies to facilitate relative price adjustments should take priority. Meanwhile, structural policies in excess surplus countries should focus on lifting distortions that constrain domestic demand or limit trade competition; while in excess deficit economies, policies should be directed to improving external competitiveness and overall saving. Protectionist and mercantilist policies should be avoided as they are detrimental to global growth.

The IMF's Sixth *External Sector Report* presents a multilaterally consistent assessment of the largest economies' external sector positions and policies. This report, along with the companion *Individual Economy Assessments* paper, integrates analysis from the Fund's bilateral and multilateral surveillance to provide a consistent assessment of exchange rates, current accounts, reserves, capital flows, and external balance sheets. This year's edition includes a featured analytical piece focused on understanding large and persistent surpluses from a historical perspective.

Together with the World Economic Outlook and Article IV consultations (both with their heightened focus on spillovers), this Report is part of a continuous effort to ensure the Fund is in a good position to address the possible effects of spillovers from members' policies on global stability and monitor the stability of members' external sectors in a comprehensive manner. The report and associated external assessments are based on data and IMF staff projections as of June 15th, 2017.

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OVERVIEW

1. **The 2017 External Sector Report (ESR) documents the evolution of global external imbalances and provides an updated assessment of the external positions of 29 economies for 2016.** This *Overview Paper* complements the country assessments detailed in the *Individual Economy Assessments* paper, providing a global view, identifying cross-country patterns and discussing policies that should be considered to address excess imbalances from a multilateral perspective. This year's report provides a more detailed account of the process of arriving at the assessment of external positions and devotes special attention to the issue of persistent imbalances. The paper is organized as follows: *Section II* documents recent trends in external flow (i.e., current account) and stock imbalances (i.e., international investment positions) and exchange rates. *Section III* presents the normative assessment of external positions (Box 1) and *Section IV* discusses the outlook and policy recommendations. Finally, *Section V* focuses on large and persistent surpluses, exploring historical evidence on persistence and reversals, along with the role of corporations and households in driving saving-investment dynamics.

Box 1. External Assessments: Objective and Concepts

Current account (CA) deficits and surpluses can be desirable from an individual-country and global perspective. A country's ability to run CA deficits and surpluses at different times is key for absorbing country-specific shocks and facilitating a globally efficient capital allocation. Some countries may need to save through trade surpluses (e.g., due to an aging population); others may need to borrow via trade deficits (e.g., to import capital and foster growth). Similarly, countries facing temporary positive (negative) terms-of-trade changes may benefit from saving (borrowing) to smooth out those income shocks. Thus, deviating from strict external balance is often desirable both from individual-country and global standpoints. Yet, in some cases, deficits or surpluses can be excessive if they depart from the levels that are consistent with country fundamentals and desired policies. The ESR therefore distinguishes between CA *imbalances* and CA *gaps*:

- **CA imbalance** refers to any CA position different from zero, i.e., surpluses or deficits, without implying any judgement, which in principle may be warranted, too big, or too small.
- **CA gap, or excess imbalance**, is the difference between the actual CA (stripped of cyclical and temporary factors) and the level assessed by staff to be consistent with fundamentals and desirable medium-term policies (or "**norm**"). This staff-assessed gap reflects policy distortions vis-à-vis other economies identified in the External Balance Approach (EBA) models as well as other policy and structural distortions not captured by the model. A CA balance deemed to be "stronger" ("weaker") than implied by fundamentals and desired medium-term policies corresponds to a positive (negative) gap. Eventual elimination of such gap is desirable, though there may be good reasons for a gradual adjustment. **Excess surplus (deficit)** is also used to refer to a positive (negative) gap, irrespective of the sign of the actual CA balance. Assessments also include a view on the real effective exchange rate (REER)—normally consistent with the assessed CA gap. A positive (negative) **REER gap** implies an overvalued (undervalued) exchange rate. REER gaps do not necessarily predict future exchange rates, and may occur in any economy, including those with floating exchange rates.

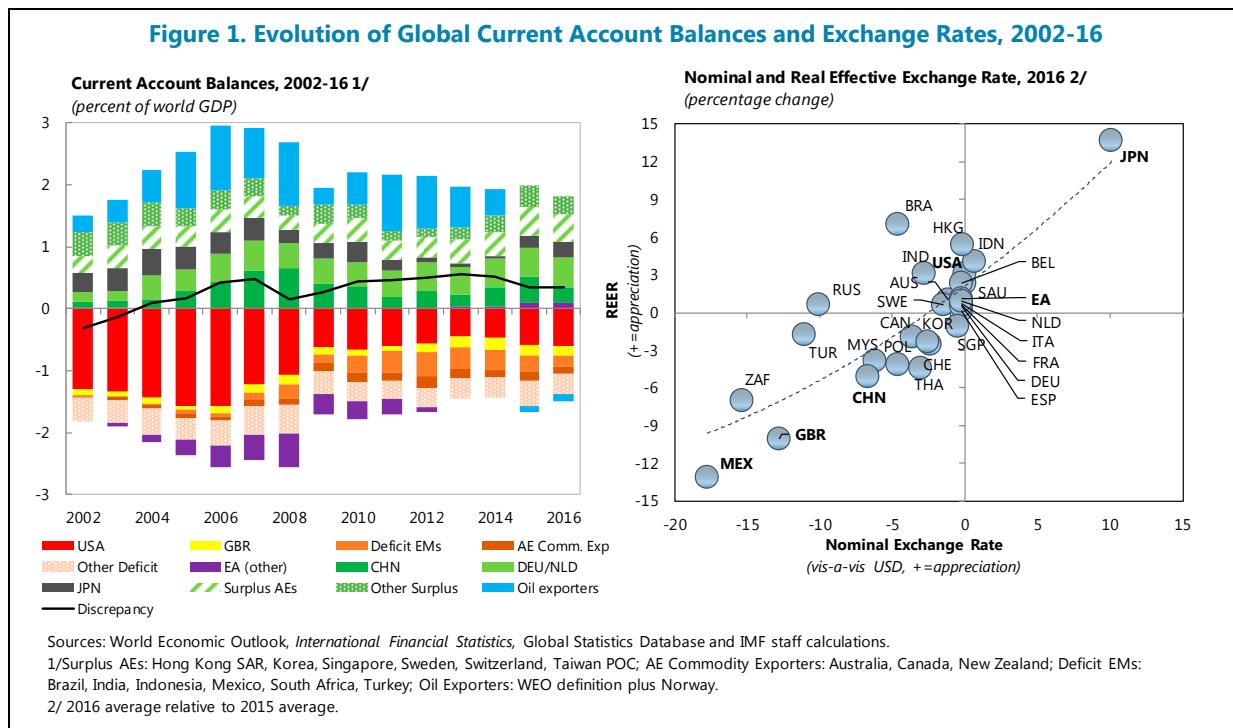
While external assessments focus on CAs and exchange rates, they take other indicators (e.g., financial account balances, international investment positions, competitiveness measures) into account. Assessments are **multilaterally consistent**, meaning that positive CA gaps in some economies must be matched by negative gaps in others.

EVOLUTION OF GLOBAL EXTERNAL IMBALANCES

This section documents recent trends in global current account imbalances and exchange rates, with a focus on the drivers of the reconfiguration observed since 2013 and the implications for International Investment Positions (IIP). This discussion is not normative—i.e., observed levels and shifts in external imbalances may not be undesirable per se if they reflect warranted effects of cyclical factors, country fundamentals, or desired policies. A normative view (i.e., of excess imbalances) is provided in Section III.

2016 Developments

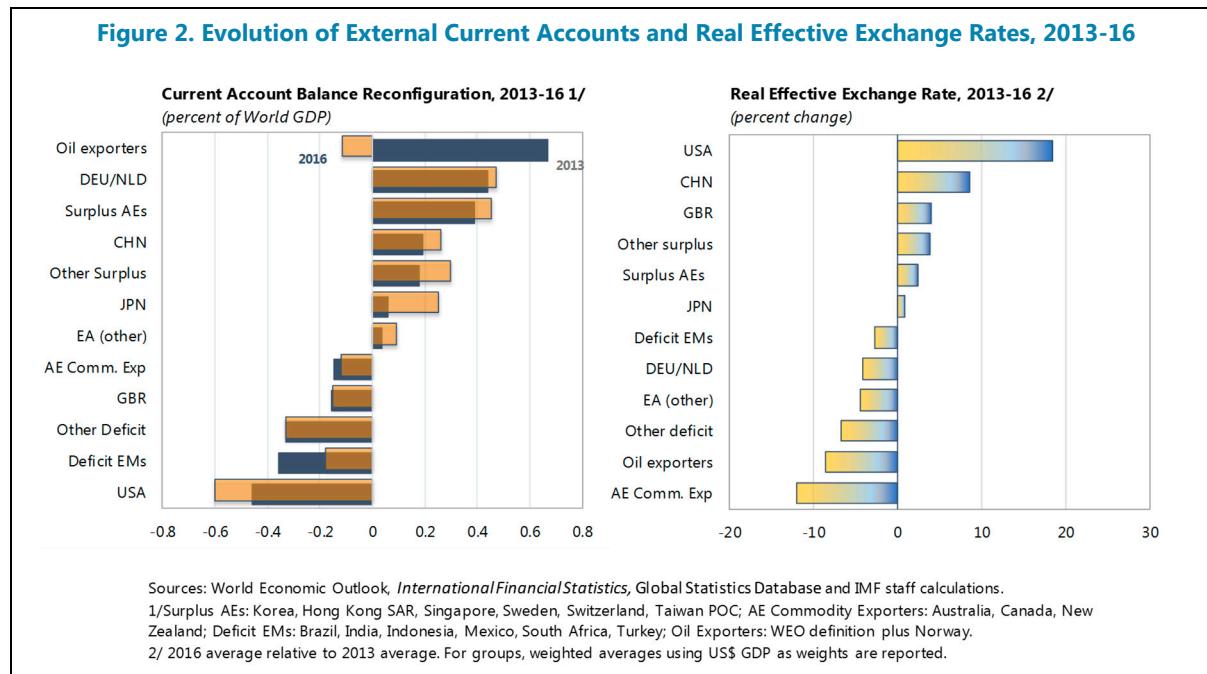
2. **Global current account imbalances were broadly unchanged in 2016, with only minor compositional shifts.** Following a marked narrowing in the aftermath of the Global Financial Crisis (GFC), overall global imbalances remained unchanged in recent years, at about 1.9 percent of world GDP (Figure 1, left panel). The configuration of current accounts saw only minor shifts during 2016, with some narrowing of China's surplus and of deficits of key emerging and developing economies (EMDEs)—Brazil, Indonesia, Mexico, Mexico, South Africa—amid a slightly higher surplus for Japan and a higher deficit for the United States. Most currencies, with the notable exception of the yen, depreciated in nominal terms against the U.S. dollar (Figure 1, right panel). These nominal changes vis-à-vis the dollar implied important real depreciations for the United Kingdom (related to Brexit), China (capital outflow pressures), and a few EMDEs, notably Mexico (partly reflecting trade-policy risks) and South Africa (partly due to political developments). These real depreciations were accompanied by large real appreciations for Japan as well as for some EMDEs (Brazil, Indonesia), whose currencies strengthened on the back of improving outlooks and policies. The euro and the U.S. dollar were broadly unchanged in real terms during 2016.



The Reconfiguration of Imbalances Since 2013

3. **The relatively small current account shifts during 2016 built on an earlier trend of increasing imbalances in AEs.** The most noticeable development since the narrowing of imbalances in the years immediately following the GFC was the reconfiguration that started in 2013. The latter was characterized by a marked shrinking of surpluses (into small deficits) in oil-exporting economies and a narrowing of current account deficits in EMDEs, accompanied by growing imbalances in AEs (Figure 2, left panel). The current constellation of imbalances entails an increased concentration in AEs—with large and persistent surpluses in some countries (Germany, Japan, Korea, the Netherlands, Singapore, Switzerland,

Sweden) and higher or unchanged deficits in the United States and United Kingdom (see also Table 1). Real exchange rates have, for the most part, supported these current account shifts (Figure 2, right panel).



4. **The reconfiguration of global imbalances since 2013 was driven by a confluence of factors, including the sharp drop in commodity prices, the uneven demand recovery in systemic economies, and related differences in policies (Figure 3).** The fall in commodity prices—particularly sharp for oil—redistributed income away from commodity exporters and towards commodity importers, while differences in the cyclical positions among systemic economies supported stronger net import growth and currencies in the United States and the United Kingdom (with the effects of Brexit still to play out), especially relative to the euro area and Japan. Yet, the observed reconfiguration of current accounts suggests that policy responses to these shocks (and other idiosyncratic factors) also played a key role.

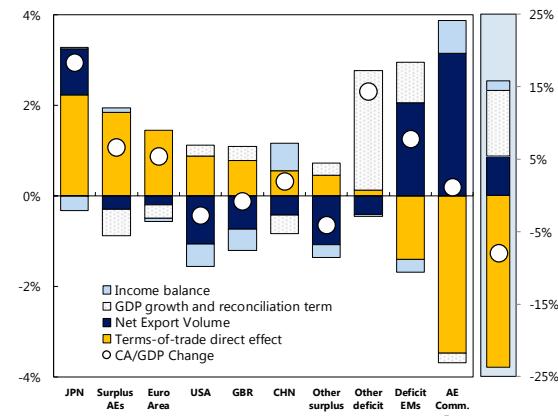
- Shifting current accounts in **commodity exporters** were dominated by the direct price effects (income losses associated with lower terms of trade)¹, although with some noticeable differences across countries. For the group of oil-exporting countries as a whole, the terms-of-trade income shock was particularly pronounced, and net export volumes offset only a small portion of those income losses—mostly due to the constraints played by rigid exchange rate arrangements, although fiscal consolidation supported some compression of domestic demand (e.g., in Saudi Arabia). This pattern of adjustment to changing terms of trade contrasted with those in other AE and EMDE commodity exporters, where expanding net export volumes, supported by weaker currencies, nearly fully offset (Australia, Canada, New Zealand) or more than offset (Brazil, Mexico, South Africa) the

¹ Current account changes can be decomposed mainly into (i) the direct price effect, at constant volumes, and (ii) the response of export and import volumes, at constant prices. See Technical Appendix I for further details.

exogenous price changes. In some cases, tighter financial conditions and idiosyncratic shocks (Brazil, South Africa) contributed to adjusting trade volumes (Box 2).

- Among **commodity importers**, the extent of spending of the terms-of-trade income gains reflected mainly differences in cyclical positions and policies. In the United States and the United Kingdom, terms-of-trade income gains were more than offset by trade volumes supported by stronger domestic demand and appreciating currencies. Similarly, trade volumes in China showed a large offset of the terms-of-trade income gains, although in this case reflecting policy stimulus. In contrast, expanding net export volumes added to the terms-of-trade gains in Japan, while in the euro area spending of the terms-of-trade income shock was very limited—in both cases amid weakening currencies as domestic demand recovered more slowly. Similar behavior was visible in other large surplus AEs (Korea, Sweden, and financial centers) where only a fraction of the terms-of-trade income gains was spent. Excepting in China, and in contrast to previous years (2010-13), fiscal policy had a limited role in driving imbalances since 2013, as consolidation was more gradual and evenly distributed among deficit and surplus economies.

Figure 3. Contributions to Change in Current Account Balance, 2013-16 (in percent of group GDP) 1/



Sources: IMF *International Financial Statistics*, and IMF staff estimates.
1/ 2013-16 change. Deficit and surplus countries are classified based on CA balance in 2013. Country groups as in Figure 1. See details of the decomposition in Technical Appendix 1.

Box 2. External Adjustment in Large Deficit EMDEs¹

The sharp narrowing of current account deficits in large EMDEs (Brazil, India, Indonesia, Mexico, South Africa and Turkey) since 2012-13 was driven by a combination of domestic and external factors.

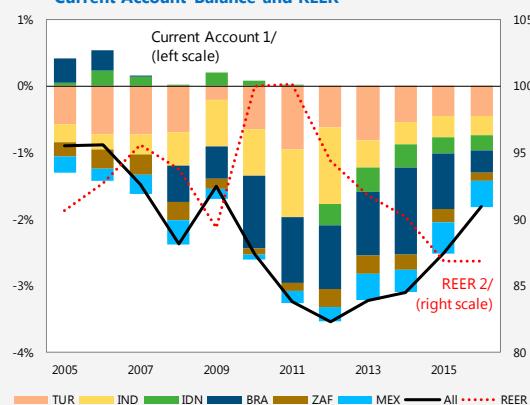
For most of these countries (excepting India), rapidly narrowing external deficits were driven by **sharp domestic demand slowdowns**, reflecting in part **domestic idiosyncratic factors**. This was especially marked in Brazil and South Africa, where political uncertainties and governance problems weighed on investor sentiment during part of 2013-16.

The impact of such domestic developments was exacerbated by a general tightening of **external financial conditions** on prospects of U.S. monetary policy normalization, and in some cases (Brazil, Mexico), a decline in **terms of trade**. Meanwhile, improving terms of trade contributed to the current account strengthening in Indonesia, South Africa, Turkey and India.

Policies generally supported the narrowing of external deficits. Weaker real exchange rates in most cases helped buffer the negative impact of external shocks, while tighter fiscal policies contributed to the adjustment in a few cases, especially South Africa.

¹ Prepared by Jaebin Ahn.

Current Account Balance and REER



Sources: WEO, *International Financial Statistics* and IMF staff calculations.

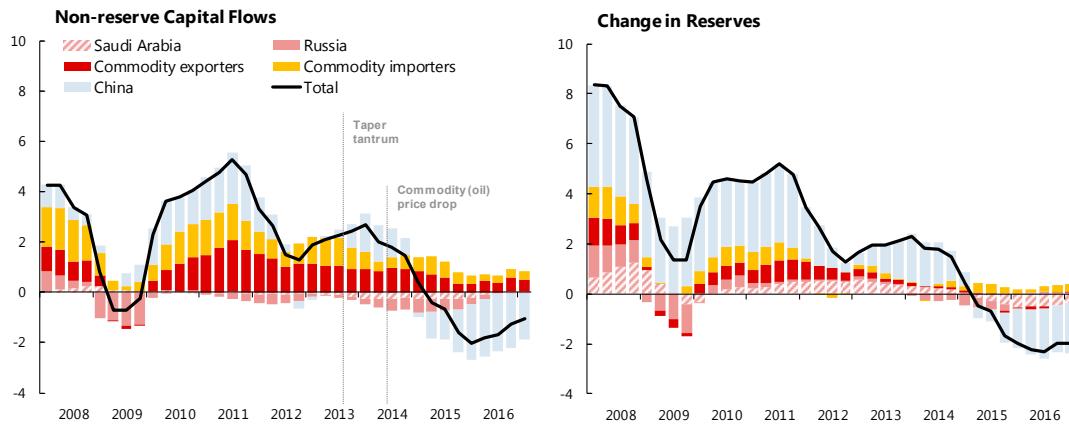
1/ In percent of group GDP.

2/ REER Index (2010=100). Weighted average using US\$ GDP as weights.

5. The patterns of private capital flows and foreign exchange intervention also shifted markedly during this period (Figure 4).

- Overall net non-reserve flows to EMDEs were dominated by China's abrupt reversal (from net inflows to outflows), with the latter reflecting increased uncertainties regarding the country's growth prospects and financial stability concerns amid a process of gradual opening of the capital account.² In sharp contrast to previous years (see Box 3), China's foreign exchange intervention took the form of reserve sales, leading to cumulative reserve losses of about 7 percent of GDP during 2014-16 but preventing an even greater weakening of the renminbi. Net non-reserve outflows were also sizable for Russia and Saudi Arabia (although they stabilized in 2016), partly reflecting weaker growth prospects from sharply lower oil prices and geopolitical tensions (Russia). To deal with terms-of-trade and confidence shocks, and prevent an even more rapid slowdown in demand, Russia and Saudi Arabia both sold sizable amounts of reserves.³
- In other EMDEs, changes in non-reserve flows were less dramatic. Net inflows slowed, reflecting a combination of lower growth prospects, higher borrowing costs (especially for commodity exporters), and improved terms of trade for commodity importers (which reduced demand for external financing). In most countries, foreign exchange intervention was limited during 2013-16 as a whole (see also Figure 12).
- Bouts of financial turbulence in global markets—in part due to developments in China—were reflected in safe-haven flows into financial centers, which accumulated foreign exchange reserves as they intervened to mitigate the impact of large flows. Central bank balance sheets in Switzerland and Hong Kong SAR expanded markedly, with cumulative foreign exchange purchases reaching about 30 and 16 percent of GDP, respectively, during 2014-16.

Figure 4. Non-reserve Capital Flows and Reserve Accumulation in EMDEs, 2008-16
(percent of group GDP, 4-quarter moving average)



² Enforcement of capital controls has been strengthened more recently.

³ Reserve losses during 2014-16 reached 8 percent of GDP in Russia and exceeded 30 percent in Saudi Arabia (fully unwinding the accumulation of the previous three years), amid current account deficits since 2015.

Box 3. Reserve Accumulation and Global Imbalances: A Longer-Term Perspective¹

A common perception is that global current account (CA) imbalances have been driven by mercantilist policies in surplus countries. At the center of the mercantilism debate is the role played by reserve accumulation and foreign exchange intervention (FXI), although the use of this policy instrument may also reflect other motives (e.g., the need for liquidity buffers, or a desire to mitigate the effects of global capital flow cycles). Taking a longer-term view, this box sheds light on the role FXI policies may have played in driving global imbalances since the early 2000s.

The box chart below provides a way to visualize the relation between CAs and reserve accumulation. Along the diagonal dotted line in each panel, net non-reserve capital inflows equal the CA deficit, so the change in official reserves is nil. Other things being equal, increased purchases of international reserves will raise net private capital inflows, depreciate the currency and strengthen the CA, moving the economy up and to the right. Increased reserve sales move the economy down and to the left.

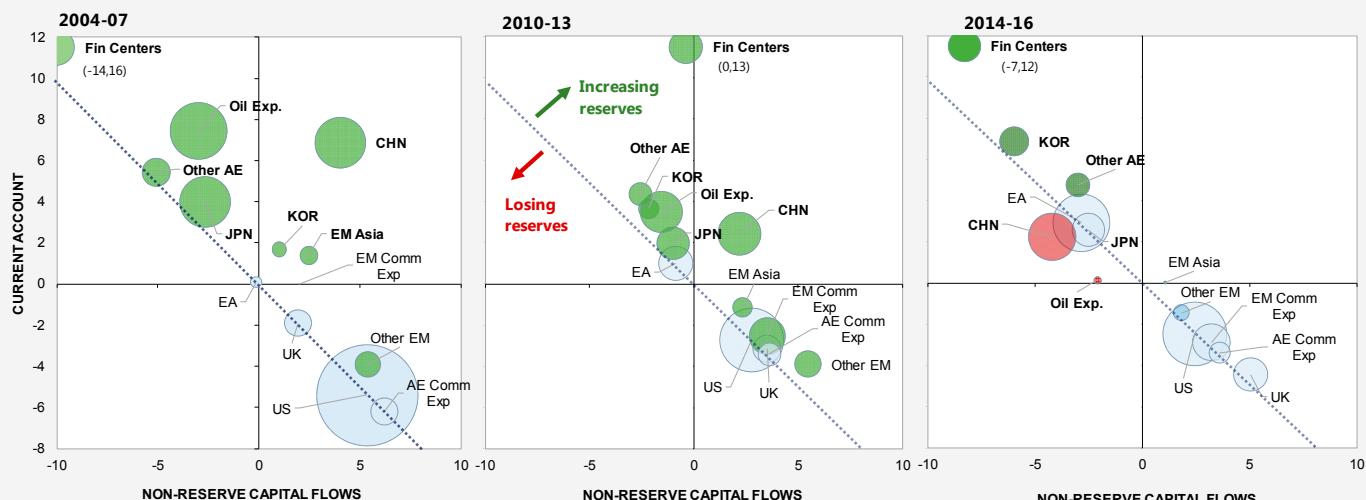
Pre-GFC. In the years preceding the GFC, when global imbalances reached their peak, large external CA surpluses—primarily in China, Japan, oil exporting countries and other EM economies—were indeed associated with significant reserve accumulation (Box Figure, left panel).

2010-13. In the years immediately following the GFC, CA imbalances of economies with previously large surpluses narrowed markedly—except for financial centers—reflecting primarily a sharp slowdown in external demand as key advanced economies deleveraged (Box Figure, mid panel). Facing sustained capital inflows—in part due to accommodative monetary conditions in advanced economies—reserve accumulation continued in many of these economies, but at a significantly slower pace. Meanwhile, reserve accumulation increased sharply in financial centers, amid sustained CA surpluses and increased capital flows. Facing sizable capital inflows, some emerging economies gained reserves despite negative CAs.

2014-16. Since 2013, the configuration of CA imbalances and reserve accumulation has shifted further (Box Figure, right panel). CA surpluses have become more concentrated in systemic advanced economies (euro area and Japan)—without reserve accumulation—while large reserve *decumulation* in oil exporters (reflecting lower oil prices) and China has helped to keep global imbalances in check. With slowing capital inflows, financial centers have continued accumulating reserves although at a significantly slower pace.

Beyond the motives behind reserve accumulation, this longer-term view suggests that its role as a possible driver of CA imbalances has diminished significantly over time—and recently reversed in some economies, notably China. Whether this shift reflects changing exchange rate policies (i.e., policy reaction functions) or simply a change in the external environment remains to be seen. But the configuration of global imbalances today points to factors other than currency intervention policy as the main drivers.

Non-reserve capital flows, current accounts and reserve changes, 2004-16 1/
(percent of GDP)



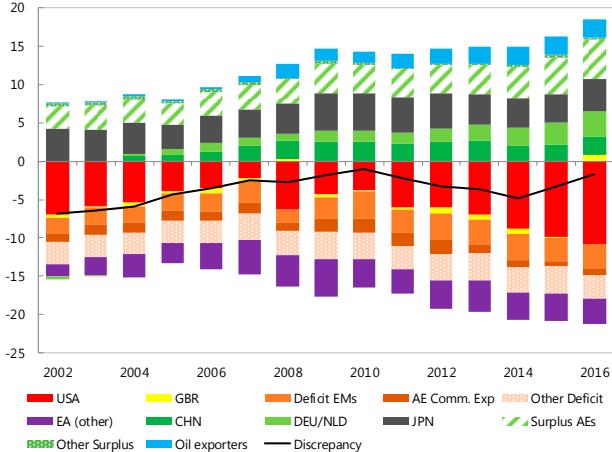
¹ Prepared by Gustavo Adler.

Implications for Stock Imbalances

6. Sustained current account imbalances since the GFC have contributed to diverging stock positions. After slowing in the immediate aftermath of the GFC, stock imbalances resumed their widening trend in recent years (Figure 5) reflecting, on the creditor side, the accumulation of net foreign assets mainly by euro area surplus countries (Germany, the Netherlands) and other AEs (Hong Kong SAR, Korea, Singapore, Sweden). The growth in creditor positions was mirrored almost entirely by a widening of the U.S. net debtor position, although the latter reflected also large valuation changes.⁴ Flow imbalances played an important role in driving the global widening of stock positions—as most countries that were net creditors in 2010 have run current account surpluses since then, while net debtors have run deficits. Excepting oil exporters with large creditor positions—that recently shifted to running current account deficits—and some debtor euro area countries (Italy, Spain)—that shifted to running current account surpluses—the recent rotation of current account imbalances has not materially changed their contribution to stock dynamics.

7. Cumulative current account imbalances, however, have been partly offset by valuation changes in many cases. While their dynamics going forward is uncertain, valuation changes on stock positions tended to play a NFA-stabilizing role since the GFC, displaying the opposite sign to current account balances for the most part (Figure 6). Countries with large and persistent current account surpluses, such as China, Germany, Japan, experienced valuation losses, containing the increase in

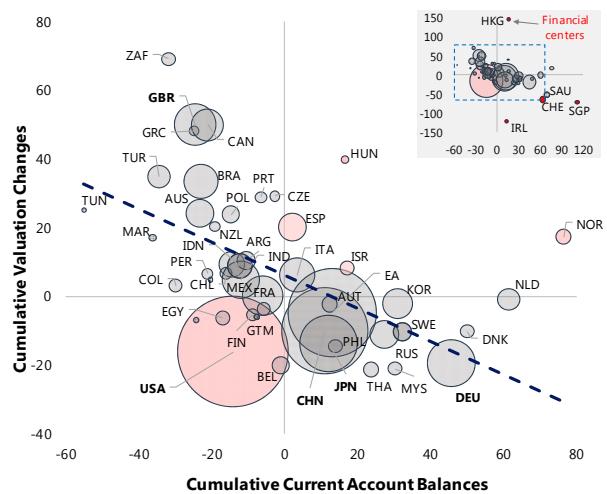
Figure 5. International Investment Positions, 2002-16 1/ (percent of world GDP)



Sources: World Economic Outlook and IMF staff calculations.

1/ Surplus AEs: Korea, Hong Kong SAR, Singapore, Sweden, Switzerland, Taiwan POC; AE Commodity Exporters: Australia, Canada, New Zealand; Deficit EMs: Brazil, India, Indonesia, Mexico, South Africa, Turkey; Oil Exporters: WEO definition plus Norway.

Figure 6. Flow imbalances and valuation changes, 2010-16 1/ (percent of GDP)



Sources: International Financial Statistics and IMF staff calculations.

1/ Dot sizes are proportional to countries' US\$ GDP.

2/ Valuation changes are calculated as the difference between NFA changes and cumulative current account balances (see details in Technical Appendix II).

⁴ Stock positions of France, India and Mexico also weakened slightly. Meanwhile, the U.K.'s stock position moved into positive territory in 2016, reflecting post-Brexit valuation changes.

(continued)

their NFA position that would have occurred otherwise. Conversely, countries with persistent current account deficits, such as the Brazil, Canada, South Africa, or the United Kingdom, experienced valuation gains, mitigating the weakening of their NFA positions.⁵ An important exception to this pattern was the United States, with both current account deficits and valuation losses, mostly due to the appreciation of the U.S. dollar (which increased the value of U.S. foreign liabilities relative to assets). Valuation changes played a particularly important stabilizing role in some financial centers, although also raising questions about IIP and BOP measurement issues in these economies (see Technical Appendix II).

NORMATIVE ASSESSMENT OF EXTERNAL POSITIONS

This section assesses current external imbalances—and their recent shifts—from a normative standpoint (i.e., whether they are deemed excessive relative to medium-term fundamentals and desired policies—see Box 1). It also discusses the process for arriving at the external assessments, and presents estimates of excess imbalances for 2016, while highlighting the contributions from key policy distortions.

How External Assessments Are Conducted

8. **The ESR assessments entail comparing actual current account balances (stripped of temporary factors) with those deemed consistent with medium-term fundamentals and desired policies (dubbed “current account norms”) for individual countries.** To this end, and as in previous years, assessments of external positions were conducted for 28 systemic economies plus the euro area that account for more than 85 percent of global GDP. The ESR exercise combines numerical inputs from statistical cross-country models with country-specific judgements based on IMF country teams’ knowledge and insights of each economy. Judgement is applied carefully and transparently to derive a multilaterally consistent set of norms.

9. **Key inputs for the external assessments are the numerical estimates from the IMF’s External Balance Assessment (EBA) models.**⁶ The EBA models estimate the average historical relationship between the current account or real exchange rate (REER) and a set of country fundamentals and policy variables from a panel of 49 countries over 28 years (1986-2013). Fundamentals include variables known to drive aggregate saving and investment rates (and thus the external current accounts), like an economy’s income level, its medium-term growth potential, the perceived quality of its institutions, demographic characteristics (see Box 4), and its net foreign asset position, as well as other features such as whether the country is an oil exporter, financial center, or enjoys reserve currency status. Policy (or policy-related) variables include the fiscal stance, health spending (a proxy for the extent of social safety nets), accumulation of foreign currency reserves, an index of capital account openness, and credit as a share of GDP. The model also estimates the impact of changes in terms of trade and the

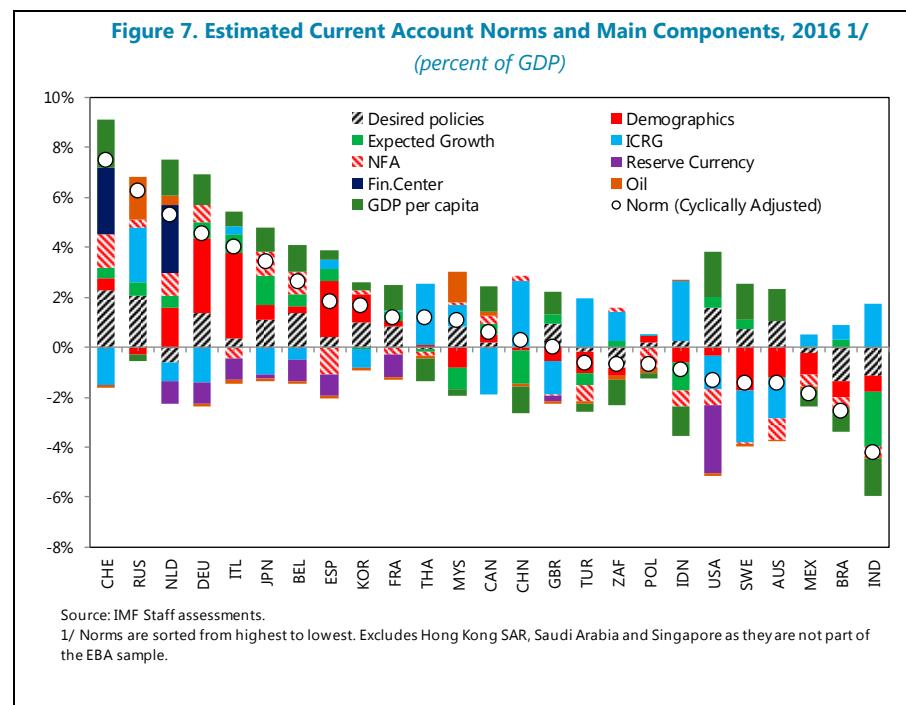
⁵ Recent real depreciations in deficit EMDEs entailed positive IIP valuation changes, thus helping to both narrow their flow imbalances and strengthen stock positions through valuation changes. This pattern points to a welcome break from the past trade-off between correcting flow imbalances (with exchange rate depreciation) and exacerbating stock imbalances. See related discussion in *2016 External Sector Report*.

⁶ For a full description of the EBA methodology see [IMF Working Paper 13/272](#). Recent additions and modifications to the methodology (e.g. introduction of level based REER model and demographic refinements) can be found in [Annex I of the 2015 External Sector Report](#).

output gap, thus allowing construction of a cyclically-adjusted measure of the current account balance. Beyond the current account and REER models, EBA also includes a separate exercise that focuses narrowly on the sustainability of external stock positions. That exercise informs assessments in cases where external stabilization is a dominant concern.

10. To convert the estimated relationships into current account (or REER) norms, policy variables are assessed at their medium-term desired levels. Desired policies are identified by IMF country teams and assessed within a multilaterally consistent framework. For example, if a country team assesses that a country's fiscal stance is too tight relative to the medium-term desired level, the actual fiscal stance is replaced with the desired level of this policy variable for computing the norm. Moreover, and to ensure multilateral consistency, all variables, including the identified policy gaps (or difference between actual and desired policies) are evaluated relative to the weighted average of the sample.

11. Estimated current account norms vary substantially across countries (Figure 7). *Estimated norms were generally positive (and large)*—for 2016 as well as in previous years—in countries with higher income per capita, lower projected output growth, higher longevity, and higher share of working age population (e.g. Switzerland, the Netherlands, Germany, Japan, Italy). *Estimated current account norms tended to be negative (and large)* in poorer countries with, higher growth potential, and faster population growth (e.g., India, Brazil, Mexico). However, *other characteristics were also at play*. For example, the U.S. current account norm is lower compared to peers because of the “exorbitant privilege” of having a reserve currency (i.e., reserve currency status reflects relatively high global demand for assets denominated in that currency, which tends to strengthen the currency and thus support larger current account deficits), other things being equal. By contrast, for some EMDEs, perceived institutional weaknesses—which can affect negatively an economy's ability to borrow—push the estimated norms up.

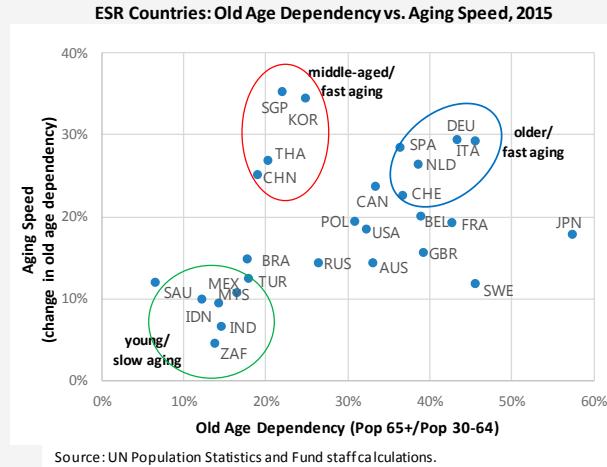


Box 4. Demographics and the EBA Current Account Norm¹

How are demographics modeled in EBA? The EBA current account (CA) regression has three demographic variables: the old-age dependency ratio, population growth, and aging speed. They are expressed in deviations from the world average since—as is the case with other regressors—only the relative magnitude of each variable should affect the overall-saving investment balance. Consistent with the life-cycle model, a higher **old-age dependency** ratio, and therefore a higher share of consumers/borrowers relative to savers, should imply a lower CA. **Population growth**, if driven by birth rates, should also exert a negative impact by increasing the youth dependency ratio and therefore the share of non-savers in the population. That said, the impact could be more ambiguous if population growth is driven by growth in the working-age population (e.g., because of migration), as this may imply more saving, but also more investment to stabilize the capital-labor ratio. Meanwhile, **aging speed**, defined as the expected increase in the old-age dependency ratio 20 years forward, should exert a positive effect on saving and the CA, driven by higher life expectancy and the resulting need for more life-cycle saving. To capture the non-linearities of demographics, interaction terms are also included (these were added with the 2015 model refinements).² Specifically:

- The relative dependency ratio is interacted with the aging speed: with a higher aging speed, a given increase in the dependency ratio implies a higher survival probability of the young cohort, increasing the need for life-cycle saving, and offsetting the negative composition effect of higher dependency ratio.
- Similarly, the relative aging speed is interacted with the dependency ratio. With a higher dependency ratio, a given increase in the aging speed implies also a higher survival probability of the younger cohort and a greater need for life-cycle saving.

How do demographic contributions vary across countries? EBA estimates of the different demographic inputs (and their interaction terms) have the signs that theory would suggest and are mostly statistically significant. The demographic contributions to the norms vary significantly (Box Figure). Countries with relatively high aging speeds and already high dependency ratios (e.g. Germany, Italy, Spain, the Netherlands) tend to show larger demographic contributions, followed by countries with high aging speeds but somewhat lower dependency ratios (China, Korea, Singapore, Thailand). On the other end of the spectrum, in countries that are young and have low aging speeds (India, Indonesia, Malaysia, Mexico, Saudi Arabia, South Africa), the contributions of demographics tend to be negative. However, the contributions of demographics to CA norms are expected to evolve gradually over time as countries jointly age and advance at different pace with their demographic transitions.



While the EBA provides for a multilaterally consistent and rich treatment of demographics, in some cases, country-specific circumstances are not always properly captured. For example, while the aging speed variable is generally a good proxy for longevity risk across working-age cohorts, in countries with current high old-age dependency but higher fertility rates over the past few decades (e.g. Sweden, Denmark) the aging speed variable may underestimate the need for lifecycle saving.

¹ Prepared by Mai Dao.

² Further details are provided in Annex I of the 2015 External Sector Report.

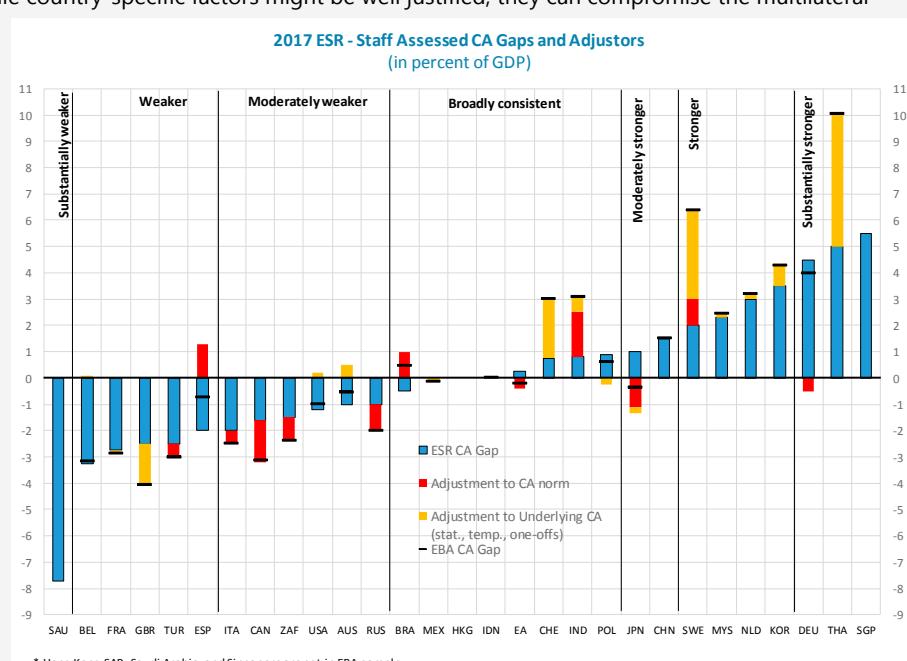
12. Cyclically-adjusted current account balances and EBA-estimated norms are adjusted for country-specific temporary factors and structural features, respectively, that go beyond what the EBA models can capture. Adjustments can be applied to both the estimated underlying current account position—to account for temporary factors that are insufficiently captured by standard cyclical adjustment techniques—and/or the *estimated norms*—to account for country features not included in the EBA models, provided there is strong and clear justification. For 2016, these adjustments (see also Box 5

Box 5. Country-Specific Adjustments to the EBA Model Current Account Gaps¹

The EBA model current account (CA) gaps, defined as the difference between the cyclically-adjusted or underlying CA balance and the EBA-estimated CA norm, are multilaterally consistent by design. However, since the EBA models cannot capture all country-specific factors, the estimates are accompanied by staff judgement to arrive at *staff-assessed CA gaps*. This box documents staff adjustments introduced in the 2016 assessments (see Box Figure and the 2016 ESR individual economy assessments paper).

- **Adjustments to the underlying CA.** These staff adjustments generally reflect additional cyclical/temporary factors that are not fully captured by EBA models, or statistical issues related to the CA measurement. For example, staff adjusted the cyclically-adjusted CA balance for larger-than-estimated impacts of terms-of-trade changes (Thailand, Malaysia, and India), continued delays in the political transition (Thailand), temporarily high energy imports (Japan), and temporarily low income flows (United Kingdom). In addition, adjustments were made for mismeasurement arising from merchanting and financial-center activities (Korea, Sweden, Switzerland). These adjustments are intended to reflect more accurately the underlying CA balance (see Technical Appendix II).
- **Adjustments to the CA norm.** These relate to certain structural features of an economy (fundamentals, desired policies, or financing risks, as assessed by country teams) that are not properly captured by the EBA CA regression. For example, given external financing risks from high net or gross external liabilities, the staff norm can be guided by estimates from the external sustainability approach (Brazil, India, Spain), to stabilize or strengthen the net international investment position as a share of GDP over the medium term. Demographic adjustments have been made where the estimated aging speed understates saving due to the impact of more recent increases in fertility rates (Sweden), or where it overstates the saving rate as the model does not capture the recent increases in migration (Germany). For some countries, CA norms were adjusted to consider factors that are not in the EBA CA model, such as projected changes in structural characteristics (Japan) and the low relative productivity of the non-energy sector (Canada).

Multilateral consistency. While country-specific factors might be well justified, they can compromise the multilateral consistency of the assessed gaps. Thus, arriving at staff assessments requires ensuring both their evenhanded application across countries, and also that adjustments (outside EBA results) in some countries are offset by the others. For the 2016 assessments, the median staff adjustment was roughly 0.4 percent of GDP (compared to the median standard deviation of the EBA estimated CA norm of 1 percent of GDP), and the overall discrepancy of staff assessments was small (excess deficits exceeded excess surpluses by only 0.07 percent of global GDP).



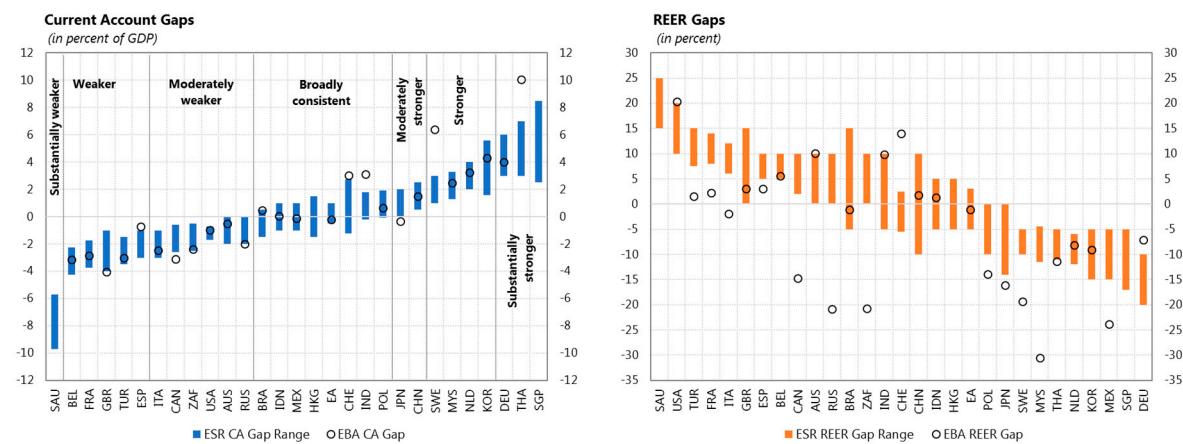
¹ Prepared by Ruo Chen and Ruy Lama.

and the 2017 *Individual Economy Assessments* companion paper) were small on average. As a result, for most countries the *staff-assessed* external gaps—i.e., after introducing adjustments—were close to the EBA gaps, especially for the assessment of current accounts (Figure 8).⁷ Staff-assessed gaps are presented in ranges, to reflect the uncertainties inherent in this exercise, which are generally consistent with the model's standard errors (see also Table 2).

2016 Excess Imbalances

13. **Excess current account imbalances for 2016 show a similar configuration to that of previous years** (Figure 8 and Table 5). External positions were deemed “substantially stronger” than justified by medium-term fundamentals and desirable policies (excess surpluses above 4 percent of GDP) in Germany, Singapore, and Thailand; “stronger” (excess surpluses in the range of 2-4 percent of GDP) in Malaysia, Korea, Sweden, and the Netherlands; and “moderately stronger” (excess surpluses in the range of 1-2 percent of GDP) in China, and Japan. On the other side of the spectrum, external positions were considered “substantially weaker” (excess deficit of more than 4 percent of GDP) in Saudi Arabia; “weaker” (excess deficits in the range of 2-4 percent of GDP) in Turkey, the United Kingdom, and some euro area countries (Belgium, France and Spain); and “moderately weaker” (excess deficits in the range of 1-2 percent of GDP) in Australia, Canada, Italy, South Africa, and the United States. Meanwhile, external positions were deemed “broadly in line” with medium-term fundamentals and desirable policies in Brazil, Hong Kong SAR, India, Indonesia, Mexico, Poland, and Switzerland. The euro area as a whole was also assessed as “broadly in line,” as positive excess imbalances in some countries (mainly Germany and the Netherlands) were offset by negative excess imbalances elsewhere.

Figure 8. Staff Assessed vs. EBA Estimated Current Account and REER Gaps 2016 1/



Source: IMF Staff assessments.

1/ Sorted by the mid-point of the staff-assessed gap. Hong Kong, Saudi Arabia and Singapore do not have EBA estimates. For Saudi Arabia, the current account gap reflects a fiscal policy gap.

2/ REER gap is defined as the average of index- and level-based regressions. For Saudi Arabia, the REER gap is not identified.

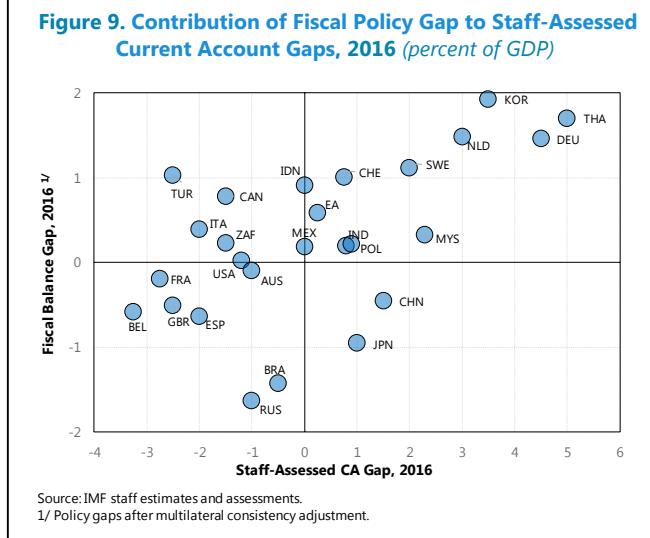
⁷ While all three EBA models (current account, real exchange rate index, and real exchange rate level) were used to assess countries' external positions, the current account model tended to carry a heavier weight in most assessments.

14. Staff REER assessments map closely to current account assessments, except in a few cases.

Exchange rate assessments are, for the most part, based on staff's views on the current account (mapped into exchange rates by using trade elasticities estimated separately). Yet, discrepancies between current account and real exchange rate staff assessments may arise in the context of sharp real exchange rate movements deemed transitory or yet to be fully reflected in the current account. There were three cases in 2016. While Japan's current account remained moderately stronger than warranted by fundamentals, its real exchange rate was assessed to be broadly in line, reflecting the yen's sharp appreciation during 2016. China's real exchange rate remained broadly in line with fundamentals, despite a moderately stronger current account, reflecting a projected further narrowing of the current account surplus. Mexico's real exchange rate was deemed moderately undervalued while its current account was considered broadly in line, on expectations that protectionist risks, which led to a sharp depreciation in 2016, will recede somewhat.⁸

15. While the factors accounting for the staff-assessed current account gaps vary, some common features can be identified. Staff-assessed gaps can be decomposed into "*identified policy gaps*" and "*other*" distortions. *Identified gaps* refer to the differences between actual and desired policies as included in the EBA models (Table 3) and reflect domestic policy gaps *relative* to those of the rest of world.⁹ It is worth noting that even in countries where the overall identified policy gap is small, individual policies might still be important if their contributions offset one another. *Other gaps* are intended to reflect distortions not explicitly modeled in EBA (partly due to data limitations) that generate suboptimal saving and investment decisions.

- In many "**excess deficit**" countries (Belgium, France, Spain, Russia, the United Kingdom), fiscal stances that were weaker than desirable (i.e., larger cyclically-adjusted fiscal deficits than desirable over the medium term) contributed to the negative overall gap, with higher-than-desirable health spending playing a role in the United States (Figure 9, lower left quadrant).¹⁰ That said, other structural factors holding back saving and competitiveness were also important, especially in countries where the identified gaps had a limited role (Australia, Canada, Italy, South Africa, Turkey).



⁸ This assessment is partly based on the observed path of the Mexican peso since late 2016.

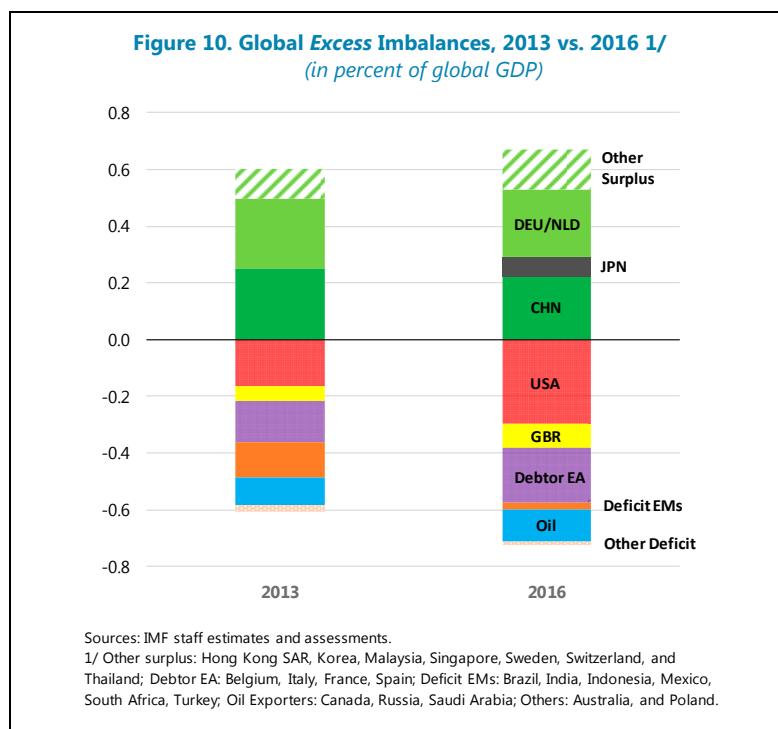
⁹ The overall policy gap includes a domestic and foreign (world-average) component. Thus, a portion of it reflects policy distortions in the rest of the world—highlighting the need for collective action to reduce excess imbalances. Taking all identified policies together, the foreign component was estimated at 0.9 percent of GDP in 2016.

¹⁰ Although not part of EBA, Saudi Arabia's large external gap in 2016 reflects mainly a fiscal gap. A large, sustained and well-paced fiscal adjustment is needed over the medium-term to reduce the external gap.

- Similarly, in many “**excess surplus**” countries (Germany, Korea, Sweden, Thailand, the Netherlands), tighter-than-desirable fiscal stances boosted current account positions, with insufficient health spending also contributed in some cases (China, Korea). Policies to address other distortions—such as structural features that constrain investment or lead to excess precautionary saving—remain necessary in countries with overall positive gaps, particularly those that need also gradually to tighten fiscal and credit policies (Japan and China). In 2016, foreign exchange intervention did not play a significant role in explaining excess imbalances.

Shifting Excess Imbalances Since 2013

16. **Since 2013, excess current account imbalances have rotated somewhat with increased concentration in AE** (Figure 10).¹¹ Noteworthy changes include the narrowing of excess current account surpluses in China and Malaysia, and the narrowing of excess deficits in key EMDEs (Brazil, India, Indonesia, Russia, South Africa, Turkey). However, in some large AEs, excess deficits have increased (France, Italy, the United Kingdom, the United States), and in others excess surpluses widened (Japan, Sweden, the Netherlands, Thailand, Singapore). Excess current account surpluses in Germany and Korea have remained large and broadly unchanged since 2013.

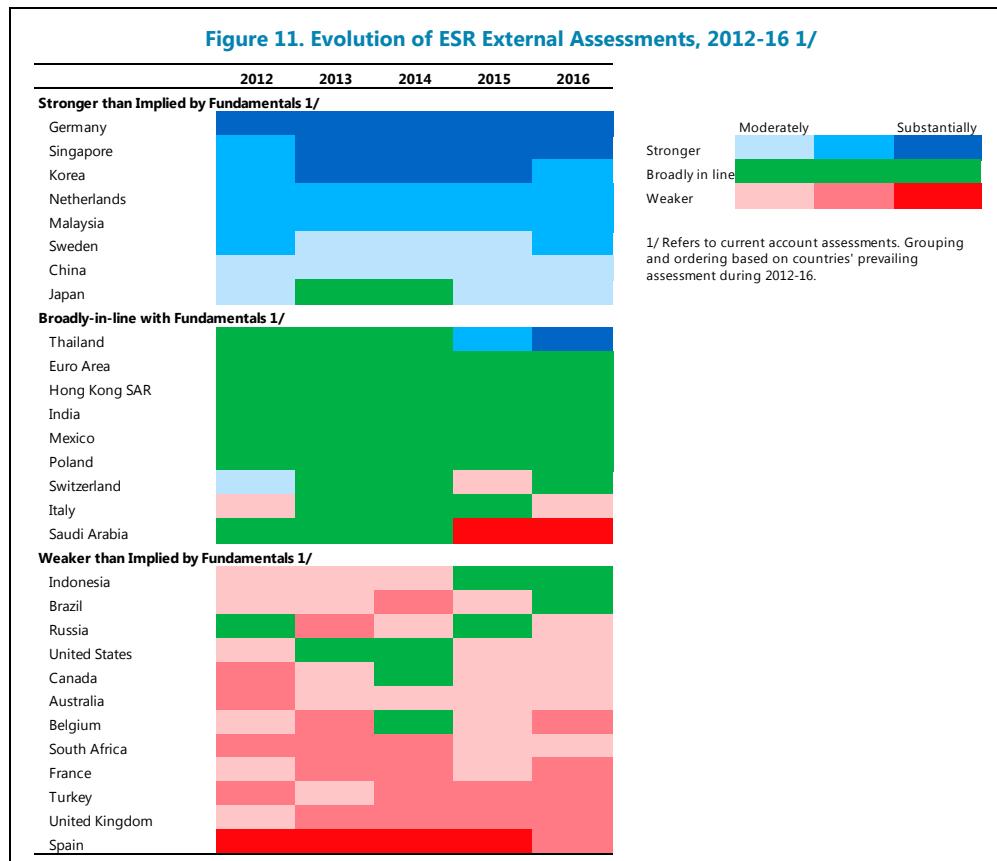


17. **Overall, this rotation resulted in a small increase of excess global imbalances.** Total excess imbalances amounted to about 0.7 percent of global GDP in 2016—roughly the equivalent of one-third

¹¹ The evolution of excess imbalances reflected both variations in the staff-assessed cyclically-adjusted current accounts as well as changes in the staff-assessed current account norms—the latter reflecting shift in economic fundamentals. As such, external assessments are a snapshot at a certain point in time, not a fundamental judgment about the economy's immutable nature.

(continued)

of total global imbalances.¹² The overall size of excess imbalances edged up relative to 2013, as narrowing excess surpluses and deficits mainly in EMDEs have been more than offset by larger excess imbalances in advanced economies and oil exporters. Besides being increasingly concentrated in AEs, another distinguishing feature has been the persistence of large excess surpluses (Figure 11), a feature that is further analyzed in Section V.



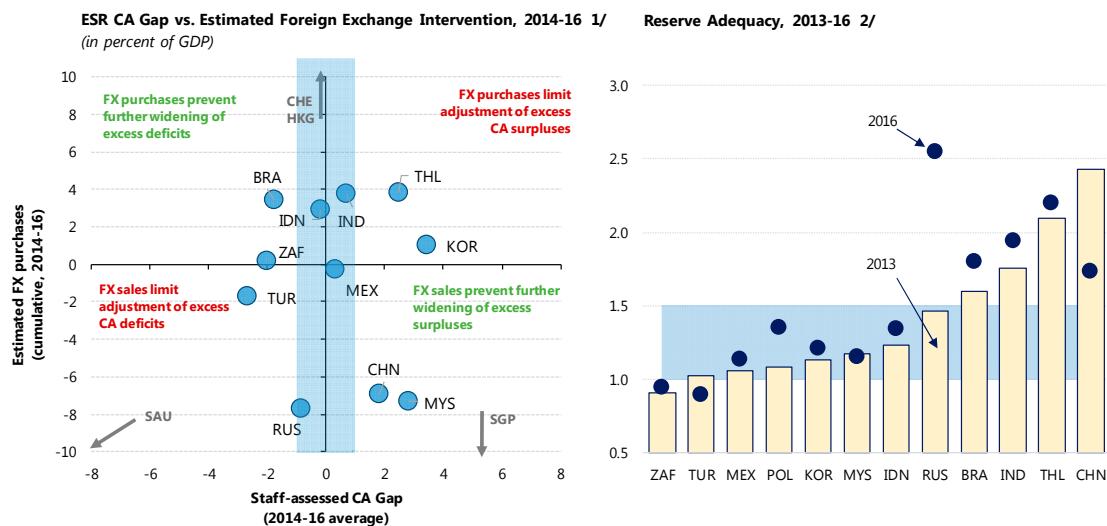
18. In many cases, policies undertaken since 2013 contributed to the reconfiguration of excess imbalances.

- Tighter **fiscal and credit policies** supported the reduction of excess deficits in some EMDEs (Indonesia, South Africa, Turkey), while an easing of these policies (beyond what would be desirable over the medium term) contributed to the narrowing of excess surpluses in China. Meanwhile, fiscal consolidation supported the widening or persistence of excess surpluses in key AEs (Germany, Japan, Korea), but did little to reduce excess deficits in other AEs (Australia, Canada, the United Kingdom, the United States).
- With a few exceptions, **foreign exchange intervention** was limited or consistent with external rebalancing (Figure 12). China and Malaysia, which in 2013 had stronger-than-warranted external positions, sold significant reserves to support their currencies, without unduly compromising the adequacy of their reserve positions. Similarly, others (Brazil, Indonesia) with weaker-than-warranted

¹² The total excess imbalance of ESR countries ranged between 0.4 and 1.0 percent of global GDP, the equivalent to $\frac{1}{4}$ to $\frac{1}{2}$ of the actual global imbalance.

external positions in 2013 purchased reserves, preventing a widening of their excess deficits. Exceptions included, Russia and Turkey, which, despite having weaker-than-warranted external positions, sold reserves, further deteriorating reserve coverage (Turkey). More recently Thailand, accumulated reserves despite having excess surpluses and comfortable reserve buffers.¹³ Among financial centers, large reserve purchases in Hong Kong SAR and Switzerland prevented a weakening of their broadly-in-line external positions against a backdrop of large capital inflows; while substantial reserve sales helped to prevent a widening of Singapore's excess surplus, amid large outflows.

Figure 12. Selected Economies: Foreign Exchange Intervention, Staff Gaps and Reserve Adequacy, 2013-16



Sources: IMF *International Financial Statistics*, International Reserves and Foreign Currency Liquidity Template, and IMF staff calculations.

1/ Estimated FX intervention (FXI) includes spot and derivatives. Spot FXI is estimated as BOP net international reserves flows (or change in reserves) minus estimated income flows on reserves. Derivatives (non-spot interventions) include aggregate short and long positions in forwards and futures in foreign currencies vis-à-vis the domestic currency (including the forward leg of currency swaps), and financial instruments denominated in foreign currency but settled by other means (e.g., in domestic currency), as reported in the International Reserves and Foreign Currency Liquidity Template.

2/ Measured as a share of Risk-weighted Reserve Adequacy Unadjusted Metric, except for China and India, for which the metric is adjusted for capital flow measures.

DEVELOPMENTS SINCE 2016, OUTLOOK AND POLICIES

This section takes a forward-looking view, discussing implications of post-2016 developments for the outlook and risks from the configuration of excess imbalances. It also discusses desirable policies to address excess imbalances from a multilateral perspective, both for surplus and deficit countries.

Developments Since 2016 and Outlook

19. **Since 2016, currency markets have remained fluid, although in most cases observed movements do not point to material shifts in excess imbalances.**

- **Systemic currencies.** While remaining fluid—partly reflecting changing expectations about policy stimulus in the United States—currency movements through end-May 2017 have been limited, and

¹³ Saudi Arabia (with a current account balance that weakened substantially since 2013 following the sharp fall in oil prices) also conducted important reserve sales to mitigate the price shock's impact amid a medium-term fiscal consolidation plan.

do not point to material shifts in overall assessments. The U.S. dollar and euro have been broadly unchanged in real terms relative to 2016, while other systemic currencies are all down somewhat (about 4 percent in the case of the sterling and yen, and 2½ percent for the renminbi).

- **Other economies.** Following sharp depreciations in earlier years, real exchange rates for key EMDEs (Brazil, India, Russia, and South Africa) posted significant appreciations through end-May, relative to 2016, in response to improved outlooks—linked to better reform prospects in the case of Brazil and some initial hope for reduced sanctions in the case of Russia. These recent appreciations could exacerbate excess external imbalances in these countries, although conditions remain volatile, as evidenced by the Brazilian real's recent sell-off on political uncertainties. On the opposite end, the Turkish lira weakened by about 10 percent in real terms, relative to 2016, although accompanied by some widening of the current account deficit.

20. In the context of weak automatic adjustment mechanisms, global flow and stock

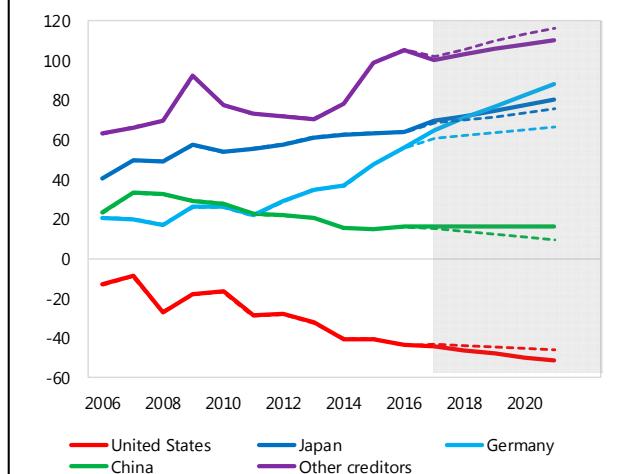
imbalances are projected to widen over the medium term. Absent decisive policy actions, weak automatic adjustment mechanisms—in part due to rigid currency arrangements in both key surplus and deficit economies (including within the euro area)—will continue to constrain a timely correction of excess imbalances.

- **Flow imbalances:** Staff project broadly unchanged global imbalances, with moderately higher U.S. current account deficits offset by improvements in the external positions of the United Kingdom and key oil exporters, supported by fiscal consolidation in the case of oil exporters.¹⁴ In key surplus economies (China, Germany, Japan, Korea, the Netherlands) surpluses are projected to persist, marginally narrowing because of structural reforms, the reversal of temporary factors, and an expected realignment of competitiveness.

- **Stock imbalances.** The projected configuration of current accounts will lead to a further widening of stock imbalances

(Figure 13). The U.S. net debtor position is expected to deteriorate further, exceeding -50 percent of GDP by 2021. The net creditor positions of Japan and Germany will continue increasing (reaching over 80 percent of GDP over the next five years), while China's net creditor position is projected to remain broadly unchanged over the medium term. In the event countries succeed in narrowing their excess current account imbalances, the projected widening of stock imbalances would moderate somewhat.

Figure 13. Selected ESR Economies: Actual and Projected NIIP, 2006-21 (percent of GDP) 1/



Sources: World Economic Outlook and IMF staff calculations.

1/ Dotted lines correspond to projected NIIP if external gaps are closed.

2/ Other creditors: weighted average of key oil exporters and financial centers (Russia, Saudi Arabia, Hong Kong SAR, Singapore and Switzerland).

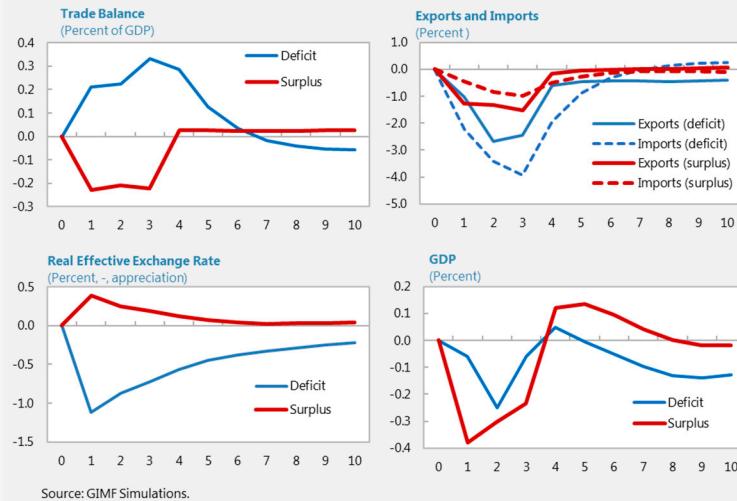
¹⁴ Baseline projections assume broadly neutral fiscal policy across key economies, including in the United States.

Box 6. Trade Protectionism, Global Imbalances, and Growth¹

This box analyzes the implications of trade protectionism on external imbalances using the IMF's Global Integrated Monetary and Fiscal (GIMF) multi-country model.² The model considers three hypothetical large regions: a deficit country, a surplus country, and the rest of the world (ROW).³ The deficit country initially imposes a non-tariff barrier for 2 years on imports from the surplus country (roughly equivalent to a 10 percent tariff). The surplus country is assumed to retaliate one year after by imposing reciprocal trade restrictions for two years. In the fourth year, all trade restrictions are lifted.

This exercise complements the analysis presented in the Fall 2016 WEO by considering two specific features: (i) transitory protectionist policies (to limit fully offsetting exchange rate effects); and (ii) trade restrictions that do not raise fiscal revenues (to underscore the distortionary impact of these policies). Implications of protectionist policies for deficit and surplus countries, global growth, and imbalances are described below.

- **Deficit country:** The imposition of trade restrictions improves the trade balance (0.3 percent of GDP after 3 years) by compressing imports (down 4 percent relative to baseline). Lower imports reduce the demand for foreign currency, generating a real exchange appreciation (averaging 1 percent over 3 years) and a transitory reduction in exports. While this policy can reduce somewhat the trade deficit, this is achieved at the expense of output (GDP declines on average by about 0.1 percent during the first three years), as protectionist policies not only lower exports (due in part to the exchange rate effect) but also reduce consumption and investment, with the non-tariff barriers increasing the final price of goods.
- **Surplus country:** The surplus country experiences a decline in its trade balance (0.25 percent of GDP over 3 years), led by a reduction in exports (-1.25 percent over 3 years), which is only partially offset by a reduction in imports resulting from the real exchange rate depreciation. The combination of protectionist policies in the deficit country and the retaliation generates an average reduction of output of 0.3 percent during the first three years. As trade restrictions are lifted, the negative effects on output and the trade balances quickly unwind.
- **Global impact:** The simulations suggest that trade restrictions can narrow global imbalances although their impact is small, as real exchange rates partly offset the effect of trade barriers. Moreover, the world as whole is worse off, as global GDP experiences an *average* decline of 0.1 percent while protectionist policies are in place. Imbalances in the rest of the world are roughly unchanged, although they observe very small output gains from protectionist policies elsewhere, as exports rise to satisfy unmet demand.



Further simulations show that global GDP losses increase with the duration of protectionist policies, while the impact on global imbalances lessens as real exchange rates moves to fully offset the intended outcome. Beyond the channels captured by the model, protectionism would likely increase global uncertainty and financial volatility with material effects on global investment.

¹ Prepared by Michal Andrlé and Ruy Lama.

² See more details in Anderson and others (2013) and Kumhof and others (2010), and alternative scenarios in the Fall 2016 WEO.

³ Simulations are presented as deviations from the baseline scenario. In the baseline, the current account balance is -2 percent of GDP in the deficit country, and 1 percent of GDP in the surplus country. Deficit and surplus countries each represent about 20 percent of world GDP.

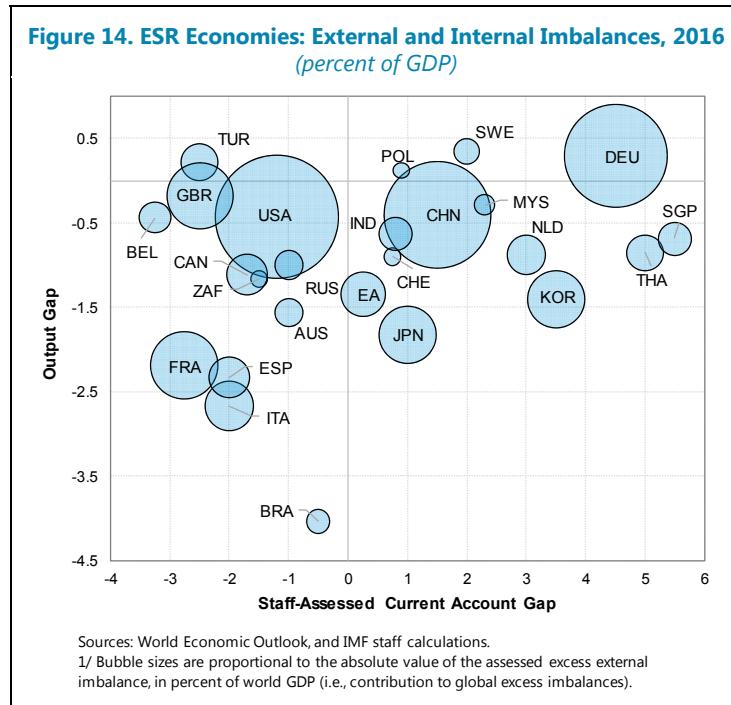
21. **The new configuration of imbalances poses distinct global risks, particularly over the medium term.** While the rotation of imbalances toward advanced economies entails lower deficit-financing risks in the near term, an increased concentration of imbalances in a few systemic economies could (i) heighten the risk of protectionist responses, which, if implemented, would reduce global output (see Box 6); and (ii) raise the risk of disruptive corrections down the road, including due to diverging stock positions. Although policy-related risks are now more balanced, global flow and stock imbalances could widen further should U.S. fiscal policy prove to be more expansionary than under the baseline. A more accommodative U.S. fiscal policy could also lead to a faster pace of monetary policy normalization and sharper appreciation of the U.S. dollar, with possibly disruptive effects in EMDEs, especially those with large external financing needs. Similarly, insufficient reforms in surplus economies could also promote wider imbalances, including in China (where tighter fiscal and credit policies will be needed over the medium term).

Policies to Address Global Excess Imbalances

22. **Sustained global excess imbalances, amid smaller output gaps, point to the need for recalibrating the policy mix in excess deficit and surplus economies alike (Figure 14).**

- **Excess surplus** countries with fiscal space and negative output gaps (Korea, Thailand) should use fiscal policy to support demand, while reducing reliance on monetary policy, to narrow both domestic and external imbalances. In China, fiscal and credit policies should support domestic rebalancing (from investment toward consumption) and address financial sector vulnerabilities. Where fiscal space is limited (Japan) amid continued economic slack, supportive fiscal policy could play a role provided it is matched with a credible medium-term consolidation plan. In countries without independent monetary policy internal appreciation is needed. In those countries with fiscal space (Germany, the Netherlands) but with relatively healthy cyclical positions, tax and spending policies could be used to promote private investment and boost public investment, labor force participation, and consumption without necessarily inducing long-lived overheating pressures. Where output gaps are closed and both fiscal and monetary policy are available, a tighter monetary and easier fiscal orientation would be desirable. Countries with adequate foreign exchange reserves levels (Thailand) should limit their reserve intervention to deal with disorderly market conditions and allow the exchange rate to move flexibly so that their currencies align better with fundamentals.
- **Excess deficit** countries with slack should generally avoid easing fiscal policy, and instead rely on accommodative monetary policy to address domestic and external imbalances. In countries where near-term fiscal easing is envisaged (Canada), a timebound consolidation plan should be adopted to reverse the projected strengthening of the currency and widening of the current account deficit. Where output is near potential (United States) fiscal consolidation should proceed, along with gradual monetary policy normalization. Meanwhile countries with high inflation pass-through and above-target inflation (Turkey) may need to tighten monetary policy while opportunistically build foreign exchange reserves. This will not only reduce vulnerabilities to capital flow volatility, but support saving and reduce excess imbalances over the medium term. In countries without independent monetary policy an internal devaluation is needed (France, Italy, Spain, Saudi Arabia), supported through fiscal consolidation and growth-friendly tax and spending policies (e.g., lower

payroll taxes and job training programs) to complement productivity-enhancing labor market reforms.



23. **Reducing large and persistent excess global imbalances will require increased focus on structural reform policies.** Reforms should be tailored to country-specific circumstances (see Table 5) and complemented by supportive macroeconomic policies (see above), especially reforms that may have negative short-run growth effects (Box 7).

- In **excess surplus countries**, reforms should aim at boosting demand, reducing saving, and facilitating relative price adjustments. These policies include: (i) reducing barriers to foreign competition (see Box 8) and domestic investment in certain sectors, including services (China, Germany, Japan, Korea, Thailand) and residential investment (Sweden); (ii) facilitating private sector balance sheet repair (the Netherlands); (iii) expanding social safety nets to discourage precautionary saving (China, Korea, Malaysia, Thailand); and (iv) encouraging labor force participation by the elderly and by other groups with relatively high consumption propensities (Germany, Japan, Singapore).
- In **excess deficit countries**, policies should be directed to increasing external competitiveness and overall saving by: (i) implementing labor market reforms aimed at moderating nominal wage increases and reducing unit labor costs (France, Italy, Spain); (ii) lowering the costs of doing business (Brazil, India, Italy, Russia); (iii) improving the skill base of workers and encouraging innovation in the export sector (Canada, France, the United Kingdom, the United States); and (iv) reducing the generosity of pension systems (Brazil, Italy, Turkey).

Box 7. Structural Reforms and External Adjustment¹

This box reviews the theoretical and empirical literature on the impact of structural reforms on external imbalances, and presents new evidence highlighting the role that product market reforms (PMRs) have played in narrowing imbalances in countries with large and persistent current account (CA) surpluses.

Theory: Structural reforms are generally geared to boost potential growth, although in theory they could also affect the saving-investment balance at least over the near term. For example, PMRs that lower entry barriers and corporate administrative burdens would raise productivity in the sector where the reforms are targeted, but also in others sectors that source inputs from it (Blanchard and Giavazzi, 2003; IMF, 2016). In theory, these reforms could lead to a deterioration in the CA balance at least in the short run, either through a rise in private investment resulting from declines in markups and capital adjustment costs, and/or an increase in consumption as households smooth their spending in expectation of a gradual rise in productivity (Alesina et al., 2005; Caciato, et al. 2016, Fournier and Koske, 2010). Similarly, labor market reforms (LMRs) that lower hiring and firing costs or reduce unemployment benefits tend to enhance economy-wide productivity. They could lead to improvements of the CA in the near-term by increasing precautionary saving and exports, although these effects can be offset through the business investment channel.²

Past evidence: Existing empirical evidence on the impact of reform on imbalances is scant, and yields few clear-cut conclusions. Kennedy and Sløk (2005) find that while PMRs tend to lower CA balances, LMRs have no significant effects. OECD (2011) reports that both reforms contribute to improving CA balances. Meanwhile, Culic and Kyobe (forthcoming) suggest that although reforms have negligible impacts on external positions, they facilitate productive resource reallocation and improve economic resilience to external shocks.

New evidence: Using the unique data and methodology from a recent WEO Chapter (IMF, 2016) on the growth effects of structural reforms in 13 advanced economies for the period 1985-2011, we study the impact of these reforms on external positions. We find that while LMRs have more ambiguous effects on the external position, PMRs can help to reduce CA imbalances, although the effect is significant only for countries running large and persistent CA surpluses (Box Figure):

- PMRs reduce surpluses immediately as well as through the medium-term—the current account to GDP ratio declines by 2 percentage points over 5 years in response to a PMR.
- This decline appears to be largely driven by a corresponding decline in overall saving, suggesting the role played by the consumption-smoothing mechanism. Meanwhile, private investment also rises as reforms boost the returns from investment. The overall impact on investment is less significant, likely due to offsetting responses in public investment.

Results are robust to reform sectors, types, and across countries in the sample, although differences in the intensity of reform efforts are not fully captured by the available data. Taken together, our findings suggest that certain reforms can play a role in reducing the underlying distortions behind large and persistent surpluses, although further research on this issue is necessary, including through the use of case studies.

Box Figure. Selected Advanced Economies: Product Market Reforms and the Current Account

Source: Fund staff estimates.

Notes: We use the local projection method specified as: $y_{t+k} - y_{t-1} = \alpha_i + \chi_i + \beta_k R_{it} + \theta X_{it} + \varepsilon_{it}$, where y is the variable of interest (e.g., CA, saving, or investment, all as a ratio to GDP); α_i and χ_i are country and time fixed effects; R_{it} is the reform shock, and X_{it} additional control variables such as lagged GDP growth, commodity terms of trade index, and fiscal policy. Results are presented for a subset of AEs with large and persistent current surpluses (more than 3 percent of GDP for at least 3 years). Details on the dataset are provided in IMF (2016).

¹ Prepared by JaeBin Ahn.

² The effects of LMRs on external imbalances might be weaker than those of PMRs, not least because the former works through input prices only while the latter affects final prices (Bayoumi et al., 2004).

Box 8. Trade Distortions and the Current Account

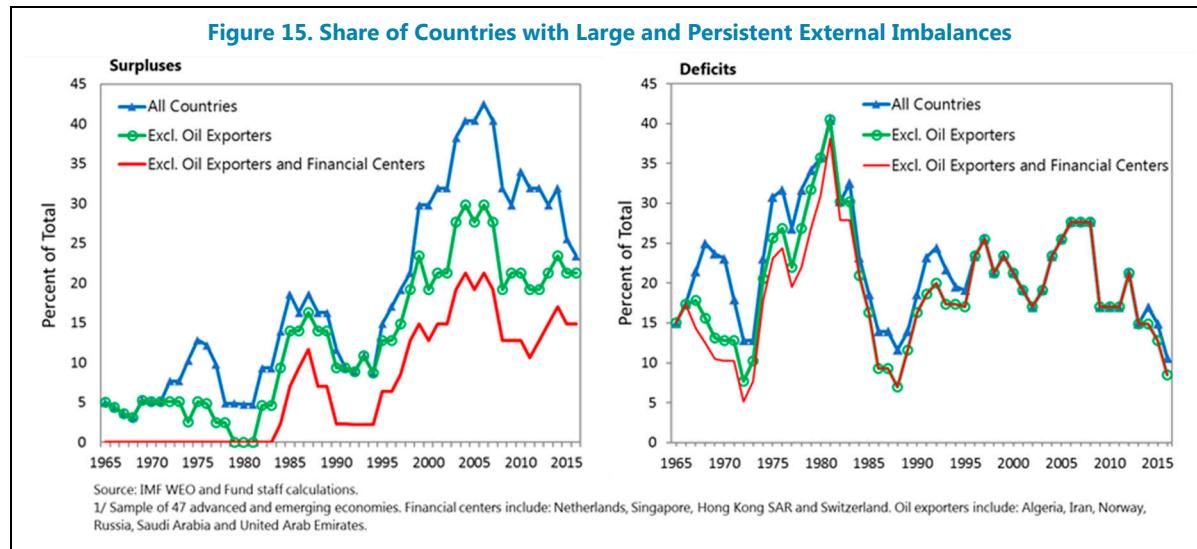
Savings and investment levels and the gap between them — the current account balance — are determined primarily by macroeconomic factors such as the economy's cyclical position, fundamentals (like demographics), and broader policy settings. Trade-related distortions have generally not been a key driver of the overall savings and domestic investment levels in most countries. Therefore, the case for removing trade distortions and making markets more competitive and easier for foreign entry goes beyond the need to address imbalances. Global output growth remains sluggish, and while the recovery has gathered some momentum, greater trade openness can further boost growth by improving productivity and resource allocation. Some areas such as the services sector have a particularly strong potential given its large share in the global economy and the high barriers to entry. These policies remain desirable in both surplus and deficit economies.

In addition, however, several examples from the companion *2017 External Sector Report—Individual Economy Assessments* paper remind us that reducing trade and competitiveness distortions in some cases have a role in addressing a portion of existing excess external imbalances. In China, staff has recommended making markets more contestable by lowering trade barriers in certain sectors (especially services), reforming state-owned enterprises, and ensuring that foreign investors receive the same treatment as domestic investors (IMF Country Report No. 16/270). Similarly, in Germany and Japan, staff has called for competition-enhancing reforms in the agricultural (Japan) and services sector to encourage investment, and support overall productivity (IMF Country Report No. 16/202 and No. 16/267).

24. Overall, addressing excess global imbalances in a growth-friendly fashion will require policy actions that target impediments to external adjustment. The rotation of excess imbalances towards AEs—with deficits increasingly concentrated in the United Kingdom and the United States—likely entails lower near-term deficit-financing risks. However, diverging stock positions, coupled with continued reliance on demand growth in debtor countries, could compromise the global recovery and raise the possibility of disruptive corrections down the road (if net debtor countries with external deficits abruptly bring spending into closer balance with their intertemporal budget constraints). Against a backdrop of weak automatic adjustment mechanisms, tackling excess external imbalances requires decisive policy actions. Both surplus and deficit economies should implement policy mixes consistent with both domestic and external objectives, while focusing reform efforts on lifting structural distortions to saving and investment decisions. Protectionist policies should be avoided, as they are unlikely to deliver meaningful and lasting gains in reducing external imbalances, but would be harmful for domestic as well as global growth. Supporting free trade—through strong and well-enforced rules that promote competition and a level playing field—will remain essential to strong and balanced global growth.

SPECIAL FEATURE: A FOCUS ON CURRENT ACCOUNT SURPLUSES¹⁵

25. **The past 20 years have seen a large increase in countries with large and persistent current account surpluses.** In the run-up to the Global Financial Crisis (GFC), more than 40 percent of economies (in a sample of 47) registered a large and persistent surplus, compared to less than 10 percent a decade earlier (Figure 15).¹⁶ The share has since declined to about one-quarter, but is still higher than at any point from 1965 to the early 2000s. By contrast, no comparably heightened concentration is observed currently for large and persistent external *deficits*.



26. **Current account imbalances, including persistent ones, can be entirely appropriate and even necessary** (see also paragraph 11). Countries whose populations are aging, for example, need to accumulate assets for many years that they can draw down when their workers retire. If domestic investment opportunities are few, these economies will invest abroad, giving rise to sustained current account surpluses until the demographic structure has reached a new equilibrium. Conversely, young and rapidly growing economies with ample investment opportunities benefit from sustained foreign funding and can afford to accumulate liabilities, provided they can repay them out of future income.

27. **Large and persistent current account surpluses, when excessive, can be problematic both at a global and country level.**

- ***First, at a global level, current account surpluses need of course to be matched by current account deficits.*** Surpluses that are larger than what is justified by fundamentals imply an excessive supply of saving, which is matched by an excessive build-up of liabilities elsewhere in the global

¹⁵ Prepared by Emine Boz, Mai Dao, Daniel Garcia-Macia, Nan Li, and Johannes Wiegand (lead).

¹⁶ For the purposes of this study, “large and persistent” current account imbalances are defined as episodes in which the current account exceeded 3 percent of GDP (in absolute value) every year for at least 3 years. These thresholds are chosen to strike a balance between identifying unusually long and large current account imbalance spells and having enough episodes at hand for meaningful analysis.

economy, risking debt crises and financial turmoil. A historical example—that should serve as warning also for policymakers today—is the interwar gold standard of the 1920s and early 1930s. Insufficient adjustment of surplus countries (at the time including the United States and France) complicated efforts of deficit countries (including the United Kingdom and Germany) to cope with large debt burdens and paved the way for the Great Depression. Lack of exchange rate flexibility and contractionary policies by surplus countries—implemented *inter alia* to constrain inflation and preserve competitive positions—contributed to the rigidity of external positions, features that have parallels in today's constellation (Eichengreen and Temin, 2010). Excess global saving also pushes down the equilibrium level of interest rates. If interest rates get near their effective lower bounds, this can push countries into liquidity traps, thus triggering declines in output and higher unemployment (Blanchard and Milesi-Feretti, 2011, Caballero et al., 2016).

- **Second, large and sustained current account surpluses can create difficulties for the surplus countries themselves.** While some current imbalances reflect differences in fundamentals, an important share—as discussed earlier—reflects policy and structural distortions that can affect growth negatively. Further, as shown in Section II of the report, persistent surpluses have often been associated with negative valuation effects on the surplus countries' external assets through an appreciation of their currencies (beyond earning lower returns on their saving). While this has helped to make persistent surpluses more sustainable—i.e., reducing the risk of ever-increasing net asset positions, matched by ever-increasing liability positions of deficit countries—it also means that surplus countries have experienced losses on their net savings.

28. **Importantly, the analysis in this section is on actual rather than excessive current account surpluses.** This owes to data limitations: estimates of excess imbalances are available only for the 28 countries included in the ESR exercise—and estimates start only in 2012 when the ESR exercise was initiated. However, this section's results are clearly relevant for excess imbalances too. Almost all economies with ongoing large and persistent surplus spells are also deemed to have an excess current account surplus (see below).

29. **This section consists of two short notes.** The first note summarizes the data on large and persistent current account surpluses over the past three decades or so, as well as on their reversals. The second note focuses on the interaction between sectoral saving and investment behavior and external imbalances in advanced economies. A concluding section summarizes some takeaways.

Large and Sustained Current Account Surpluses and Their Reversals

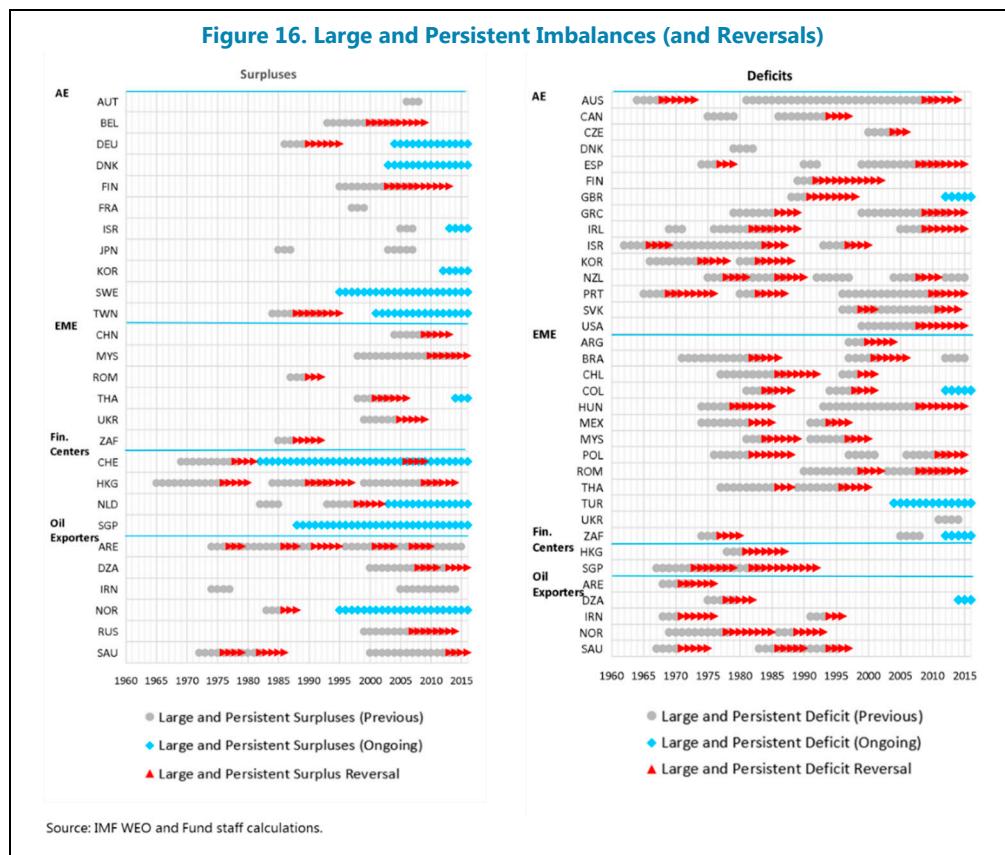
30. **While there is ample literature on large current account deficits, e.g., Milesi-Feretti and Razin (1998), studies of current account surpluses are relatively few.** Among these, IMF (2010) aims to understand policy-induced surplus reversals and their growth implications, while IMF (2007a) examines the relative contribution of two channels—exchange rates and demand—in the reversal of imbalances. The present study considers *all* reversals (policy-induced or not) in a sample of 47 countries and digs deeper into the nature of surplus persistence. It seeks to address questions like: where are such surpluses concentrated, how long do they typically last, and are ongoing surplus episodes different from completed ones? Further, how did the earlier large and persistent surplus episodes end? How do surplus

episodes differ from deficit episodes, in particular regarding adjustment and the eventual exit from imbalance spells?

Characteristics of Large and Persistent Current Account Surplus Episodes

31. **Large and persistent external surpluses have occurred less frequently than deficits, and have rotated more recently towards AEs (Figures 15 and 16).**

- Since 1960, there have been about 40 large and persistent current account **surplus** episodes. Until the mid-1980s, all such surplus episodes were concentrated in oil-exporting countries and financial centers, but in recent years, the distribution has become more balanced and a significant part is now playing out in "standard" advanced and emerging economies.
- By contrast, the 70 large and persistent current account **deficit** episodes have occurred at a stable frequency and across a wide range of country types since the 1960s. A temporary spike occurred in the early 1980s, when a few oil exporting countries financed the external deficits of several AEs and EMDEs.



32. Large and persistent current account surplus episodes have been more common in AEs than in EMDEs.

Two thirds of these surplus episodes were in AEs (15 vs. 7 in EMDEs). As a share of GDP, large and persistent surpluses were somewhat smaller in AEs but lasted longer.¹⁷ Further, AE surpluses were mainly driven by a positive trade balance, while during AE deficit episodes, sizable negative income balances also played a role (not shown).

Selected Economies: Features of Large and Persistent Surpluses, 1980-2016

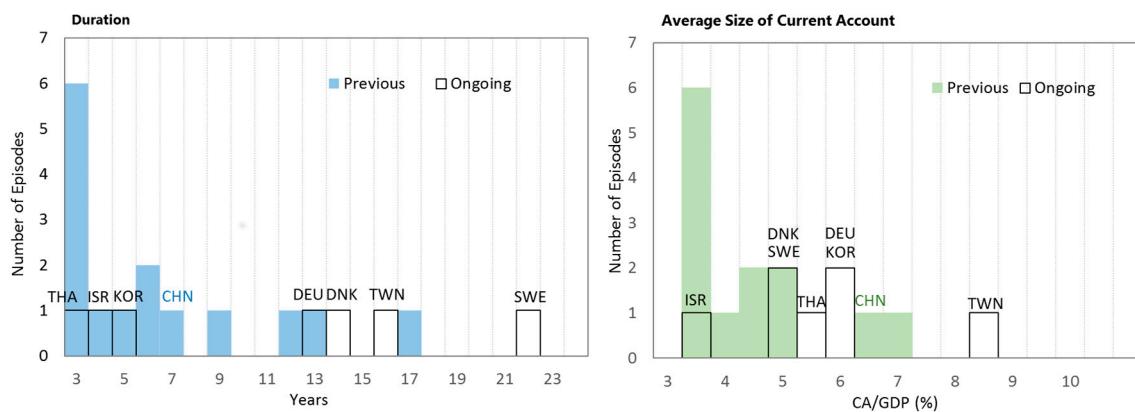
	AEs	EMDEs	Financial Centers	Oil Exporters
Episodes (number)	15	7	9	10
Duration (years)	8.6	6.4	14.9	12.9
Current Account 1/	5.3	6.5	8.0	13.3
Trade Balance 1/	4.8	8.5	7.8	16.2
Net Foreign Assets 1/	15.7	-22.2	119.5	48.9

Source: IMF WEO and Fund staff calculations.

1/ Simple average for the persistence period.

33. Ongoing large and persistent current account surplus episodes are larger and longer than completed surplus episodes. The ongoing spells comprise three of the four longest and four of the largest six surplus episodes identified since the 1960s, while ongoing deficits do not differ much from historical precedents. Of the seven countries with large and persistent surplus spells that are included in the ESR exercise, six are deemed to have a current account surpluses that are stronger than warranted by fundamentals. Consistent with this, the EBA model estimates suggest that standard fundamentals—such as demographics—play only a partial role in accounting for large and persistent surplus spells.

Figure 17. Duration and Size of Large and Persistent Surpluses



Source: IMF WEO and Fund staff calculations.

Reversals of Large and Persistent Current Account Surpluses

34. Current account surplus reversals can be driven by various forces. In the case of deficits, external financing constraints provide a natural, albeit often abrupt and painful, mechanism to induce reversals. Absent such a mechanism, surplus reversals need to be triggered by other forces, such as (i) endogenous private sector adjustment, as countries with large stocks of external wealth eventually

¹⁷ For financial centers and oil exporters, the large and persistent current account surpluses were both much larger (8-13 percent of GDP) and lasted longer (12-15 years) than for AEs and EMDEs.

expand demand; (ii) policies to correct distortions that raise saving or lower investment; and/or (iii) external factors such as a drop in foreign demand, a deterioration in the terms of trade, or exogenous capital inflows. Disentangling these is difficult, as the various factors are often intertwined and play out simultaneously.

35. Significant and sustained reversals from large and persistent current account surpluses

have been rare, leaving too few observations for regression analysis.¹⁸ Less than half of the completed large and persistent surplus spells in AEs and EMDEs ended with a significant and sustained reversal (4 out 15 for AEs, 6 out of 7 for EMDEs). In these cases, the current account surplus averaged almost 9 percent of GDP in the three years before the reversal, suggesting that significant and sustained surplus reversals tend to happen when surpluses have become very large. During the reversals, surpluses narrowed on average by 9 percent of GDP, although for EMDEs this process has been twice as fast (4 years) as for AEs (8 years). On average, reversals were associated with real exchange rate appreciation, fiscal expansion, terms of trade deterioration, increase in private credit (Figure 18) and a reduction in saving, rather than a rise in investment. By contrast, 80 percent of large and persistent deficit episodes ended in significant and sustained reversals (not shown).

Selected Economies: Surplus Reversals, 1980-2016

(in percent of GDP)

	AE	EMDE
Episodes (number)	4	6
Current Account (initial, avg.)	8.9	8.6
Duration (years)	7.8	4.2
<u>Changes: 1/</u>		
Current Account	-9.3	-9.2
Trade Balance	-8.1	-8.8
Saving	-7.1	-6.4
Investment	0.5	1.9

Source: IMF staff calculations.

1/ Change is defined as the difference between end of reversal and three-year average before the reversal.

36. To understand better the drivers of significant and sustained current account surplus reversals, this section presents six case studies. The episodes are chosen based on information availability and relevance for today's context. The focus is on reversal episodes since the 1980s, which—after discarding those driven by unique country-specific circumstances (e.g., Germany's reunification early 1990s)—leaves Belgium, China, Finland, Malaysia, Taiwan Province of China, and Thailand (Text Table). Of these, two have been covered by past ESR exercises (China and Malaysia), and in both cases, the surpluses were deemed excessive at the start of the episode. While each episode offers specific insights, the low number of cases makes it hard to draw general conclusions.

¹⁸ The requirements for a significant and sustained reversal are as follows: (i) *a period of large and persistent current account imbalance*, as defined in footnote 16, must precede the reversal, (ii) *a substantial adjustment*: the difference between the average current account in the first three years of the reversal and three years before the reversal must be greater than 2 percent GDP and one-third of the initial absolute value $|CA/GDP|$, and (iii) *a sustained adjustment*: the maximum current account imbalance in the three years following the reversal must be smaller than the minimum imbalance recorded in the three years before the reversal. The end year of the reversal episode is defined as the year in which (the three-year rolling window based) current account imbalance stops falling. These restrictions aim to ensure that only adjustments that eliminated the imbalance in a clear and durable way are considered.

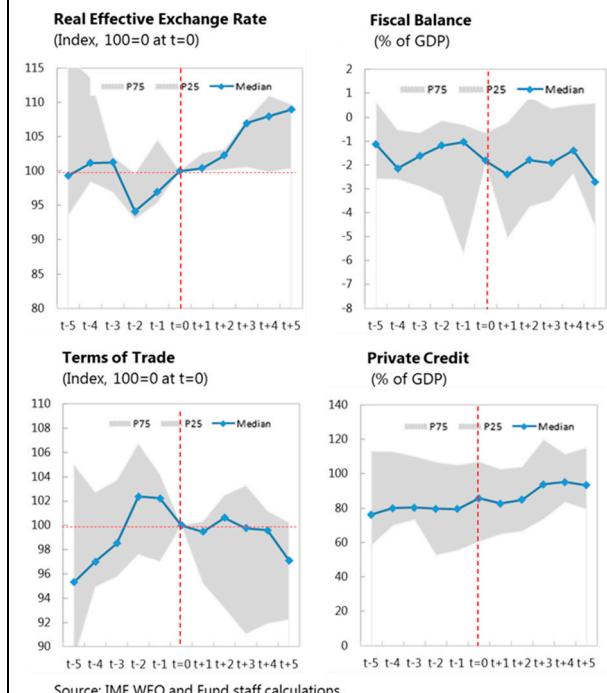
Text Table. Selected Economies: Features of Current Account Surplus Reversals

	Finland	Belgium	Taiwan Province of China	China	Malaysia	Thailand
Initial year of the large and persistent surplus	1994	1992	1983	2003	1997	1997
Reversal period	2003-13	2000-09	1988-1995	2009-13	2010-present	2001-06
ToT deterioration	Y	Y	N	Y	N	Y
REER appreciation	N	Y	Y	Y	Y	N
More EXR flexibility	N	N	Y	Y	Y	Y
Fiscal stimulus	Y	N	Y	Y	Y	Y/N
Structural policies	Y	N	Y	Y	Y	Y
Rising private credit	Y	N	N/A	Y	Y	N

Source: IMF Article IV reports.

37. **No single factor alone accounts for any specific individual reversal, or is common to all reversal episodes** (Figure 18 and Text Table). Fiscal stimulus and real exchange rate appreciation were the most common mechanisms, playing parts in 4 of the 6 episodes. This highlights that a large and sustained reversal requires many changes, including of policies.

- *Taiwan Province of China (1988-95): structural reforms induced a surplus reversal.* In the late 1980s, Taiwan Province of China embarked on a series of reforms, including trade and capital account liberalization and domestic financial market deregulation. At the same time, it abandoned its quasi-peg to the U.S. dollar in the face of speculative inflows, resulting in a real currency appreciation of more than 20 percent over four years.
- *Thailand (2001-06): post-Asian crisis.* In the wake of the Asian crisis that began in 1997, Thailand's current account adjusted sharply from large deficits to surpluses, reflecting a lack of access to external financing and weak investment, following a lengthy period of overborrowing and overinvestment in the run-up to the Asian crisis. Thailand's large current account surplus, which reached a peak of 12 percent of GDP in 1998, lasted for only four years (1998-2001) as balance sheet repair took place, before beginning to reverse in 2001. Overall, the reversal reflected normalization after a pre-crisis boom and post-crisis deleveraging.
- *China and Malaysia: post GFC stimulus and rebalancing.* Both reversals started after the GFC as external demand dropped, triggering fiscal stimulus. In both cases, the excess surplus has narrowed, yet not been fully eliminated.

Figure 18. Evolution of Selected Indicators Around Current Account Surplus Reversals

Source: IMF WEO and Fund staff calculations.

- *Malaysia's* current account surplus emerged after the Asian crisis—like Thailand's—but it lasted much longer. The Economic Transformation Program, launched in 2009, comprised a wide range of reforms and stimulus initiatives. The initial decline in the external balance owed in part to large investment projects and their catalytic impact on private investment.
- Similarly, *China* countered falling global demand in the wake of the GFC with a stimulus package, including a sharp increase in infrastructure investment. A by-product was a surge in demand for commodities, triggering a decline in China's terms of trade. These developments, combined with rising wages, real appreciation, and credit and fiscal stimulus, sustained China's surplus reversal. However, the reversal came at the expense of increasing private and public sector leverage.
- *Belgium and Finland: post euro area accession reversals.* Both countries' reversals began around the time of euro area accession, and therefore in the absence of nominal exchange rate flexibility vis-à-vis partner member countries. However, their drivers differed importantly.
 - *Belgium's reversal came with a substantial increase in labor costs*, as a wage setting structure adopted in 1996 did not prevent higher wage growth in Belgium than its trading partners (IMF 2007b). The real effective exchange rate based on unit labor costs appreciated by 16 percent over 9 years during Belgium's reversal.
 - *A terms of trade deterioration contributed to Finland's reversal*, driven by a steep increase in the price of petroleum products—its primary import—relative to wood products—its primary export.¹⁹ Following the reversals, Finland's GDP growth rose gradually from 2 percent to 5 percent until the GFC, while Belgium's growth hovered around an average of 2 percent.

Sectoral Contributions to External Imbalances in Advanced Economies

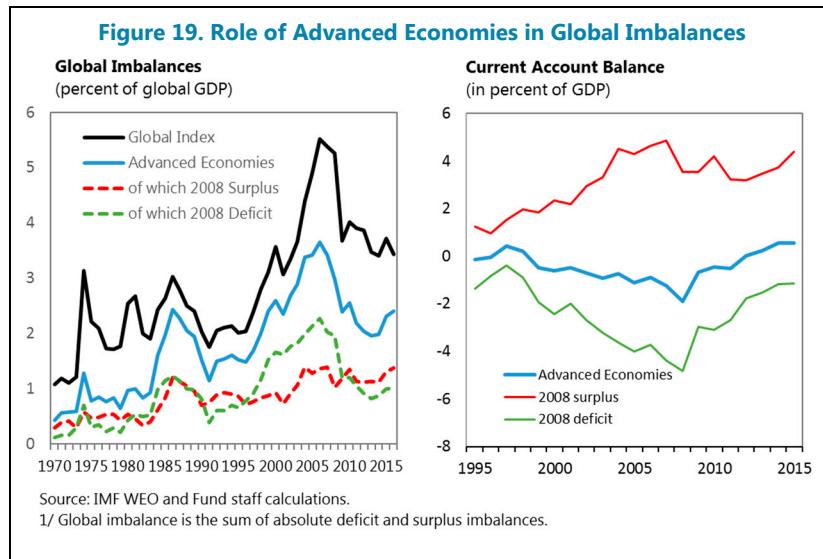
38. **Advanced economies account for the lion's share of global external imbalances.** Since the mid-1980s, AEs' contribution to the global imbalance has typically been about two-thirds—slightly less than their share in the global economy.²⁰ In the run-up to the GFC, sizable current account deficits in several AEs—including the United States, United Kingdom, Spain, and Australia—drove global imbalances to record highs. Only a small part of those current account deficits was matched by higher surpluses in other AEs; rather, the main counterparts were large current account surpluses among commodity exporters and some emerging economies (notably China).

39. **Following the GFC, most AEs with large current account deficits adjusted, while AEs with surpluses did not.** Thus, the contribution to global imbalances of AEs with persistent surpluses—such as Japan, Germany, Korea, the Netherlands, and Switzerland—increased to about 40 percent in 2016, about twice their contribution to global GDP. Estimates based on the 2016 external assessments suggest that about one-third of these countries' aggregate surplus in AEs is excessive. Furthermore, the group's

¹⁹ The boom and bust of the domestic electronics industry was also an important factor behind Finland's current account surplus spell and its eventual reversal.

²⁰ Defined as the sum of absolute deviations of countries' external positions from zero, divided by global GDP.

composition has been fairly stable: of the 15 AEs that had external surpluses in 2002, 12 also did in 2008, and 11 in 2016. Overall, the combination of deficit reduction in erstwhile deficit countries and persistent surpluses in surplus countries has triggered a shift of AEs into aggregate surplus, for the first time since the late 1990s.



40. **This section analyzes the patterns and shifts in saving and investment behavior—especially of the private sector—that account for these outcomes**, drawing on a dataset for 23 AEs (including all systemic AEs) since the mid-1990s.²¹ For these economies, detailed sectoral financial accounts are available, which permits extracting stylized facts such as the following:

- *Surplus countries save and invest more than deficit countries*, although the differential is larger for saving.
- *Higher corporate saving* in surplus countries—that is not offset by lower household saving—plays an especially large and persistent role in accounting for current account differentials.
- *In the wake of the GFC, both household and corporate net lending moved sharply into surplus*. However, while for corporations, this move is consistent with longer-term trends that were already ongoing before the GFC, for household saving the GFC marks a trend break.
- *This private sector shift into surplus was initially offset by more public borrowing*, but from 2010, fiscal consolidation advanced faster than private net lending normalized, triggering the aggregate shift of AEs into surplus.

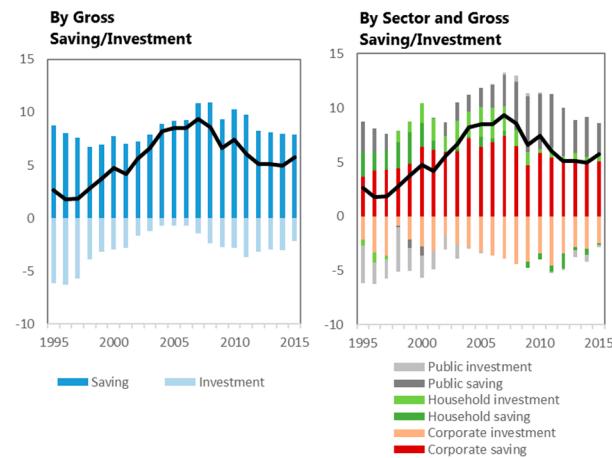
²¹ The data come from a multitude of sources, including national central banks, the OECD, and Eurostat.

What Distinguishes Surplus from Deficit Countries

41. In a first step, **the current account differential between surplus and deficit countries is decomposed across several dimensions** (Figure 20).²² Countries are grouped according to the current account position they had in 2008, i.e., around the outbreak of the GFC.

- Decomposing first **by gross saving/investment** shows that surplus countries save *and* invest more, although the saving differential is larger than the investment differential.
- Breaking saving and investment down further **by sector** points to *gross corporate saving* playing a key role in accounting for current account differentials: on average, gross corporate saving in surplus countries exceeded that of deficit countries by about 5 percent of GDP over the past 20 years. While other factors have also contributed to the difference between surplus and deficit countries—notably large real estate booms boosting household investment in deficit countries prior to the GFC, and higher fiscal deficits in the ensuing recessions—they have been neither as large nor as persistent as differences in corporate saving.

Figure 20. Decomposing the Current Account Differential Between Surplus and Deficit Countries
(in percent of GDP)

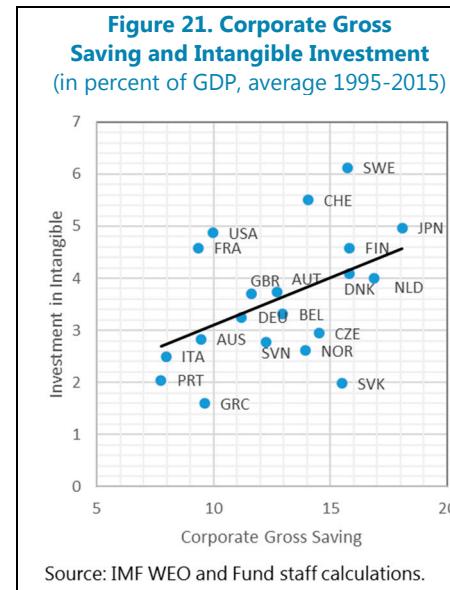


Source: IMF WEO and Fund staff calculations.
1/ Surplus (deficit) countries are those that ran surpluses (deficits) in 2008.

42. **Some evidence suggests that structural factors contribute to differences in corporate saving.** For example, corporate saving correlates well with the share of *intangibles in investment* (Figure 21). As intangibles are difficult to collateralize and are associated with uncertain returns, corporations with a high share of intangibles need to accumulate internal funds (Falato et al., 2014; Pinkowitz et al., 2016)—a link that has also been investigated in relation to the trend *increase* in corporate saving over the past two decades in AEs (WEO, 2006; Chen, and others, 2017; Armenter and Hnatkovska, 2017), and to which we return below. A regression controlling for additional structural factors (not displayed) suggests that a large manufacturing sector and higher profitability are also associated with higher corporate saving. Important outliers are the United States and France, however, where corporate saving is low despite high intangible intensity, suggesting other factors or distortions (e.g. capital market development) might be at play.

²² Net lending is a sector's revenue minus its expenditures and equals the net acquisition of financial assets. Gross saving is net lending plus capital expenditure and equals the acquisition of total assets (financial and real). Household investment consists mostly of real estate acquisition. The financial and non-financial corporate sectors are aggregated into one entity, as net lending of the financial corporate sector is typically small.

43. **The link between current account positions and corporate saving may also point to distortions**—which are relevant against the backdrop that a nontrivial share of the overall surplus in AEs is deemed excessive. Higher corporate saving affects an economy's external position only if it is not offset by higher investment or by the offsetting saving behavior of other sectors—notably households.²³ However, figure 20 suggests that household saving—in contrast to corporate saving—differs little between surplus and deficit countries. It therefore fails to neutralize the impact of corporate saving patterns on total private saving. This failure of households to see through the “corporate veil” can reflect financial frictions, issues related to corporate governance, and other distortions (Poterba, 1987).

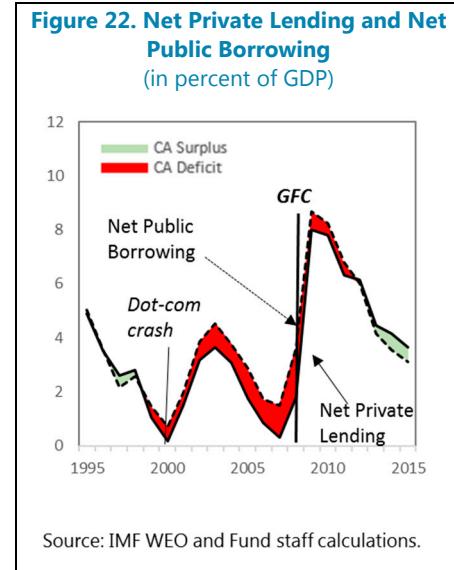


Why Have AEs Shifted Into Surplus After the Global Financial Crisis?

44. **The shift of AEs into aggregate surplus reflects a large increase in private net lending that was not fully offset by public borrowing** (Figure 22).

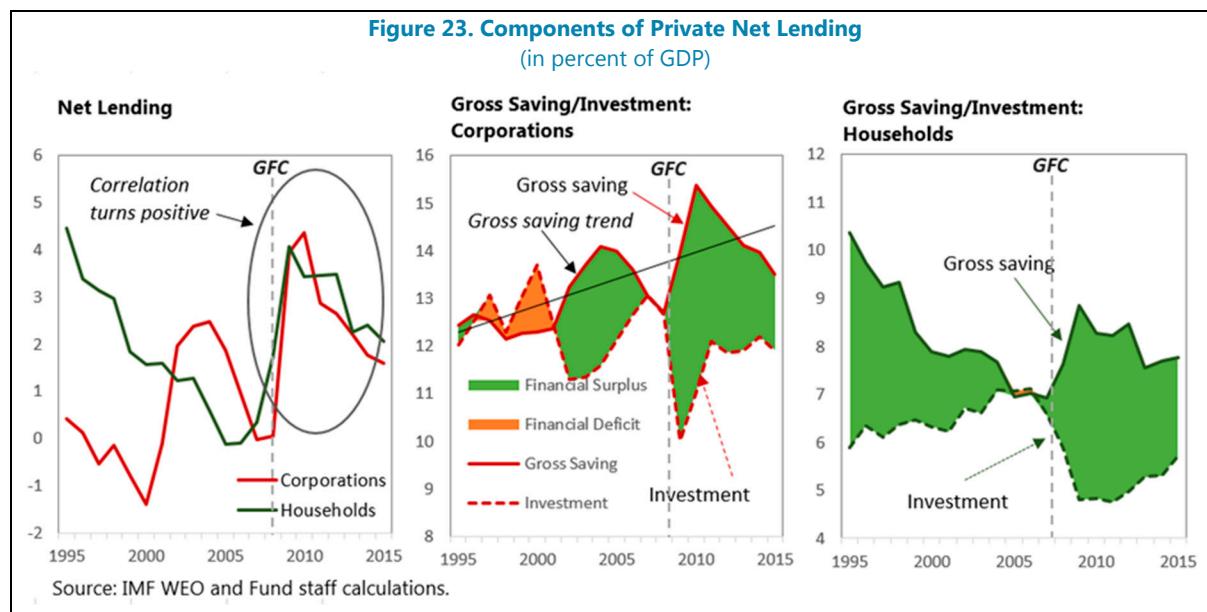
- Prior to the GFC, large, cyclical fluctuations in private net lending—increasing in downturns and falling in booms—were offset mostly by parallel changes in net public borrowing, resulting in only minor changes in the aggregate current account position.
- The surge in private net lending after the GFC stood out in terms of its size and persistence: on average, it was twice as large as the increase in private net lending during the dot-com recession of 2000–03. Initially, the surge was offset by large fiscal stimulus. From 2010, however, fiscal positions consolidated faster than private lending normalized, especially in deficit countries (not shown).

45. **Why did private net lending increase so sharply in the wake of the GFC?** Decomposing private net lending into contributions from corporations and households suggests that both sectors played a part.



²³ To the extent that households own domestic corporations, household saving behavior should offset differences in corporate saving.

- **For corporations, the increase in net savings followed a longer-term trend** that is overlaid by cyclical fluctuations. Disaggregating corporate net lending into gross saving and investment shows that the upward drift owes primarily to gross corporate saving, which arguably reflects some of the structural factors impacting corporate saving discussed above.
- **For households, however, the GFC marks a trend break.** While until the GFC, household net lending tended to fall as corporate net lending increased, both became synchronized at around the time of the GFC. In part, the synchronization reflects a simultaneous downturn in corporate and household *investment*. However, corporate and household *gross saving* also increased simultaneously after the GFC. This suggests that in the wake of the GFC, the corporate veil thickened.²⁴



46. **To shed further light on these developments, panel data models were fitted to each of the four components of private net lending:** gross corporate and household saving, and corporate and household investment—for the pre-GFC period, i.e., 1995–2008.²⁵ The models include structural factors—such as the share of intangibles in investment for corporate saving, or demographic indicators for household saving and investment—as well as standard cyclical factors—output gap, interest rates, leverage, net worth, with the choice of variables informed by the existing theoretical and empirical literature. In line with theory, corporate gross saving is included as one covariate in the household gross saving model. The model coefficients are then used to predict post-GFC patterns out-of-sample, and compare these with actual outcomes. Reverse causality or non-linear relationships between some covariates and the private saving components are possible. However, even

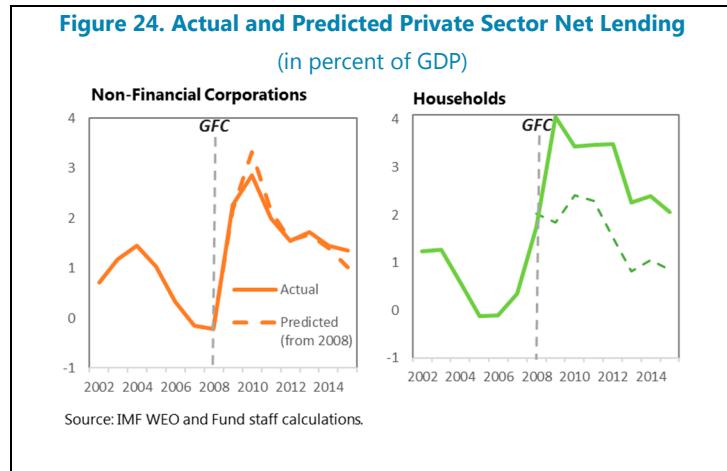
²⁴ The thickening also shows up cross-country: the average correlation coefficient (GDP weighted) between gross household and corporate saving increased from -0.26 for 2002–08 to -0.07 for 2009–15.

²⁵ The analysis is performed for non-financial corporations rather than the entire corporate sector, as the factors affecting net lending of intermediaries and of non-financial corporates may be rather different.

when the structural relationship linking these variables is unlikely to be fully captured, the exercise can still identify shifts in the correlation pattern, yielding potentially valuable insights.

47. **For corporations**, the pre-crisis patterns broadly fit the post-crisis period. Predicted corporate investment and gross saving are both slightly higher than realized outcomes, leaving predicted net lending close to actual levels (Figure 24). These results confirm Gruber and Kamin (2016) and IMF (2015) for corporate investment

48. **For households**, however, the pre-GFC model under-predicts post-GFC net lending, with both components—household investment and gross saving—contributing to the gap. The gap is especially pronounced in deficit countries and has remained fairly persistent (it was still more than one percent of GDP in 2015). This pattern is consistent with the thickening of the corporate veil described above and constrained household behavior—triggered, for example, by the need to repair household balance sheets. An alternative (and not mutually exclusive) explanation is that irrational exuberance boosted household borrowing before the crisis through channels not fully captured by the model, which then reversed post-GFC.²⁶



Key Takeaways

49. **Large and persistent current account surpluses in AEs and key EMDEs are a relatively recent phenomenon.** While the data presented here stretch back to the 1960s, large and persistent external surpluses in AEs and EMDEs (excluding oil exporters and financial centers) emerged for the first time only in the 1980s—prior to this, it was primarily oil exporters and financial centers that funded external deficits elsewhere. In recent years, the phenomenon has intensified, with *ongoing* surplus episodes featuring larger and longer-lived surpluses than completed episodes. Moreover, most of the ongoing spells also reflect excess surpluses.

50. **Evidence from the limited number of large and sustained declines of surpluses suggest that the factors involved are complex and multidimensional.** In most cases, these declines have been associated with appreciating real exchange rates, expansionary fiscal and credit policies as well as

²⁶ Some factors driving the pre-GFC boom—notably household net worth and, therefore, house prices—are included in the household saving and investment models; a symmetric reversal of these factors would hence be captured by the post-GFC forecast. As an alternative approach, the models were run for the entire period (1995–2015) and tested for structural breaks at the time of the GFC. Breaks are evident for both household gross saving and investment. The household net lending gap cannot be translated directly into a counterfactual current account differential, as lower household net lending would likely trigger lower public net borrowing.

structural reforms. However, changes in the external environment, such as terms-of-trade shocks, have also been critical in other cases. A common trait is that external surpluses are likely to revert only when they have become very large, which suggests that there may be a role for multilateral cooperation in dealing with them.

51. **Corporate saving is a key distinguishing feature between surplus and deficit countries.**

High corporate saving in surplus countries reflect in part structural characteristics of these economies' corporate sectors. However, elevated corporate saving rates are not sufficiently offset by household saving behavior, which points to distortions that make households fail to see through the "corporate veil". While an analysis into the causes of this phenomenon goes beyond the scope of this note, the presence of potential distortions that drive up private saving in surplus countries is consistent with the current ESR assessment that about one-third of the surplus AEs' imbalances is excessive.

52. **The recent shift of AEs into aggregate surplus—for the first time since the late 1990s—reflects a surge in private net lending after the GFC.** The increase has reverted only slowly and, to date, incompletely. In deficit AEs, it has not been fully offset by public borrowing. However, while for corporations, the surge appears to be broadly in line with cyclical patterns and structural trends that were already at work before the GFC—notably a trend increase in gross corporate saving—the same does not appear to hold for households.

53. **Overall, the findings from this section suggest that these large excess current account surpluses would continue to persist if not addressed.** At this juncture, it is unclear how these large and persistent surpluses in AEs—a significant portion of which are excessive—will correct, especially given weak automatic adjustment mechanisms—such as nominal exchange rate adjustment—in key countries. As previously discussed (see paragraphs 22 and 23), decisive policy actions will be necessary to mitigate risks from continued excess imbalances. Moreover, understanding the drivers of corporate and overall saving behavior in AEs and the role of distortions (e.g. corporate governance and capital markets) is key for the design of appropriate policy responses.

References

- Alesina, Alberto, Sukvua Ardagna, Giuseppe Nicoletti, and Fabio Schiantarelli, 2005, "Regulation and Investment," *Journal of the European Economic Association*, Vol. 3, No. 4, pp. 791–825.
- Anderson, Derek, Benjamin Hunt, Mika Kortelainen, Michael Kumhof, Douglas Laxton, Dirk Muir, Susanna Mursula, and Stephen Snudden, 2013, "Getting to Know GIMF: The Simulation Properties of the Global Integrated Monetary Fiscal Model," IMF Working Paper 13/55 (Washington: International Monetary Fund).
- Armenter, Roc, and Viktoria Hnatkovska, 2017, "Taxes and Capital Structure: Understanding Firms' Savings," *Journal of Monetary Economics*, Vol. 87, pp. 13–33.
- Bayoumi, Tamim, Douglas Laxton, and Paolo Pesenti, 2004, "Benefits and Spillovers of Greater Competition in Europe: A Macroeconomic Assessment," NBER Working Paper 10416.
- Bénétrix, Agustin S., Jay C. Shambaugh, and Philip R. Lane, 2015, "International Currency Exposures, Valuation Effects and the Global Financial Crisis," *Journal of International Economics*, Vol. 96, No. 1, pp. 98–109.
- Blanchard, Olivier, and Francesco Giavazzi, 2002, "Current Account Deficits in the Euro Area: The End of the Feldstein-Horioka Puzzle?" *Brookings Papers on Economic Activity: 2* (Washington: Brookings Institution).
- Blanchard, Olivier, 2003, "Macroeconomic Effects of Regulation and Deregulation in Goods and Labor Markets," *Quarterly Journal of Economics*, Vol. 118, No. 3, pp. 879–907.
- Blanchard, Olivier, and Gian Maria Milesi-Ferretti, 2011, "(Why) Should Current Account Balances Be Reduced?" IMF Staff Discussion Note SDN/11/03 (Washington: International Monetary Fund).
- Caballero, Ricardo, Emmanuel Farhi, and Pierre-Olivier Gourinchas, 2016, "Safe Asset Scarcity and Aggregate Demand," *American Economic Review: Papers and Proceedings*, Vol. 106, No. 5, pp. 513–18.
- Cacciatore, Matteo, Romain Duval, Giuseppe Fiori, and Fabio Ghironi, 2016, "Market Reforms in the Time of Imbalance," *Journal of Economic Dynamics and Control*, Vol. 72, pp. 69–93.
- Chen, Peter, Loukas Karabarbounis, and Brent Neiman, 2017, "The Global Rise of Corporate Saving," *Journal of Monetary Economics* (unpublished).
- Culiuc, Alexander, and Annette Kyobe, "Structural Reforms and External Rebalancing," IMF Working Paper (unpublished; Washington: International Monetary Fund).
- Eichengreen, Barry, and Peter Temin, 2010, "Fetters of Gold and Paper," *Oxford Review of Economic Policy*, Vol. 26, No. 3, pp. 370–84.

- Falato, Antonio, Dalida Kadyrzhanova, and Jae W. Sim, 2013, "Rising Intangible Capital, Shrinking Debt Capacity, and the US Corporate Savings Glut," *Finance and Economics Discussion Series 2013-67*, Federal Reserve Board, Washington, DC.
- Feldstein, Martin, and Charles Horioka, 1980, "Domestic Saving and International Capital Flows," *Economic Journal*, Vol. 90, No. 358, pp. 314-29.
- Fournier Jean-Marc, and Isabell Koske, 2010, "A Simple Model of the Relationship Between Productivity, Saving and the Current Account", *OECD Department Working Papers*, No.816.
- Gruber, Joseph W., and Steven B. Kamin, 2016, "The Corporate Saving Glut and Falloff of Investment Spending in OECD Economies," *IMF Economic Review*, International Monetary Fund, Vol. 64, No. 4, pp. 777-99.
- International Monetary Fund, 2006a, "Oil Prices and Global Imbalances," *World Economic Outlook*, April, Chapter 2.
- _____, 2006b, "Awash with Cash: Why are Corporate Savings So High?", *World Economic Outlook*, April, Chapter 4.
- _____, 2007a, "Exchange Rates and the Adjustment of External Imbalances," *World Economic Outlook*, April, Chapter 3.
- _____, 2007b, "Wage Formation and Competitiveness in Belgium," *Selected Issues Paper*, January, Chapter 2.
- _____, 2010, "Getting the Balance Right: Transitioning out of Sustained Current Account Surpluses," Chapter 4 of the *World Economic Outlook*, April.
- _____, 2015, "Private Investment: What's the Holdup?" *World Economic Outlook*, April, Chapter 4.
- _____, 2016, "Time for a Supply-Side Boost? Macroeconomic Effects of Labor and Product Market Reforms in Advanced Economies," *World Economic Outlook*, April.
- Kennedy, Mike, and Torsten Sløk, 2005, "Structural Policy Reforms and External Imbalances," *OECD Economics Department Working Paper No. 415* (Paris: Organization for Economic Co-operation and Development).
- Kumhof, Michael, Douglas Laxton, Dirk Muir and Susanna Mursula, 2010, "The Global Integrated Monetary Fiscal Model (GIMF)—Theoretical Structure," *IMF Working Paper 10/34* (Washington: International Monetary Fund).

Lane, Philip R., and Gian Maria Milesi-Ferretti, 2017, "International Financial Integration in the Aftermath of the Global Financial Crisis," IMF Working Paper 17/115 (Washington: International Monetary Fund).

Milesi-Ferretti, Gian Maria and Assaf Razin, 1998, "Sharp Reductions in Current Account Deficits: An Empirical Analysis," *European Economic Review*, 42, pp. 897-908.

Obstfeld, Maurice, and Kenneth Rogoff, 2000, "The Six Major Puzzles in International Macroeconomics: Is There a Common Cause?" in NBER Macroeconomics Annual, ed. by Ben Bernanke and Kenneth Rogoff (Cambridge, Massachusetts: MIT Press).

_____, 2007, "The Unsustainable U.S. Current Account Position Revisited", in G7 Current Account Imbalances: Sustainability and Adjustment, ed. by Richard Clarida (Chicago: University of Chicago Press).

Organization for Economic Cooperation and Development, 2011, "The Impact of Structural Reforms on Current Account Imbalances," OECD Economics Department Policy Notes, No. 3 (Paris).

Pinkowitz, Lee, René M. Stulz, and Rohan Williamson, 2016, "Do US Firms Hold More Cash than Foreign Firms Do?" *Review of Financial Studies*, Vol. 29, No. 2, pp. 309-48.

Poterba, James M., 1987, Tax Policy and Corporate Saving, *Brookings Papers on Economic Activity*: 2, pp. 455-515 (Washington: Brookings Institution).

Quinn, Dennis, 1997, "The Correlates of Change in International Financial Regulation", *American Political Science Review*, Vol. 91, pp. 531-51.

Table 1. Selected Economies: Current Account Balance, 2013-16 1/

	In billions of USD				In percent of World GDP				In percent of GDP			
	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016
Top 15 Surplus Economies in 2016												
Germany	251.8	289.7	288.5	289.0	0.3	0.4	0.4	0.4	6.7	7.5	8.6	8.3
China	148.2	236.0	304.2	196.4	0.2	0.3	0.4	0.3	1.5	2.2	2.7	1.7
Japan	45.9	36.8	134.1	188.1	0.1	0.0	0.2	0.3	0.9	0.8	3.1	3.8
Korea	81.1	84.4	105.9	98.7	0.1	0.1	0.1	0.1	6.2	6.0	7.7	7.0
Switzerland	79.0	61.8	77.3	70.4	0.1	0.1	0.1	0.1	11.5	8.8	11.5	10.7
Taiwan Province of China	53.1	63.8	76.2	75.3	0.1	0.1	0.1	0.1	10.4	12.0	14.5	14.2
Netherlands	85.5	78.6	66.2	64.8	0.1	0.1	0.1	0.1	9.9	8.9	8.8	8.4
Singapore	51.2	60.8	53.8	56.5	0.1	0.1	0.1	0.1	16.9	19.7	18.1	19.0
Italy	20.5	40.5	26.3	47.3	0.0	0.1	0.0	0.1	1.0	1.9	1.4	2.6
Thailand	-4.8	15.1	32.1	46.8	0.0	0.0	0.0	0.1	-1.2	3.7	8.1	11.5
Denmark	26.7	31.4	27.6	24.3	0.0	0.0	0.0	0.0	7.8	8.9	9.2	7.9
Spain	20.7	14.9	16.3	24.1	0.0	0.0	0.0	0.0	1.5	1.1	1.4	2.0
Sweden	30.5	26.6	23.3	23.1	0.0	0.0	0.0	0.0	5.3	4.6	4.7	4.5
Iran	26.5	13.6	9.0	10.9	0.0	0.0	0.0	0.0	6.6	3.2	2.3	2.4
Russia	33.4	57.5	68.9	25.0	0.0	0.1	0.1	0.0	1.5	2.8	5.0	1.9
Top 15 Deficit Economies in 2016												
United States	-349.5	-373.8	-434.6	-451.7	-0.5	-0.5	-0.6	-0.6	-2.1	-2.1	-2.4	-2.4
United Kingdom	-119.6	-140.0	-122.7	-114.5	-0.2	-0.2	-0.2	-0.2	-4.4	-4.7	-4.3	-4.4
Canada	-59.4	-43.6	-52.8	-50.5	-0.1	-0.1	-0.1	-0.1	-3.2	-2.4	-3.4	-3.3
Australia	-48.3	-41.7	-58.2	-33.3	-0.1	-0.1	-0.1	0.0	-3.2	-2.9	-4.7	-2.6
Turkey	-63.6	-43.6	-32.1	-32.6	-0.1	-0.1	0.0	0.0	-6.7	-4.7	-3.7	-3.8
Mexico	-31.0	-26.2	-33.3	-27.9	0.0	0.0	0.0	0.0	-2.5	-2.0	-2.9	-2.7
France	-24.6	-36.2	-10.7	-24.5	0.0	0.0	0.0	0.0	-0.9	-1.3	-0.4	-1.0
Algeria	0.8	-9.4	-27.3	-26.3	0.0	0.0	0.0	0.0	0.4	-4.4	-16.6	-16.9
Saudi Arabia	135.4	73.8	-56.7	-24.9	0.2	0.1	-0.1	0.0	18.1	9.8	-8.7	-3.9
Brazil	-74.8	-104.2	-59.4	-23.5	-0.1	-0.1	-0.1	0.0	-3.0	-4.2	-3.3	-1.3
India	-32.3	-26.8	-22.1	-15.2	0.0	0.0	0.0	0.0	-1.7	-1.3	-1.1	-0.7
Egypt	-6.4	-2.4	-12.0	-19.8	0.0	0.0	0.0	0.0	-2.2	-0.8	-3.6	-6.0
Indonesia	-29.1	-27.5	-17.5	-16.9	0.0	0.0	0.0	0.0	-3.2	-3.1	-2.0	-1.8
Argentina	-12.1	-8.0	-16.8	-14.2	0.0	0.0	0.0	0.0	-2.0	-1.4	-2.7	-2.6
Libya	8.9	-11.7	-18.4	-16.0	0.0	0.0	0.0	0.0	14.1	-34.5	-61.7	-47.4
<u>Memorandum item:</u>												
Euro Area	291.3	332.3	373.3	397.8	0.4	0.4	0.5	0.5	2.2	2.5	3.2	3.3
Statistical discrepancy	400.6	386.5	238.9	248.8	0.5	0.5	0.3	0.3
Surpluses (world)	1,517.4	1,563.4	1,506.4	1,506.4	2.0	1.9	2.0	1.8
Deficits (world)	-1,118.3	-1,149.9	-1,281.6	-1,124.3	-1.5	-1.4	-1.7	-1.5

Source: World Economic Outlook and Fund Staff calculations.

1/ Sorted by size (in USD) of surplus and deficit in 2016.

2/ For India, data are presented on a fiscal year basis.

Table 2. Summary of Staff-Assessed Current Account and REER Gaps, 2016

Country	Overall Assessment	Current Account (% GDP)		CA Gap (% GDP)			REER Gap (Percent)			Int'l Investment Position (% GDP)			CA/REER Elasticity
		Actual	Cycl. Adj.	Midpoint	Low	High	Midpoint	Low	High	Net	Liabilities	Assets	
Australia	Moderately Weaker	-2.6	-2.0	-1.0	-2.0	0.0	5.0	0.0	10.0	-59	187	128	0.19
Belgium	Weaker	-0.4	-0.5	-3.3	-4.3	-2.3	7.5	5.0	10.0	47	416	464	0.71
Brazil	Broadly Consistent	-1.3	-2.1	-0.5	-1.5	0.5	5.0	-5.0	15.0	-40	83	43	0.09
Canada	Moderately Weaker	-3.3	-2.5	-1.6	-2.6	-0.6	6.0	2.0	10.0	8	201	209	0.27
China	Moderately Stronger	1.7	1.8	1.5	0.5	2.5	0.0	-10.0	10.0	16	42	58	0.23
Euro Area	Broadly Consistent	3.3	2.9	0.3	-0.5	1.0	-1.0	-5.0	3.0	-6	231	226	0.17
France	Weaker	-1.0	-1.7	-2.8	-3.8	-1.8	11.0	8.0	14.0	-15	301	286	0.27
Germany	Substantially Stronger	8.3	8.5	4.5	3.0	6.0	-15.0	-20.0	-10.0	52	199	251	0.38
Hong Kong SAR	Broadly Consistent	4.6	...	0.0	-1.5	1.5	0.0	-5.0	5.0	368	1059	1428	...
India	Broadly Consistent	-0.7	-1.1	0.8	-0.2	1.8	2.5	-5.0	10.0	-16	40	24	0.18
Indonesia	Broadly Consistent	-1.8	-0.9	0.0	-1.0	1.0	0.0	-5.0	5.0	-34	66	32	0.17
Italy	Moderately Weaker	2.6	1.5	-2.0	-3.0	-1.0	9.0	6.0	12.0	-14	156	142	0.25
Japan	Moderately Stronger	3.8	3.1	1.0	0.0	2.0	-7.0	-14.0	0.0	62	112	174	0.14
Korea	Stronger	7.0	6.0	3.6	1.6	5.6	-10.0	-15.0	-5.0	20	68	88	0.33
Malaysia	Stronger	2.4	3.6	2.3	1.3	3.3	-8.0	-11.5	-4.5	5	125	130	0.29
Mexico	Broadly Consistent	-2.7	-2.0	0.0	-1.0	1.0	-10.0	-15.0	-5.0	-46	102	56	0.13
Netherlands	Stronger	8.4	8.5	3.0	2.0	4.0	-9.0	-12.0	-6.0	72	1026	1098	0.33
Poland	Broadly Consistent	-0.3	-0.1	0.9	-0.1	1.9	-5.0	-10.0	0.0	-58	111	52	0.43
Russia	Moderately Weaker	1.9	4.2	-1.0	-2.0	0.0	5.0	0.0	10.0	18	78	96	0.25
Saudi Arabia	Substantially Weaker	-3.9	...	-7.7	-9.7	-5.7	20.0	15.0	25.0	91	53	144	...
Singapore	Substantially Stronger	19.0	...	5.5	2.5	8.5	-11.0	-17.0	-5.0	214	822	1036	...
South Africa	Moderately Weaker	-3.3	-3.1	-1.5	-2.5	-0.5	5.0	0.0	10.0	4	137	141	0.27
Spain	Weaker	2.0	1.1	-2.0	-3.0	-1.0	7.5	5.0	10.0	-82	233	152	0.28
Sweden	Stronger	4.5	5.0	2.0	1.0	3.0	-7.5	-10.0	-5.0	16	271	287	0.35
Switzerland	Broadly Consistent	10.7	10.5	0.8	-1.3	2.8	-1.5	-5.5	2.5	131	558	689	0.52
Thailand	Substantially Stronger	11.5	11.2	5.0	3.0	7.0	-8.0	-11.0	-5.0	-8	102	94	0.63
Turkey	Weaker	-3.8	-3.7	-2.5	-3.5	-1.5	11.3	7.5	15.0	-41	66	25	0.19
United Kingdom	Weaker	-4.4	-4.1	-2.5	-4.0	-1.0	7.5	0.0	15.0	22	497	519	0.24
United States	Moderately Weaker	-2.4	-2.3	-1.2	-1.7	-0.7	15.0	10.0	20.0	-44	172	129	0.12

Sources: IMF Staff Assessments and IMF International Financial Statistics (IFS).

Table 3. Summary of EBA and Staff-Assessed CA Gaps, 2016
(in percent of GDP)

Country	Actual CA	Cycl Adj. CA	EBA Norm	EBA Gap	Staff CA Gap 1/	Staff Adjustments [F=D-E] 2/			Staff CA Gap Range	STD of EBA Gap	NIIP	CA NFA Stabilizing
	[A]	[B]	[C]	[D=B-C]	[E]	Total	Norm	Other				
Australia	-2.6	-2.0	-1.5	-0.5	-1.0	0.5	...	0.5	+/-1	0.66	-58.7	-2.8
Belgium	-0.4	-0.5	2.6	-3.2	-3.3	0.1	...	0.1	+/-1	1.31	47.2	2.1
Brazil	-1.3	-2.1	-2.5	0.5	-0.5	1.0	1.0	...	+/-1	0.51	-39.8	-1.2
Canada	-3.3	-2.5	0.6	-3.1	-1.6	-1.5	-1.5	...	+/-1	0.90	8.4	0.9
China	1.7	1.8	0.2	1.5	1.5	0.0	...	0.0	+/-1	1.61	16.1	1.6
Euro Area	3.3	2.9	3.1	-0.2	0.3	-0.4	-0.4	...	+/-0.75	0.90	-5.6	-0.5
France	-1.0	-1.7	1.2	-2.9	-2.8	-0.1	...	-0.1	+/-1	0.64	-15.0	-0.7
Germany	8.3	8.5	4.5	4.0	4.5	-0.5	-0.5	...	+/-1.5	1.17	51.8	1.6
India	-0.7	-1.1	-4.2	3.1	0.8	2.3	1.7	0.6	+/-1	0.89	-16.4	-2.7
Indonesia	-1.8	-0.9	-0.9	0.0	0.0	0.0	...	0.0	+/-1	1.25	-34.4	-3.2
Italy	2.6	1.5	4.0	-2.5	-2.0	-0.5	-0.5	...	+/-1	1.01	-14.2	-0.8
Japan	3.8	3.1	3.4	-0.3	1.0	-1.3	-1.1	-0.2	+/-1	1.82	62.2	2.8
Korea	7.0	6.0	1.7	4.3	3.6	0.7	...	0.7	+/-2	1.87	19.7	0.7
Malaysia	2.4	3.6	1.1	2.5	2.3	0.2	...	0.2	+/-1	1.08	5.3	0.6
Mexico	-2.7	-2.0	-1.9	-0.1	0.0	-0.1	...	-0.1	+/-1	0.46	-46.1	-2.3
Netherlands	8.4	8.5	5.3	3.2	3.0	0.2	...	0.2	+/-1	1.61	72.3	2.4
Poland	-0.3	-0.1	-0.7	0.6	0.9	-0.3	...	-0.3	+/-1	1.02	-58.5	-3.1
Russia	1.9	4.2	6.3	-2.0	-1.0	-1.0	-1.0	...	+/-1	1.85	17.7	1.0
South Africa	-3.3	-3.1	-0.7	-2.4	-1.5	-0.9	-0.9	...	+/-1	0.88	3.8	-1.3
Spain 3/	2.0	1.1	1.8	-0.7	-2.0	1.3	1.3	...	+/-1	1.92	-81.6	-1.7
Sweden	4.5	5.0	-1.4	6.4	2.0	4.4	1.0	3.4	+/-1	0.53	15.8	0.1
Switzerland	10.7	10.5	7.5	3.0	0.8	2.3	...	2.3	+/-2	0.71	131.0	8.9
Thailand	11.5	11.2	1.2	10.0	5.0	5.0	...	5.0	+/-2	1.82	-7.8	-0.6
Turkey	-3.8	-3.7	-0.6	-3.0	-2.5	-0.5	-0.5	...	+/-1	1.14	-41.5	-2.3
United Kingdom	-4.4	-4.1	0.0	-4.0	-2.5	-1.5	...	-1.5	+/-1.5	0.56	21.9	-0.2
United States	-2.4	-2.3	-1.3	-1.0	-1.2	0.2	...	0.2	+/-0.5	0.56	-43.7	-1.3
Hong Kong SAR	4.6	2.5	0.0	+/-1.5	...	368.2	...
Singapore	19.0	18.5	5.5	+/-3	...	213.9	...
Saudi Arabia	-3.9	-3.7	-7.7	+/-2	...	90.9	...
Discrepancy 4/	-0.07

Source: Fund staff estimates.

1/ Refers to the mid-point of the CA Gap.

2/ Breakdown between norm and other factors (namely temporary or measurement errors) is approximate in some cases.

3/ For Spain, we report the CA level required to reduce NIIP by 5 percentage points of GDP annually. The NFA stabilizing CA is -1.6 percent of GDP.

4/ Weighted average sum of staff-assesed CA gaps.

Table 4. Selected ESR Countries: Current Account Regression Policy Gap Contributions, 2016
 (in percent of GDP)

	Fiscal Gap										Public Health Exp Gap					Change in FX Reserves+Cap Controls					Other/Private Credit Gap						
	EBA Gap			Domestic				Domestic				Domestic				Domestic				Domestic				Domestic			
	Total 1/	Identified	Residual	Total 1/	Dom2/	Coeff	P	P*	Total 1/	Dom2/	Coeff	P	P*	Total 1/	Dom2/	Coeff	P	P*	Total 1/	Dom2/	Coeff	P	P*	Total 1/	Dom2/	Coeff	P
Australia	-0.5	0.3	-0.8	-0.1	-1.0	0.47	-2.1	0.0	0.2	0.4	-0.50	6.0	6.8	0.1	0.0	0.45	0.6	0.2	0.1	0.0	-0.021	51.2	51.2				
Belgium	-3.2	-0.7	-2.5	-0.6	-1.5	0.47	-2.4	0.8	-0.2	-0.1	-0.50	8.2	8.1	0.1	0.0	0.45	-0.2	-0.2	0.1	0.0	-0.021	25.8	25.8				
Brazil	0.5	-1.0	1.5	-1.4	-2.3	0.47	-8.0	-3.0	0.1	0.3	-0.50	4.1	4.7	0.2	0.1	0.45	0.5	0.0	0.1	0.0	-0.021	26.7	26.7				
Canada	-3.1	0.5	-3.7	0.8	-0.1	0.47	-1.5	-1.2	-0.1	0.0	-0.50	7.6	7.6	0.1	0.0	0.45	0.4	0.0	-0.1	-0.2	-0.021	53.0	43.0				
China	1.5	-0.4	1.9	-0.5	-1.4	0.47	-3.6	-0.7	0.9	1.0	-0.50	1.7	3.8	-0.8	-0.9	0.45	-3.9	0.0	-0.5	-0.6	-0.021	56.2	26.2				
Euro Area	-0.2	0.4	-0.6	0.6	-0.3	0.47	-0.9	-0.2	-0.2	0.0	-0.50	8.1	8.0	0.1	0.0	0.45	0.1	0.0	0.1	-0.1	-0.021	22.4	19.3				
France	-2.9	-0.2	-2.6	-0.2	-1.1	0.47	-2.3	0.0	-0.1	0.0	-0.50	8.9	8.9	0.1	0.0	0.45	0.1	0.0	0.1	0.0	-0.021	10.3	10.3				
Germany	4.0	1.4	2.6	1.5	0.6	0.47	0.7	-0.5	-0.1	0.0	-0.50	8.7	8.7	0.1	0.0	0.45	0.1	0.0	0.1	0.0	-0.021	-5.4	-5.4				
India	3.1	1.1	2.0	0.2	-0.7	0.47	-6.5	-5.0	-0.1	0.1	-0.50	1.4	1.5	0.3	0.2	0.45	1.0	0.0	0.1	-0.1	-0.021	17.6	15.0				
Indonesia	0.0	2.0	-2.0	0.9	0.0	0.47	-2.5	-2.5	0.4	0.5	-0.50	1.4	2.4	0.3	0.2	0.45	1.3	0.0	0.1	0.0	-0.021	2.1	2.9				
Italy	-2.5	0.4	-2.8	0.4	-0.5	0.47	-1.1	0.0	-0.1	0.0	-0.50	7.1	7.1	0.1	0.0	0.45	-0.1	0.0	0.1	0.0	-0.021	45.0	45.0				
Japan	-0.3	-1.0	0.6	-1.0	-1.9	0.47	-3.9	0.1	-0.1	0.0	-0.50	8.4	8.4	0.1	0.0	0.45	-0.1	0.2	0.1	0.0	-0.021	6.2	6.2				
Korea	4.3	2.5	1.7	1.9	1.0	0.47	2.1	-0.1	0.4	0.6	-0.50	4.1	5.3	0.2	0.1	0.45	0.5	-0.7	0.1	0.0	-0.021	31.0	31.0				
Malaysia	2.5	1.3	1.2	0.3	-0.6	0.47	-3.2	-2.0	0.8	0.9	-0.50	2.0	3.8	0.2	0.1	0.45	1.2	1.6	0.0	-0.1	-0.021	13.7	7.7				
Mexico	-0.1	0.9	-1.0	0.2	-0.7	0.47	-4.0	-2.5	0.3	0.5	-0.50	3.1	4.1	0.1	0.0	0.45	0.0	0.0	0.1	0.0	-0.021	12.8	12.8				
Netherlands	3.2	1.4	1.8	1.5	0.6	0.47	0.7	-0.5	-0.1	0.0	-0.50	9.5	9.5	0.1	0.0	0.45	-0.4	0.1	0.1	0.0	-0.021	79.0	79.0				
Poland	0.6	0.9	-0.3	0.2	-0.7	0.47	-2.5	-1.0	0.1	0.3	-0.50	4.7	5.2	0.4	0.3	0.45	4.8	3.1	0.2	0.1	-0.021	27.5	32.0				
Russia	-2.0	-1.1	-0.9	-1.6	-2.5	0.47	-2.9	2.5	0.5	0.6	-0.50	4.1	5.3	0.1	0.0	0.45	0.6	0.6	0.1	0.0	-0.021	8.6	8.6				
South Africa	-2.4	0.3	-2.7	0.2	-0.7	0.47	-3.6	-2.1	-0.1	0.0	-0.50	4.0	4.0	0.1	0.0	0.45	0.9	1.5	0.1	0.0	-0.021	34.5	34.5				
Spain	-0.7	-1.3	0.6	-0.6	-1.5	0.47	-3.3	0.0	-0.1	0.0	-0.50	7.1	7.1	0.1	0.0	0.45	0.7	0.0	-0.5	-0.6	-0.021	60.1	32.0				
Sweden	6.4	1.0	5.4	1.1	0.2	0.47	0.8	0.3	-0.1	0.1	-0.50	7.9	8.0	0.1	0.0	0.45	0.8	0.0	0.0	-0.2	-0.021	76.7	69.5				
Switzerland	3.0	1.0	2.0	1.0	0.1	0.47	0.2	0.0	-0.1	0.0	-0.50	7.5	7.5	0.1	0.0	0.45	0.8	3.5	0.1	0.0	-0.021	31.9	31.9				
Thailand	10.0	2.3	7.7	1.7	0.8	0.47	0.7	-1.0	0.0	0.1	-0.50	3.0	3.3	0.5	0.4	0.45	3.2	0.0	0.2	0.0	-0.021	40.1	42.0				
Turkey	-3.0	0.9	-4.0	1.0	0.1	0.47	-2.3	-2.6	-0.1	0.0	-0.50	3.6	3.6	0.1	0.0	0.45	0.1	0.6	0.1	-0.1	-0.021	43.2	40.0				
United Kingdom	-4.0	-0.5	-3.5	-0.5	-1.4	0.47	-3.0	0.0	-0.1	0.0	-0.50	7.8	7.8	0.1	0.0	0.45	0.3	0.5	0.1	0.0	-0.021	21.8	21.8				
United States	-1.0	-0.4	-0.6	0.0	-0.9	0.47	-3.9	-2.0	-0.5	-0.3	-0.50	8.0	7.4	0.1	0.0	0.45	0.0	0.0	0.1	0.0	-0.021	29.4	29.2				

Source: IMF staff estimates.

1/ Total contribution after adjusting for multilateral consistency.

2/ Total domestic contribution is equivalent to coefficient*(P-P*)

Table 5. 2016 Individual Country Assessments: Summary of Policy Recommendations

Country Name	Overall 2016 Assessment	Policy recommendations 1/		
		Fiscal	Monetary	Structural
Australia	Moderately Weaker	Gradual Consolidation	Further easing if growth weakens	-
Belgium	Weaker	Steady consolidation with labor tax reduction	-	Product and labor market reforms (to address labor market fragmentation).
Brazil	Broadly Consistent	Consolidation (social security reforms and new federal spending cap)	ER flexibility. Intervention to smooth volatility; maintain reserve buffers.	Improve competitiveness by lowering costs of doing business
Canada	Moderately Weaker	Medium-term consolidation	Maintaining tight macroprudential policies to ensure financial stability.	Measures geared at improving labor productivity; investing in R&D and physical capital; promoting FDI; developing services exports; and diversifying Canada's export markets.
China	Moderately Stronger	-	Gradually move toward transparent, market-based MP framework and ER flexibility (when practical).	Improve social safety nets, enhance competition, market-based financial system; continue SOE reforms, and taking steps to attract more inward FDI by ensuring that foreign investors receive the same treatment as domestic investors.
Euro Area	Broadly Consistent	Expand investment for countries with fiscal space, a more growth-friendly composition of national fiscal policies. Centralized investment schemes at regional level.	Further easing	Enhance productivity, increase competitiveness; strengthen private sector balance sheet
France	Weaker	Gradual consolidation	-	Enhance productivity; increase competitiveness; labor market reforms and wage moderation
Germany	Substantially Stronger	More growth-oriented fiscal policy	-	Reforms to address aging costs by prolonging working life.
Hong Kong SAR	Broadly Consistent	Continue prudent fiscal management	Maintain currency board	Proactive financial supervision; encourage flexible markets
India	Broadly Consistent	Continue fiscal consolidation (goods and service tax and subsidy reforms)	Maintain monetary framework with focus on low and stable inflation	Ease domestic supply bottlenecks and enhance business climate (attract FDI, boost exports and investment).
Indonesia	Broadly Consistent	Largely fiscally-neutral reform emphasizing social and health spending, keeping the overall deficit within the statutory limit over the medium term.	Focus on containing inflation, keep ER flexible and use of market-determined interest rates	Ease (trade/investment) restrictions; financial market deepening.
Italy	Moderately Weaker	Consolidation	-	Strong implementation of structural reforms, including the wage bargaining mechanism to better align wages with productivity at the firm level, and strengthen banks balance sheet to improve competitiveness
Japan	Moderately Stronger	Gradual fiscal consolidation	-	Measures to boost wages and labor supply, reduce labor market duality, enhance risk capital provision, and accelerate agricultural and services sector deregulation.
Korea	Stronger	Supportive fiscal policies	ER flexibility with limited intervention.	Strengthening the social safety net to lessen incentives for precautionary savings and addressing bottlenecks to investment.
Malaysia	Stronger	Medium-term consolidation	Exchange rate flexibility	Improvements in social protection, higher public healthcare spending, addressing the structural bottlenecks (for example, labor market frictions in terms of skills mismatch; low female participation; and weak education quality) and further improving the physical infrastructure.

Source: 2016 Individual External Assessments.

1/ This non-exhaustive list focuses on key recommendations for closing external imbalances.

Table 5. 2016 Individual Country Assessments: Summary of Policy Recommendations (Concluded)

Country Name	Overall 2016 Assessment	Policy recommendations 1/		
		Fiscal	Monetary	Structural
Mexico	Broadly Consistent	Gradual consolidation	Free-floating ER policy, and use foreign exchange intervention occasionally to prevent disorderly market conditions	Structural reforms to improve competitiveness and strengthen non-oil exports.
Netherlands	Stronger	Use fiscal space to support the recovery and boost potential growth.	-	Structural reforms to raise the productivity of small domestic firms, progress in repairing household balance sheets, and strengthening the banking system
Poland	Broadly Consistent	Gradual consolidation	Accommodative monetary policy stance; flexible exchange rate	Structural reforms are crucial to boost potential growth.
Russia	Moderately Weaker	Gradual consolidation to reduce nonoil fiscal deficit; reallocation from current to capital spending	-	Structural reforms to invigorate the private sector
Saudi Arabia	Substantially Weaker	Fiscal consolidation is necessary over the short- and medium term.	-	Structural reforms that help diversify the economy and boost the non-oil tradeable sector
Singapore	Substantially Stronger	More fiscal stimulus than envisaged would be useful to boost domestic demand	-	Singapore's ongoing structural reforms, along with the restrictions on foreign worker inflows should contribute to higher investment over the medium term.
South Africa	Moderately Weaker	Fiscal consolidation.	Seize opportunities to build-up reserves to deal with FX liquidity shocks	Improve infrastructure; strengthen education/skills; greater financial inclusion; fostering entry into key product markets; and accelerating labor and product market reforms
Spain	Weaker	Further growth-friendly fiscal adjustment.	Continued monetary accommodation at the euro area level to lift inflation	Moving forward with structural reforms of the labor market and faster implementation of product market reforms
Sweden	Stronger	Going forward it appears that a neutral fiscal stance will be sufficient to meet the medium-term surplus target.	Continued monetary accommodation to bring inflation back to target	Efforts to facilitate migrant integration into the labor market; implement reforms to ensure the recent rise in residential investment is sustained.
Switzerland	Broadly Consistent	Allow some easing of the fiscal stance.	Maintaining a sufficiently large negative interest rate differential against other major central banks, with intervention reserved for addressing inflow surges.	-
Thailand	Substantially Stronger	Boost to public infrastructure within available fiscal space	Exchange rate flexibility with limited intervention	Addressing structural rigidities by reforming social safety nets, and reducing barriers to investment.
Turkey	Weaker	Medium-term fiscal consolidation.	Monetary policy should aim to keep inflation within target, which would help support private savings. Increase net international reserves. Macropredprudential measures should be strengthened to lower foreign currency risk in the economy.	-
United Kingdom	Weaker	Gradual consolidation.	Maintain financial stability through macroprudential policies.	Broaden skill base; improve public infrastructure
United States	Moderately Weaker	Gradual consolidation.	-	Tax reform, better schooling and training of workers, measures to support the working poor, and policies to increase growth in the labor force

Source: 2016 Individual External Assessments.

1/ This non-exhaustive list focuses on key recommendations for closing external imbalances.

Technical Appendix I. Decomposing Current Account Variations¹

The current account balance is composed of trade balance and income account balance:

$$\frac{CA_t}{GDP_t} = \frac{\overbrace{EXP_t - IMP_t}^{\text{trade balance}}}{GDP_t} + \frac{\overbrace{IA_t}^{\text{income account}}}{GDP_t},$$

where nominal exports and nominal imports in trade balance can be expressed as price and volume separately:

$$\frac{\overbrace{EXP_t - IMP_t}^{\text{trade balance}}}{GDP_t} = \frac{P_t^X X_t - P_t^M M_t}{GDP_t}$$

Accordingly, the change in CA/GDP can be broken down into the change in the trade balance and the income account as:

$$\Delta \frac{CA_t}{GDP_t} = \left(\frac{P_t^X X_t - P_t^M M_t}{GDP_t} \right) - \left(\frac{P_{t-j}^X X_{t-j} - P_{t-j}^M M_{t-j}}{GDP_{t-j}} \right) + \Delta \frac{IA_t}{GDP_t},$$

and subsequently into three parts—volume effect, price effect (also called ‘terms-of-trade income windfall’), income account and a reconciliation term:

$$\begin{aligned} \Delta \frac{CA_t}{GDP_t} &= \frac{\overbrace{P_{t-j}^X (X_t - X_{t-j}) - P_{t-j}^M (M_t - M_{t-j})}^{\text{volume effect}}}{GDP_{t-j}} + \frac{\overbrace{X_{t-j} (P_t^X - P_{t-j}^X) - M_{t-j} (P_t^M - P_{t-j}^M)}^{\text{price effect}}}{GDP_{t-j}} + \overbrace{\Delta \frac{IA_t}{GDP_t}}^{\text{reconciliation}} \\ &+ \Delta \frac{\overbrace{IA_t}^{\text{income account}}}{GDP_t}. \end{aligned}$$

Similarly, from the national accounting identity in real terms, the contributions to the change of the (real) trade balance can be expressed as:

$$\frac{\Delta TB_t}{RGDP_{t-j}} = \left(\frac{\Delta RGDP_t}{RGDP_{t-j}} \right) - \left(\frac{\Delta C_t + \Delta I_t + \Delta G_t}{RGDP_{t-j}} \right),$$

where every component is measured in real terms.³

¹ Prepared by Jaebin Ahn.

² Export and import prices, P_t^X and P_t^M , are taken from national account and expressed in local currency. The reconciliation term is then given by:

$$\frac{P_t^X X_t - P_t^M M_t}{GDP_t} - \frac{P_t^X X_{t-j} - P_t^M M_{t-j}}{GDP_{t-j}} - \frac{P_{t-j}^X (X_t - X_{t-j}) - P_{t-j}^M (M_t - M_{t-j})}{GDP_{t-j}}$$

³ Changing the base year for real GDP to $t-j$, the volume effect term that can be rewritten as:

$$\frac{P_{t-j}^X X_{t-j} (X_t - X_{t-j})}{GDP_{t-j} X_{t-j}} - \frac{P_{t-j}^X M_{t-j} (M_t - M_{t-j})}{GDP_{t-j} M_{t-j}},$$

becomes identical to the contribution of net export to growth expression that can be in turn rewritten as:

$$\frac{X_{t-j}}{RGDP_{t-j}} \frac{(X_t - X_{t-j})}{X_{t-j}} - \frac{M_{t-j}}{RGDP_{t-j}} \frac{(M_t - M_{t-j})}{M_{t-j}}$$

Technical Appendix II. Calculating IIP Valuation Changes¹

The rapid process of financial integration of the past two decades has been accompanied by an increase in IIP valuation changes. This appendix discusses how to calculate these valuation changes, and highlights challenges posed by mismeasurement and data availability issues.

Calculation

A common method for calculating IIP valuation changes at an aggregate level is to obtain them as the difference between the change in the NFA position and the cumulative current account balances (plus a GDP growth component, when variables are expressed in percent of GDP). The calculation entails the following steps:

Consider the change in a country's net foreign asset (NFA) position defined as follows:

$$NFA_t - NFA_{t-1} \equiv CA_t + X_t, \quad (1)$$

where CA is the current account, and X a residual equal to net valuation gains (losses if negative) from shifts in exchange rates and asset prices plus other changes due to errors and omissions.

These variables are in levels and denominated in USD. We can rewrite equation (1) as

$$nfa_t - nfa_{t-1} \equiv ca_t + x_t + nfa_{t-1} \left(\frac{Y_{t-1}}{Y_t} - 1 \right),$$

where variables in small caps denote ratios to GDP Y_t :

To calculate the cumulative valuation changes between $t-q$ and t , we can substitute recursively and rearrange to obtain:

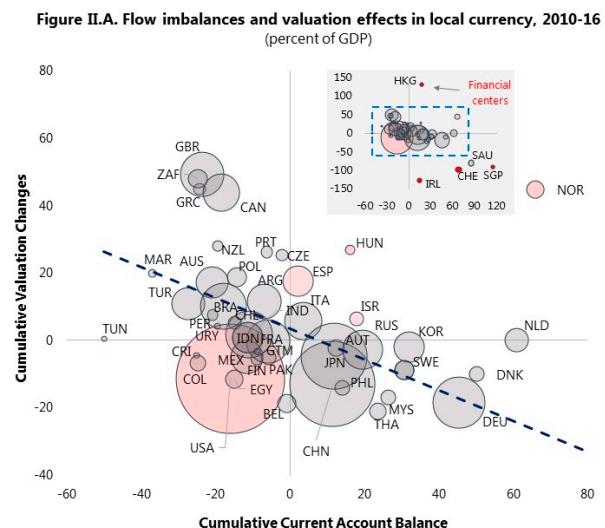
$$\sum_{s=0}^{q-1} x_{t-s} = nfa_t - nfa_{t-q} - \sum_{s=0}^{q-1} ca_{t-s} - nfa_{t-q} \left(\frac{Y_{t-q}}{Y_t} - 1 \right).$$

These valuation changes, for the period 2010-16 are reported in Figure 6 of the main text.

The calculation of valuation changes requires selecting the currency of denomination, which can affect the relative importance of flow versus stock variables. Using U.S. dollar to denominate variables may not be appropriate for economies where the U.S. dollar is not the main reserve currency (e.g. Germany). Hence, for robustness, Figure 6 of the main text is replicated here using local-currency-denominated variables (Appendix Figure II.A). Denomination in local currency produces similar results: the negative relationship between cumulative CA flows and valuation changes is maintained.

Data and measurement issues

This '*residual*' method described above has low data requirements, favoring the estimation for a wide sample of countries and years. Yet, it may be subject to measurement error, for example due to differences in flow/stock treatments (e.g. the current account excludes net retained earnings of equity portfolios),



Sources: International Financial Statistics and IMF staff calculations.

1/ Dot sizes are proportional to countries' GDP.

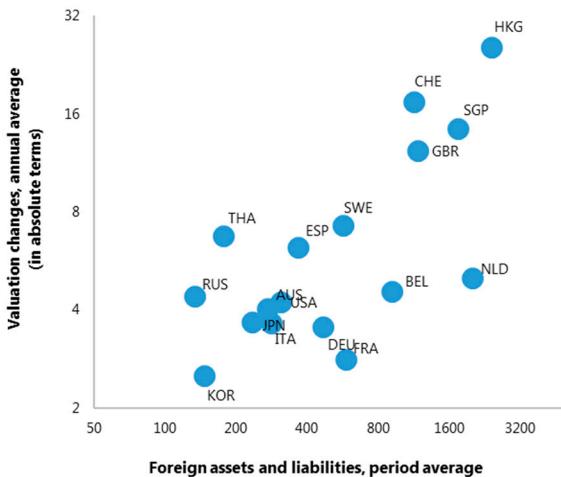
- 1/ Dot sizes are proportional to countries' GDP.
- 2/ Valuation effects are calculated as the difference between NFA changes and cumulative current account balances, both in local currency.

¹ Prepared by Daniel Garcia-Macia.

changes in IIP survey coverage (e.g., discovery of assets and liabilities not matched by corresponding flow transactions), and debt write-offs (restructuring/forgiveness). For a few countries, publicly-available reconciliation tables show the decomposition of the valuation residual into an exchange rate effect, asset price changes and other changes.

As expected, the absolute level of valuation changes tends to be positively correlated with the size of the countries' gross external positions (Appendix Figure IIb). Particularly noteworthy are financial centers as they experienced very large valuation changes during the period 2010-15. Part of these arguably reflect aforementioned sources of measurement error.

Figure II.B. ESR Economies: Valuation change and financial openness, 2010-16
(percent of GDP)



Sources: IFS and IMF staff calculations.

1/ Valuation effects are calculated as the difference between NFA changes and current account balances, both in USD. The absolute value is taken over annual valuation changes.