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Legacies, Clouds, Uncertainties

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Editor's notes:

(October 9, 2014)
In Table 4.5 on page 140, Ireland and Morocco were erroneously placed in the "Asia" grouping in the print version; they have been moved into the "Europe" and "Africa" groupings, respectively, in the electronic versions.

The final column of Table 4.1.2 on page 147 was inadvertently omitted from the print version. A corrected version of the table, including the final column, has been substituted in the electronic versions.

The data in Figure 3.16, panel 2, on page 98 were corrected after publication. A revised version of the figure, including the corrected panel, has been substituted in the electronic versions.

ASSUMPTIONS AND CONVENTIONS

A number of assumptions have been adopted for the projections presented in the *World Economic Outlook* (WEO). It has been assumed that real effective exchange rates remained constant at their average levels during July 30–August 27, 2014, except for those for the currencies participating in the European exchange rate mechanism II (ERM II), which are assumed to have remained constant in nominal terms relative to the euro; that established policies of national authorities will be maintained (for specific assumptions about fiscal and monetary policies for selected economies, see Box A1 in the Statistical Appendix); that the average price of oil will be $102.76 a barrel in 2014 and $99.36 a barrel in 2015 and will remain unchanged in real terms over the medium term; that the six-month London interbank offered rate (LIBOR) on U.S. dollar deposits will average 0.4 percent in 2014 and 0.7 percent in 2015; that the three-month euro deposit rate will average 0.2 percent in 2014 and 0.1 percent in 2015; and that the six-month Japanese yen deposit rate will yield on average 0.2 percent in 2014 and 2015. These are, of course, working hypotheses rather than forecasts, and the uncertainties surrounding them add to the margin of error that would in any event be involved in the projections. The estimates and projections are based on statistical information available through September 19, 2014.

The following conventions are used throughout the WEO:

. . . to indicate that data are not available or not applicable;

– between years or months (for example, 2013–14 or January–June) to indicate the years or months covered, including the beginning and ending years or months;

/ between years or months (for example, 2013/14) to indicate a fiscal or financial year.

"Billion" means a thousand million; "trillion" means a thousand billion.

"Basis points" refer to hundredths of 1 percentage point (for example, 25 basis points are equivalent to ¼ of 1 percentage point).

Data refer to calendar years, except in the case of a few countries that use fiscal years. Please refer to Table F in the Statistical Appendix, which lists the economies with exceptional reporting periods for national accounts and government finance data for each country.

For some countries, the figures for 2013 and earlier are based on estimates rather than actual outturns. Please refer to Table G in the Statistical Appendix, which lists the latest actual outturns for the indicators in the national accounts, prices, government finance, and balance of payments indicators for each country.

The WEO has adopted the sixth edition of the *Balance of Payments and International Investment Position Manual* (BPM6). Notable changes include the following: (1) Merchanting has been reclassified from services to exports of goods. (2) Manufacturing services on physical inputs owned by others (goods for processing in the BPM5) and maintenance and repair services (repairs on goods in the BPM5) have been reclassified from goods to services. (3) Migrants' transfers have been removed from capital transfers in the capital account because a change in ownership is no longer imputed. (4) Reverse investment in direct investment has been reclassified so as to present assets and liabilities on a gross basis. (5) A separate financial derivatives category is now included in the financial account, whereas previously it was a subitem under portfolio investment. In addition, the conventional sign for increases in assets (and liabilities) within the financial account is now positive, and balances are now computed as net acquisition of financial assets *minus* net incurrence of financial liabilities.

With the adoption of the BPM6, the Statistical Appendix tables of the WEO have also been revised. Table A13, which previously summarized data on net and private financial flows in emerging market and developing economies, is now a Summary of Financial Account Balances. Table A14 has been deleted because of data constraints. Table A15, Summary of Sources and Uses of World Savings, is now A14, Summary of Net Lending and Borrowing, and Table A16 has been renumbered as A15. Part B of the Statistical Appendix contains most of the same tables as previous WEO reports. Tables B16–B21 have been absorbed into a new Table B15, Summary of Current

Account Transactions, and into A13, Summary of Financial Account Balances. As a result, the subsequent tables have been renumbered, so that the former Tables B22 through B27 are now Tables B16 through B21.

Following the recent release of the 2011 International Comparison Program (ICP) survey for new purchasing-power-parity benchmarks, the WEO's estimates of purchasing-power-parity weights and GDP valued at purchasing power parity have been updated. For more detail, see "Revised Purchasing Power Parity Weights" in the July 2014 *WEO Update* (http://www.imf.org/external/pubs/ft/weo/2014/update/02/index.htm).

As in the April 2014 WEO, data for Syria are excluded from 2011 onward because of the uncertain political situation.

Because of the ongoing IMF program with Pakistan, the series from which the nominal exchange rate assumptions can be calculated are not made public, as the nominal exchange rate is a market-sensitive issue in Pakistan.

As in the April 2014 WEO, the consumer price projections for Argentina are excluded because of a structural break in the data. Please refer to note 5 in Table A7 of the Statistical Appendix for further details.

Data for Latvia, which were previously excluded from the euro area aggregates because of data constraints, are now included.

Projections for Ukraine, which were previously excluded because of the crisis, are once again included.

If no source is listed on tables and figures, data are drawn from the WEO database.

When countries are not listed alphabetically, they are ordered on the basis of economic size.

Minor discrepancies between sums of constituent figures and totals shown reflect rounding.

As used in this report, the terms "country" and "economy" do not in all cases refer to a territorial entity that is a state as understood by international law and practice. As used here, the term also covers some territorial entities that are not states but for which statistical data are maintained on a separate and independent basis.

Composite data are provided for various groups of countries organized according to economic characteristics or region. Unless noted otherwise, country group composites represent calculations based on 90 percent or more of the weighted group data.

The boundaries, colors, denominations, and any other information shown on the maps do not imply, on the part of the International Monetary Fund, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.

FURTHER INFORMATION AND DATA

This version of the *World Economic Outlook* (WEO) is available in full through the IMF eLibrary (www.elibrary.imf.org) and the IMF website (www.imf.org). Accompanying the publication on the IMF website is a larger compilation of data from the WEO database than is included in the report itself, including files containing the series most frequently requested by readers. These files may be downloaded for use in a variety of software packages.

The data appearing in the *World Economic Outlook* are compiled by the IMF staff at the time of the WEO exercises. The historical data and projections are based on the information gathered by the IMF country desk officers in the context of their missions to IMF member countries and through their ongoing analysis of the evolving situation in each country. Historical data are updated on a continual basis as more information becomes available, and structural breaks in data are often adjusted to produce smooth series with the use of splicing and other techniques. IMF staff estimates continue to serve as proxies for historical series when complete information is unavailable. As a result, WEO data can differ from those in other sources with official data, including the IMF's *International Financial Statistics*.

The WEO data and metadata provided are "as is" and "as available," and every effort is made to ensure, but not guarantee, their timeliness, accuracy, and completeness. When errors are discovered, there is a concerted effort to correct them as appropriate and feasible. Corrections and revisions made after publication are incorporated into the electronic editions available from the IMF eLibrary (www.elibrary.imf.org) and on the IMF website (www.imf.org). All substantive changes are listed in detail in the online tables of contents.

For details on the terms and conditions for usage of the WEO database, please refer to the IMF Copyright and Usage website (www.imf.org/external/terms.htm).

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PREFACE

The analysis and projections contained in the *World Economic Outlook* are integral elements of the IMF's surveillance of economic developments and policies in its member countries, of developments in international financial markets, and of the global economic system. The survey of prospects and policies is the product of a comprehensive interdepartmental review of world economic developments, which draws primarily on information the IMF staff gathers through its consultations with member countries. These consultations are carried out in particular by the IMF's area departments—namely, the African Department, Asia and Pacific Department, European Department, Middle East and Central Asia Department, and Western Hemisphere Department—together with the Strategy, Policy, and Review Department, the Monetary and Capital Markets Department, and the Fiscal Affairs Department.

The analysis in this report was coordinated in the Research Department under the general direction of Olivier Blanchard, Economic Counsellor and Director of Research. The project was directed by Gian Maria Milesi-Ferretti, Deputy Director, Research Department, and Thomas Helbling, Division Chief, Research Department.

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Gohar Abajyan, Hites Ahir, Gavin Asdorian, Angela Espiritu, Madelyn Estrada, Chanpheng Fizzarotti, Mitko Grigorov, Gregory Hadjian, Cleary A. Haines, Brian Hiland, Ava Yeabin Hong, Hao Jiang, Sinem Kilic Celik, Genevieve Mendiola Lindow, Yun Liu, Olivia Ma, Daniel Rivera Greenwood, Marina Rousset, Tiberiu Scutaru, Xiaobo Shao, Min Song, Rachel Szymanski, Hong Yang, and Jeremy Zook provided research assistance. Atish R. Ghosh provided guidance and suggestions. Mahnaz Hemmati, Toh Kuan, Emory Oakes, and Richard Watson provided technical support. Alimata Kini Kabore and Anduriña Espinoza-Wasil were responsible for word processing. Michael Harrup from the Communications Department led the editorial team and managed production of the publication, with assistance from Lucy Scott Morales, Sherrie Brown, Gregg Forte, and Linda Long and input from Linda Griffin Kean. The Core Data Management team from the IMF's IT department and external consultant Pavel Pimenov provided additional technical support.

The analysis has benefited from comments and suggestions by staff from other IMF departments, as well as by Executive Directors following their discussion of the report on September 25, 2014. However, both projections and policy considerations are those of the IMF staff and should not be attributed to Executive Directors or to their national authorities.

FOREWORD

The world economy is in the middle of a balancing act. On the one hand, countries must address the legacies of the global financial crisis, ranging from debt overhangs to high unemployment. On the other, they face a cloudy future. Potential growth rates are being revised downward, and these worsened prospects are in turn affecting confidence, demand, and growth today.

The interplay of these two forces—the crisis legacies proving tougher to resolve than expected and potential growth turning lower—has resulted in several downward revisions to the forecast during the past three years. The forecast in this edition of the *World Economic Outlook* is, unfortunately, no exception. World growth is mediocre and a bit worse than forecast in July. At the same time, because these two forces operate to different degrees in various countries, the evolution of the global economy has become more differentiated.

Among advanced economies, the United States and the United Kingdom in particular are leaving the crisis behind and achieving decent growth—though even for those two countries, potential growth is now lower than in the early 2000s. Japan is growing, but high public debt inherited from the past and very low potential growth create major macroeconomic and fiscal challenges. Growth nearly stalled earlier this year in the euro area, even in the core. Although this partly reflects temporary factors, the recovery has been slowed by the crisis legacies, primarily in the south, and by low potential growth nearly everywhere.

In emerging market economies, lower potential growth is the dominating factor. For these economies as a whole, potential growth is now forecast to be 1.5 percent lower than in 2011. Here again, differentiation is the rule. China is sustaining high growth, but slightly lower growth in the future is seen to be a healthy development. India has recovered from its relative slump; thanks in part to effective policies and a renewal of confidence, growth is expected once again to exceed 5 percent. In contrast, uncertain investment prospects in Russia had already lowered growth before the Ukraine crisis, and the crisis has made growth prospects worse. Uncertain prospects and low investment are also weighing on growth in Brazil.

The downside risks are clear.

First, the long period of low interest rates has led to some search for yield, and financial markets may be too complacent about the future. These risks should not be overplayed, but policymakers clearly must be on the lookout. Macroprudential tools are the right instruments to mitigate these risks; whether they are up to the task, however, is an open question.

Second, geopolitical risks have become more relevant. So far, the effects of the Ukraine crisis have not spread beyond the affected countries and their immediate neighbors. And the turmoil in the Middle East has not had much effect on the level or volatility of energy prices. But clearly, this could change in the future, with major implications for the world economy.

Third, there is a risk that the recovery in the euro area could stall, that demand could weaken further, and that low inflation could turn into deflation. This is not our baseline, because we believe euro area fundamentals are slowly improving. But should such a scenario play out, it would be the major issue confronting the world economy.

This takes me to the policy implications.

In advanced economies, policies must deal with both the crisis legacies and low potential growth. A major focus has been on improving bank balance sheets, but debt overhang of firms and households remains a serious legacy issue in a number of countries. To increase potential growth, as long as demand remains weak, monetary accommodation and low interest rates remain of the essence.

The weak recovery in the euro area has triggered a new debate about the stance of fiscal policy. The low spreads on sovereign bonds suggest that the fiscal consolidation undertaken during the past few years has built trust among financial investors that current fiscal paths are sustainable. This credibility, which has been acquired at a high price, should not be threatened. This does not imply that there is no scope to use fiscal policy to help sustain the recovery. As we argue in

Chapter 3, infrastructure investment, for example, even when financed by debt, may be justified and can help spur demand in the short term and supply in the medium term. And should the recovery stall, being ready to do more would be important.

Increasing potential output, let alone potential growth, is a tall order, and expectations should remain realistic. In most countries, specific structural reforms can help, however. The challenge, for both advanced and emerging market economies, is to go beyond the general mantra of "undertaking structural reforms" to identify both the reforms that are most needed and the reforms that are politically feasible. Perhaps more generally, the challenge for policymakers is to reestablish confidence by articulating a clear plan to deal with both the legacies of the crisis and the challenges of low potential growth.

Olivier Blanchard
Economic Counsellor

EXECUTIVE SUMMARY

Despite setbacks, an uneven global recovery continues. Largely due to weaker-than-expected global activity in the first half of 2014, the growth forecast for the world economy has been revised downward to 3.3 percent for this year, 0.4 percentage point lower than in the April 2014 World Economic Outlook *(WEO). The global growth projection for 2015 was lowered to 3.8 percent.*

Downside risks have increased since the spring. Short-term risks include a worsening of geopolitical tensions and a reversal of recent risk spread and volatility compression in financial markets. Medium-term risks include stagnation and low potential growth in advanced economies and a decline in potential growth in emerging markets.

Given these increased risks, raising actual and potential growth must remain a priority. In advanced economies, this will require continued support from monetary policy and fiscal adjustment attuned in pace and composition to supporting both the recovery and long-term growth. In a number of economies, an increase in public infrastructure investment can also provide support to demand in the short term and help boost potential output in the medium term. In emerging markets, the scope for macroeconomic policies to support growth if needed varies across countries and regions, but space is limited in countries with external vulnerabilities. And in advanced economies as well as emerging market and developing economies, there is a general, urgent need for structural reforms to strengthen growth potential or make growth more sustainable.

Despite further setbacks this year, an uneven global recovery continues. In advanced economies, the legacies of the precrisis boom and the subsequent crisis (including high private and public debt) still cast a shadow on the recovery. Emerging markets are adjusting to rates of economic growth lower than those reached in the precrisis boom and the postcrisis recovery. Overall, the pace of recovery is becoming more country specific.

Other elements are also affecting the outlook. Financial markets have been optimistic, with high equity prices, compressed spreads, and very low volatility. However, this has not translated into a pickup in investment, which—particularly in advanced economies—has remained subdued. And as discussed in the October 2014 *Global Financial Stability Report*, there are concerns that markets are underpricing risk, not fully internalizing the uncertainties surrounding the macroeconomic outlook and their implications for the pace of withdrawal of monetary stimulus in some major advanced economies. Geopolitical tensions have risen. So far their macroeconomic effects appear mostly confined to the regions involved, but there are tangible risks of more widespread disruptions. Some medium-term problems that predate the crisis, such as the impact of an aging population on the labor force and weak growth in total factor productivity, are coming back to the fore and need to be tackled. These problems show up in low potential growth in advanced economies—which may be affecting the pace of recovery today—and a decline in potential growth in emerging markets. Structural reforms to boost potential growth are needed in both.

Turning to the specifics of the outlook, global growth in the first half of 2014 did slow more than expected at the time of the April 2014 WEO. The weaker-than-expected growth reflects events in the United States, the euro area, Japan, and some large emerging market economies. In the United States, after a surprisingly dismal first quarter, activity picked up in the second quarter, and the evidence suggests that the weakness was mostly temporary. In the euro area, growth came to a halt in the second quarter, mainly on account of weak investment and exports, and uncertainty about the persistence of the growth slowdown remains. In Japan, the decline in domestic demand following the increase in the consumption tax was larger than expected. In Russia and the Commonwealth of Independent States, the weakness reflects the impact of geopolitical tensions on foreign investment, domestic production, and confidence. Lackluster domestic demand in other emerging market economies has once again proven to be more persistent than forecast—particularly in Latin America, with a contraction of GDP in Brazil and negative surprises to activity in several other countries. In China, after

a weaker-than-expected first quarter, policy measures supported stronger growth in the second. Overall, weaker-than-expected growth in some emerging markets during the first half of the year may be related to the tightening of financial conditions during the first quarter, but not generally to the slowdown in the United States, given that U.S. imports have grown at a robust pace.

The forecast envisages a rebound in growth for both advanced economies and emerging markets in the remainder of 2014 and in 2015, but at a rate that for both years is below the April 2014 WEO projections. Specifically, the global growth projection for 2014 has been marked down to 3.3 percent, 0.4 percentage point below that in April, reflecting both the legacy of the weak first half of the year, particularly in the United States, and a less optimistic outlook for several emerging markets. The projection for 2015 has been marked down modestly to 3.8 percent. These projections of a growth rebound are predicated on the assumption that key drivers supporting the recovery in advanced economies identified in the April 2014 WEO remain in place, notably a moderating of fiscal consolidation (Japan being one exception) and the continuation of highly accommodative monetary policy. They also assume a gradual decline in geopolitical tensions. Among advanced economies, the more rapid recovery reflects primarily faster growth in the United States, but also a pickup in activity in the euro area. For emerging markets, the rebound reflects a variety of country-specific as well as global factors. The former include some recovery in countries affected by geopolitical tensions and/or domestic strife in 2014, or where growth this year has been much below potential, and in other countries the gradual lifting of structural impediments to growth. Global factors—easy global financial conditions and the increase in external demand from advanced economies—should also support the pickup in emerging market growth. These global factors are also expected to support growth in low-income developing countries, which is projected to exceed 6 percent in both 2014 and 2015—although the projected easing in nonfuel commodity prices will induce some deterioration in the terms of trade for net exporters of commodities.

Downside risks have increased since the spring. Increased geopolitical tensions could prove persistent, hampering recovery in the countries directly involved and taking a toll on confidence elsewhere. And a worsening of such tensions could lead to sharply higher oil prices, asset price declines, and further economic distress. Financial market risks include a reversal of recent risk spread and volatility compression triggered by a larger-than-expected increase in U.S. long-term rates—which would also tighten financial conditions for emerging markets. Secular stagnation and low potential growth in advanced economies remain important medium-term risks, given the modest and uneven growth in those economies despite very low interest rates and the easing of other brakes to the recovery. In some major emerging market economies, the negative growth effects of supply-side constraints could be more protracted.

The pace of the global recovery has disappointed in recent years. With weaker-than-expected global growth for the first half of 2014 and increased downside risks, the projected pickup in growth may again fail to materialize or fall short of expectations. This further underscores that in most economies, raising actual and potential growth must remain a priority. Robust demand growth in advanced economies has not yet emerged despite continued very low interest rates and easing of brakes to the recovery, including from fiscal consolidation or tight financial conditions. Avoiding premature monetary policy normalization remains a priority, as does fiscal adjustment attuned in pace and composition to supporting both the recovery and long-term growth. In this context, an increase in public infrastructure investment, particularly for advanced economies with clearly identified infrastructure needs and efficient public investment processes, could provide a boost to demand in the short term and help raise potential output in the medium term. And structural reforms to raise potential output are of the essence. In emerging markets, the scope for macroeconomic policies to support growth if needed varies across countries and regions, but space is limited in countries with external vulnerabilities. And here as well, there is a general, urgent need for country-specific structural reforms to strengthen growth potential or make growth more sustainable.

CHAPTER 1

RECENT DEVELOPMENTS, PROSPECTS, AND POLICY PRIORITIES

Despite setbacks, an uneven global recovery continues. In advanced economies, the legacies of the precrisis boom and the subsequent crisis, including high private and public debt, still cast a shadow on the recovery. Emerging markets are adjusting to rates of economic growth lower than those reached in the precrisis boom and the postcrisis recovery. Overall, the pace of recovery is becoming more country specific.

Other elements are also affecting the outlook. Financial markets have been optimistic, with higher equity prices, compressed spreads, and very low volatility. However, this has not translated into a pickup in investment, which—particularly in advanced economies—has remained subdued. And there are concerns that markets are underpricing risk, not fully internalizing the uncertainties surrounding the macroeconomic outlook and their implications for the pace of withdrawal of monetary stimulus in some major advanced economies. Geopolitical tensions have risen. So far their macroeconomic effects appear mostly confined to the regions involved, but there are tangible risks of more widespread disruptions. Some medium-term problems that predate the crisis, such as the impact of an aging population on the labor force and weak growth in total factor productivity, are coming back to the fore and need to be tackled. These problems show up in low potential growth in advanced economies—which may be affecting the pace of recovery today—and a decline in potential growth in emerging markets.

With world growth in the first half of 2014 slower than expected, global growth for 2014 is projected at 3.3 percent, 0.4 percentage point lower relative to the April 2014 World Economic Outlook *(WEO). The growth projection for 2015 is also slightly lower at 3.8 percent. These projections are predicated on the assumption that key drivers supporting the recovery in advanced economies—including moderating fiscal consolidation (Japan being one exception) and highly accommodative monetary policy—remain in place. Projections also assume a decline in geopolitical tensions, supporting some recovery in stressed economies. Growth prospects across both advanced economies and emerging markets exhibit sizable heterogeneity. Among advanced economies, growth is projected to pick up, but is slower in the euro area and Japan and generally faster in the United States and elsewhere. Among major emerging markets, growth is projected to remain high in emerging Asia, with a modest slowdown in China and a pickup in India, but to stay subdued in Brazil and Russia.*

The pace of the global recovery has disappointed in recent years. With weaker-than-expected global growth for the first half of 2014 and increased downside risks, the projected pickup in growth may again fail to materialize or fall short of expectations. This further underscores that in most economies, raising actual and potential growth must remain a priority. In advanced economies, this will require continued support from monetary policy and fiscal adjustment attuned in pace and composition to supporting both the recovery and long-term growth. In a number of economies, an increase in public infrastructure investment can support demand in the short term and help boost potential output in the medium term. In emerging markets, the scope for macroeconomic policies to support growth, if needed, varies across countries and regions, but space is limited in countries with external vulnerabilities. And in advanced economies as well as in emerging market and developing economies, there is a general, urgent need for structural reforms to strengthen growth potential or make growth more sustainable.

Recent Developments and Prospects

The Starting Point: The Global Economy in the First Half of 2014

Growth in the first half of 2014 was less than the levels projected in the April 2014 WEO (Figure 1.1), reflecting a number of negative surprises.

- Weaker U.S. growth (0.8 percent at an annualized rate), with a surprising decline in activity during the first quarter of 2014. This weaker growth reflects factors that appear mostly temporary, including a harsh winter and an inventory correction, as well as a large decline in exports after rapid growth in the fourth quarter of 2013. Growth rebounded in the second quarter of this year, and labor market conditions continued to improve, with robust employ-

Table 1.1. Overview of the *World Economic Outlook* Projections

(Percent change unless noted otherwise)

	Year over Year						Q4 over Q4		
			Projections		Difference from July 2014 WEO Update			Projections	
	2012	2013	2014	2015	2014	2015	2013	2014	2015
World Output[1]	**3.4**	**3.3**	**3.3**	**3.8**	**–0.1**	**–0.2**	**3.7**	**3.1**	**3.8**
Advanced Economies	**1.2**	**1.4**	**1.8**	**2.3**	**0.0**	**–0.1**	**2.2**	**1.7**	**2.4**
United States	2.3	2.2	2.2	3.1	0.5	0.0	3.1	2.1	3.0
Euro Area	–0.7	–0.4	0.8	1.3	–0.3	–0.2	0.5	0.8	1.6
Germany	0.9	0.5	1.4	1.5	–0.5	–0.2	1.4	1.1	1.9
France	0.3	0.3	0.4	1.0	–0.4	–0.5	0.8	0.3	1.3
Italy	–2.4	–1.9	–0.2	0.8	–0.5	–0.3	–0.9	–0.1	1.3
Spain	–1.6	–1.2	1.3	1.7	0.1	0.1	–0.2	2.0	1.5
Japan	1.5	1.5	0.9	0.8	–0.7	–0.2	2.4	0.6	0.5
United Kingdom	0.3	1.7	3.2	2.7	0.0	0.0	2.7	3.5	2.2
Canada	1.7	2.0	2.3	2.4	0.1	0.1	2.7	2.2	2.4
Other Advanced Economies[2]	2.0	2.3	2.9	3.1	0.0	–0.1	2.8	2.6	4.0
Emerging Market and Developing Economies[3]	**5.1**	**4.7**	**4.4**	**5.0**	**–0.1**	**–0.2**	**5.1**	**4.5**	**5.0**
Commonwealth of Independent States	3.4	2.2	0.8	1.6	–0.1	–0.5	2.1	–1.5	1.5
Russia	3.4	1.3	0.2	0.5	0.0	–0.5	1.9	–0.8	0.9
Excluding Russia	3.6	4.2	2.0	4.0	–0.4	–0.4	. . .	. . .	. . .
Emerging and Developing Asia	6.7	6.6	6.5	6.6	0.1	0.0	6.7	6.6	6.3
China	7.7	7.7	7.4	7.1	0.0	0.0	7.7	7.5	6.8
India[4]	4.7	5.0	5.6	6.4	0.2	0.0	6.1	5.8	6.5
ASEAN-5[5]	6.2	5.2	4.7	5.4	0.1	–0.2	4.7	5.1	5.0
Emerging and Developing Europe	1.4	2.8	2.7	2.9	0.0	0.0	3.6	2.8	4.4
Latin America and the Caribbean	2.9	2.7	1.3	2.2	–0.7	–0.4	2.1	0.8	2.2
Brazil	1.0	2.5	0.3	1.4	–1.0	–0.6	2.2	0.0	1.8
Mexico	4.0	1.1	2.4	3.5	0.0	0.1	0.6	3.5	3.3
Middle East, North Africa, Afghanistan, and Pakistan	4.8	2.5	2.7	3.9	–0.4	–0.9	. . .	. . .	. . .
Sub-Saharan Africa	4.4	5.1	5.1	5.8	–0.4	0.0	. . .	. . .	. . .
South Africa	2.5	1.9	1.4	2.3	–0.3	–0.4	2.1	1.2	2.3
Memorandum									
European Union	–0.3	0.2	1.4	1.8	–0.2	–0.1	1.1	1.4	2.0
Low-Income Developing Countries	5.2	6.0	6.1	6.5	–0.2	0.0	. . .	. . .	. . .
Middle East and North Africa	4.8	2.3	2.6	3.8	–0.5	–1.0	. . .	. . .	. . .
World Growth Based on Market Exchange Rates	2.4	2.5	2.6	3.2	–0.1	–0.1	3.0	2.4	3.1
World Trade Volume (goods and services)	**2.9**	**3.0**	**3.8**	**5.0**	**–0.1**	**–0.3**	**. . .**	**. . .**	**. . .**
Imports									
Advanced Economies	1.2	1.4	3.7	4.3	0.2	–0.3	. . .	. . .	. . .
Emerging Market and Developing Economies	6.0	5.3	4.4	6.1	–0.3	–0.3	. . .	. . .	. . .
Exports									
Advanced Economies	2.0	2.4	3.6	4.5	–0.1	–0.3	. . .	. . .	. . .
Emerging Market and Developing Economies	4.6	4.4	3.9	5.8	–0.5	–0.3	. . .	. . .	. . .
Commodity Prices (U.S. dollars)									
Oil[6]	1.0	–0.9	–1.3	–3.3	–1.3	1.0	2.6	–5.0	–0.7
Nonfuel (average based on world commodity export weights)	–10.0	–1.2	–3.0	–4.1	–1.4	–0.6	–2.9	–4.3	–1.2
Consumer Prices									
Advanced Economies	2.0	1.4	1.6	1.8	0.0	0.0	1.2	1.7	1.9
Emerging Market and Developing Economies[3]	6.1	5.9	5.5	5.6	0.1	0.3	5.5	5.5	5.1
London Interbank Offered Rate (percent)									
On U.S. Dollar Deposits (six month)	0.7	0.4	0.4	0.7	0.0	–0.1	. . .	. . .	. . .
On Euro Deposits (three month)	0.6	0.2	0.2	0.1	0.0	–0.1	. . .	. . .	. . .
On Japanese Yen Deposits (six month)	0.3	0.2	0.2	0.2	0.0	0.0	. . .	. . .	. . .

Note: Real effective exchange rates are assumed to remain constant at the levels prevailing during July 30–August 27, 2014. When economies are not listed alphabetically, they are ordered on the basis of economic size. The aggregated quarterly data are seasonally adjusted.

[1]The quarterly estimates and projections account for 90 percent of the world purchasing-power-parity weights.

[2]Excludes the G7 (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and euro area countries.

[3]The quarterly estimates and projections account for approximately 80 percent of the emerging market and developing economies.

[4]For India, data and forecasts are presented on a fiscal year basis and output growth is based on GDP at market prices. Corresponding growth rates for GDP at factor cost are 4.5, 4.7, 5.6, and 6.4 percent for 2012/13, 2013/14, 2014/15, and 2015/16, respectively.

[5]Indonesia, Malaysia, Philippines, Thailand, Vietnam.

[6]Simple average of prices of U.K. Brent, Dubai Fateh, and West Texas Intermediate crude oil. The average price of oil in U.S. dollars a barrel was $104.07 in 2013; the assumed price based on futures markets is $102.76 in 2014 and $99.36 in 2015.

ment growth. Despite the slowdown, U.S. imports were stronger than expected during the first half of the year, suggesting that spillovers from weaker U.S. activity through trade channels were limited.

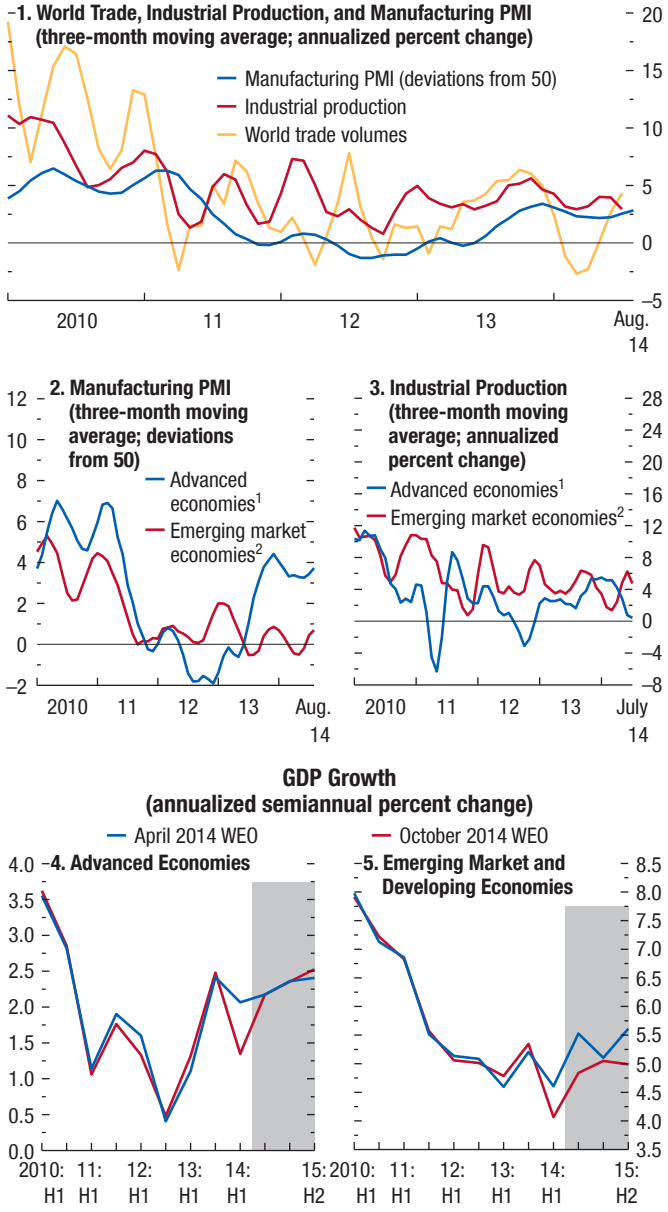
- Weaker activity in Russia and the Commonwealth of Independent States (CIS). For the former, this reflects a sizable decline in investment and large capital outflows following the intensification of tensions with Ukraine. For the latter, it reflects weakness in Ukraine and spillovers from the Russian slowdown.
- Slower growth in Latin America—particularly in Brazil, where investment remains weak and GDP contracted in the first and second quarter.
- Stagnant euro area growth, with an output contraction in Italy, no growth in France, and unexpected weakness in Germany in the second quarter.
- Weaker-than-forecast GDP expansion in Japan.
- Weaker activity in China in the first quarter. In response, the Chinese authorities have implemented measures to buttress activity, which have supported faster growth in the second quarter.

Inflation generally remains below central bank policy targets in advanced economies, an indication that many of these economies have substantial output gaps. In the euro area, inflation has remained below expectations and declined further to 0.4 percent (year over year) in August (Figure 1.2). In several economies with unemployment greater than the area-wide average, mild deflation in consumer prices continues. Inflation in the United States has risen modestly during the past several months but still remains below the Federal Reserve's longer-term objective of 2 percent. In Japan, headline and core inflation (excluding food and energy) have risen, to about 1.3 and 0.6 percent in July (year over year), respectively, excluding the effects of the consumption tax increase. In emerging market economies, inflation has remained broadly stable since the spring.

Monetary policy conditions have remained very accommodative in advanced economies and broadly unchanged in emerging markets since the spring (Figure 1.3). In the euro area, the European Central Bank (ECB) has announced a range of actions to tackle low inflation and address fragmentation, including a reduction in policy rates, targeted credit easing, and other measures to boost liquidity. In the United States, although the monetary stance remains expansionary, the reduction in the monthly volume of asset purchases by the Federal Reserve has continued, and purchases are expected to be wound down by the fall of this year.

Figure 1.1. Global Activity Indicators

Global activity and trade in the first half of 2014 were weaker than expected, reflecting a number of negative surprises, including a harsh winter and a sharper inventory correction in the first quarter in the United States, the fallout in Russia and neighboring countries from conflict in Ukraine, and slower growth in Latin America.

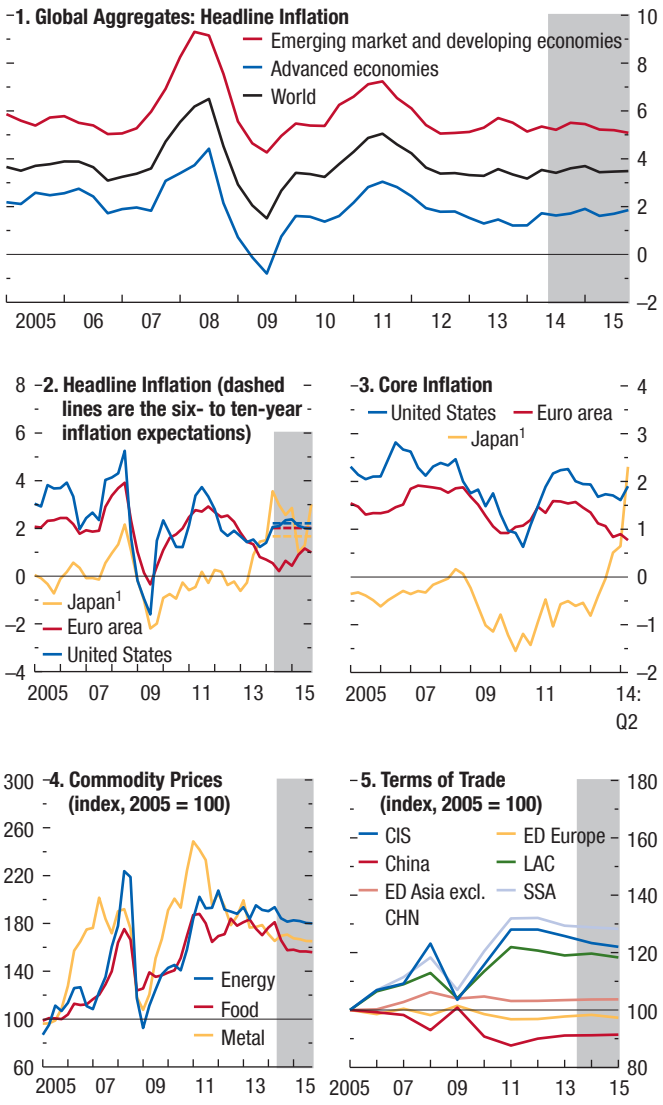


Sources: CPB Netherlands Bureau for Economic Policy Analysis; Haver Analytics; Markit Economics; and IMF staff estimates.
Note: IP = industrial production; PMI = purchasing managers' index.
[1]Australia, Canada, Czech Republic, Denmark, euro area, Hong Kong SAR (IP only), Israel, Japan, Korea, New Zealand, Norway (IP only), Singapore, Sweden (IP only), Switzerland, Taiwan Province of China, United Kingdom, United States.
[2]Argentina (IP only), Brazil, Bulgaria (IP only), Chile (IP only), China, Colombia (IP only), Hungary, India, Indonesia, Latvia (IP only), Lithuania (IP only), Malaysia (IP only), Mexico, Pakistan (IP only), Peru (IP only), Philippines (IP only), Poland, Romania (IP only), Russia, South Africa, Thailand (IP only), Turkey, Ukraine (IP only), Venezuela (IP only).

Figure 1.2. Global Inflation

(Year-over-year percent change, unless indicated otherwise)

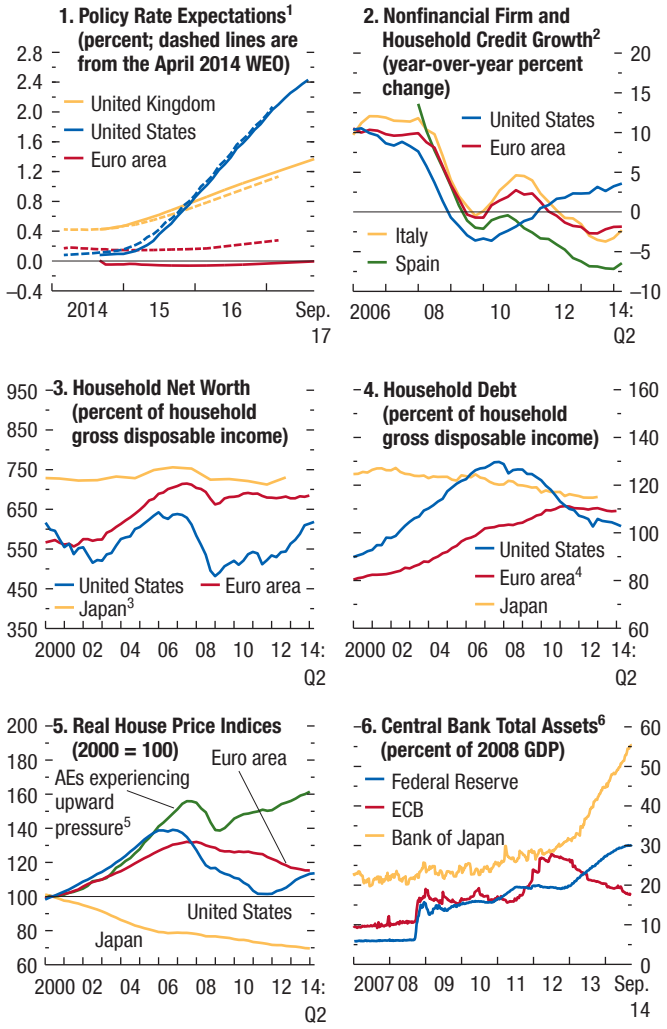
Inflation has generally remained below central bank targets in advanced economies, an indication of continued substantial economic slack. In Japan, headline inflation has risen above 3 percent while core inflation has risen above 2 percent. But excluding the effects on the price level of the increase in the consumption tax rate from 5 to 8 percent in the second quarter of 2014, headline inflation is running at about 1¼ percent, below the Bank of Japan's inflation target. In emerging market and developing economies, inflation has remained broadly stable.



Sources: Consensus Economics; IMF, Primary Commodity Price System; and IMF staff estimates.
Note: CIS = Commonwealth of Independent States; ED Asia excl. China = emerging and developing Asia excluding China; ED Europe = emerging and developing Europe; LAC = Latin America and the Caribbean; SSA = sub-Saharan Africa.
[1]In Japan, the increase in inflation in 2014 reflects, to a large extent, the increase in the consumption tax.

Figure 1.3. Monetary Conditions in Advanced Economies

Monetary conditions have remained very accommodative in advanced economies. In the United States, the reduction in monthly asset purchases by the Federal Reserve has continued, with purchases expected to be wound down about the time this *World Economic Outlook* is released, but policy rates remain close to zero. The European Central Bank recently took a range of measures to tackle low inflation and address financial fragmentation, including targeted credit easing and other measures to boost liquidity.



Sources: Bank of Spain; Bloomberg, L.P.; European Central Bank (ECB); Haver Analytics; Organisation for Economic Co-operation and Development; and IMF staff calculations.
[1]Expectations are based on the federal funds rate futures for the United States, the sterling overnight interbank average rate for the United Kingdom, and the euro interbank offered forward rate for the euro area; updated September 22, 2014.
[2]Flow-of-funds data are used for the euro area, Spain, and the United States. Italian bank loans to Italian residents are corrected for securitizations.
[3]Interpolated from annual net worth as a percentage of disposable income.
[4]Euro area includes subsector employers (including self-employed workers).
[5]Upward-pressure countries are those with a residential real estate vulnerability index above the median for advanced economies (AEs): Australia, Austria, Belgium, Canada, Estonia, France, Hong Kong SAR, Israel, New Zealand, Norway, Portugal, Sweden, United Kingdom.
[6]Data are through September 19, 2014, except in the case of ECB (September 12, 2014). ECB calculations are based on the Eurosystem's weekly financial statement.

In emerging markets, policy rates have been reduced in Chile, Mexico, and Peru following disappointing growth, and in Turkey, where part of the sharp tightening earlier in the year has been unwound. Policy rates were raised in the first half of the year in Brazil and Colombia; in Russia, which is facing pressure on the ruble; and in South Africa.

Geopolitical tensions have increased since the spring, with a worsening of the Russia-Ukraine situation and continued strife in some countries in the Middle East. So far the impact of these tensions on economic activity appears to have been mostly limited to the countries involved and their closest trading partners: financial market reaction has been muted, and commodity prices have actually eased. However, it is difficult to assess the implications of the worsening of such tensions since early July.

Financial conditions have eased since the release of the April 2014 WEO. In particular, long-term interest rates have declined in advanced economies, also reflecting expectations of a lower neutral policy rate in the United States over the medium term (Figure 1.4). Equity prices have generally risen and risk premiums have generally declined in advanced economies and emerging markets. Volatility is very low across a wide range of asset classes, and market concerns about risks to stressed advanced economies and emerging markets—as reflected, for example, in interest rate spreads—have generally decreased (Figure 1.5). As noted in the October 2014 *Global Financial Stability Report* (GFSR), market and liquidity risks have risen, and valuations in some asset classes (such as high-yield corporate bonds) appear stretched. The easing of financial conditions has been broad based. Capital flows to emerging market economies have remained robust despite generally weaker activity, and exchange rates have stabilized or strengthened in some of these economies.

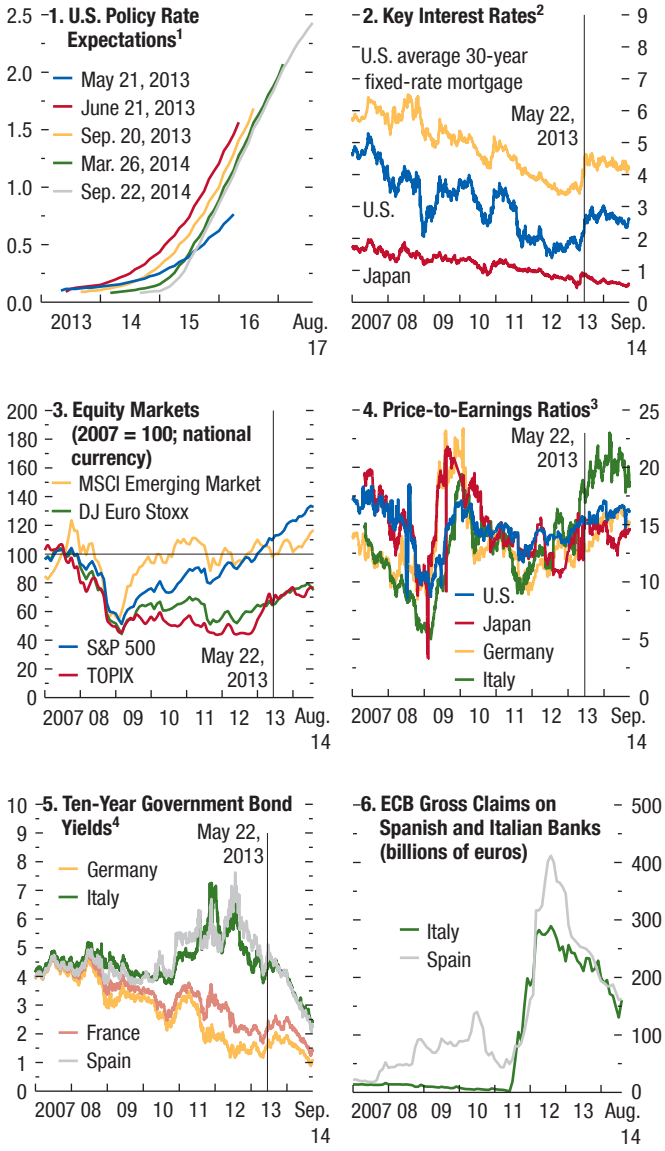
The Forecast

Policy assumptions

Fiscal consolidation is projected to moderate in advanced economies (Figure 1.6), a notable exception being Japan. In emerging markets, the fiscal policy stance is projected to remain broadly unchanged—albeit with marked differences across countries and regions, as discussed in the October 2014 *Fiscal Monitor*. On the monetary policy front, the end of asset purchases

Figure 1.4. Financial Market Conditions in Advanced Economies
(Percent, unless indicated otherwise)

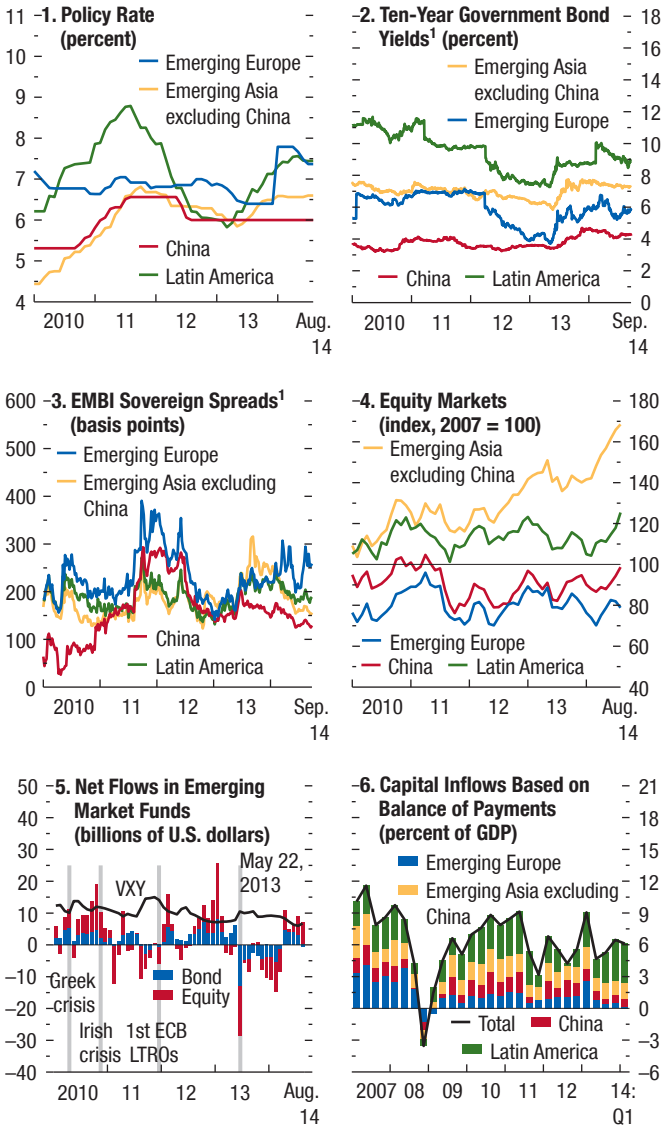
Markets expect the Federal Reserve to start increasing the federal funds rate by mid-2015, with the pace of the increase broadly unchanged compared with the April 2014 WEO. But longer-term interest rates in advanced economies have decreased further, likely reflecting in part expectations of lower neutral policy rates. The latter could explain part of the recent increase in equity prices.



Sources: Bank of Spain; Bloomberg, L.P.; *Financial Times;* Haver Analytics; Thomson Reuters Datastream; and IMF staff calculations.
Note: DJ = Dow Jones; ECB = European Central Bank; MSCI = Morgan Stanley Capital International; S&P = Standard & Poor's; TOPIX = Tokyo Stock Price Index.
[1]Expectations are based on the federal funds rate futures for the United States.
[2]Interest rates are 10-year government bond yields, unless noted otherwise. Data are through September 19, 2014.
[3]Data are through September 18, 2014. Some observations for Japan are interpolated because of missing data.
[4]Data are through September 19, 2014.

Figure 1.5. Financial Market Conditions and Capital Flows in Emerging Market Economies

Mirroring developments in advanced economies, financial conditions have also eased in emerging market economies since April 2014. Equity prices have declined, longer-term interest rate increases seen in the first quarter of 2014 have typically been more than fully reversed, and risk spreads have broadly declined. Gross capital inflows to emerging markets have also picked up again.

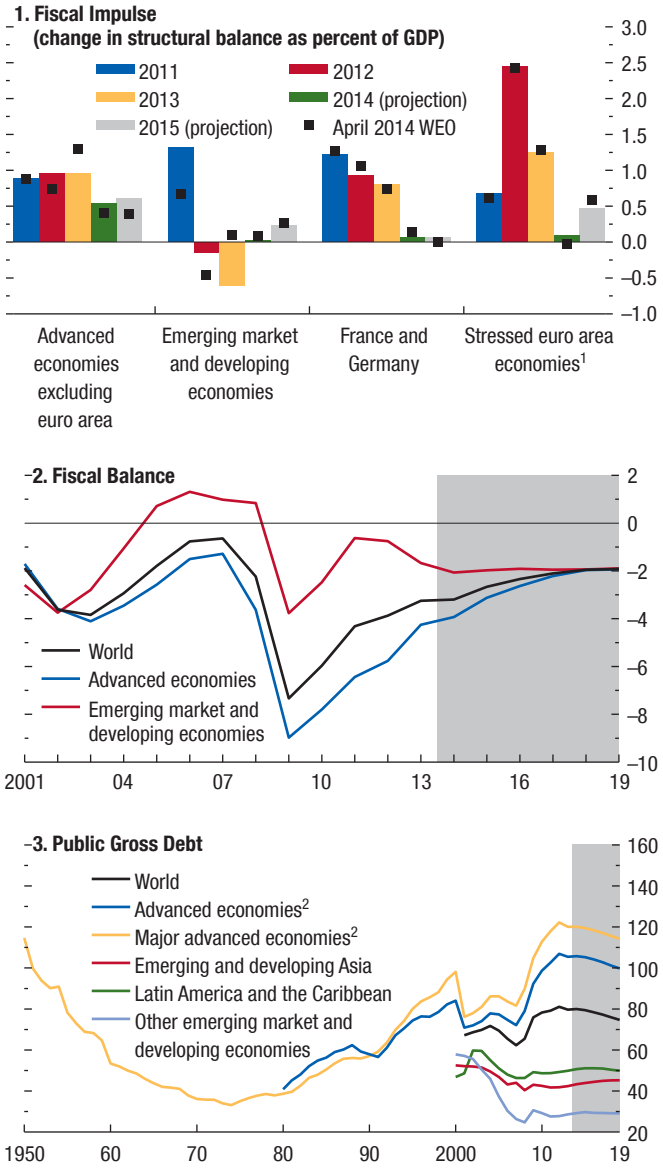


Sources: Bloomberg, L.P.; EPFR Global; Haver Analytics; IMF, International Financial Statistics database; and IMF staff calculations.
Note: ECB = European Central Bank; EMBI = J.P. Morgan Emerging Markets Bond Index; LTROs = longer-term refinancing operations; VXY = J.P. Morgan Emerging Market Volatility Index; emerging Asia excluding China includes India, Indonesia, Malaysia, the Philippines, and Thailand; emerging Europe comprises Poland, Romania (capital inflows only), Russia, and Turkey; Latin America includes Brazil, Chile, Colombia, Mexico, and Peru.
[1]Data are through September 19, 2014.

Figure 1.6. Fiscal Policies

(Percent of GDP, unless indicated otherwise)

Fiscal consolidation is expected to moderate in advanced economies in 2014–15, an exception being Japan, where the consumption tax was increased and fiscal stimulus will be unwound. In emerging market economies, fiscal policy is expected to remain broadly unchanged.



Source: IMF staff estimates.
Note: Major advanced economies = Canada, France, Germany, Italy, Japan, United Kingdom, United States.
[1]Greece, Ireland, Italy, Portugal, Spain.
[2]Data up to 2000 exclude the United States.

in the United States is projected to occur in the fourth quarter of 2014, with policy rates expected to increase beginning in the second half of 2015 (see Figure 1.3). Monetary policy normalization in the United Kingdom is projected to begin in the first half of 2015. In the euro area and Japan, very accommodative policy stances are expected to remain in place. In emerging markets, policy rates are generally expected to be on hold until rate increases start in the United States (Figure 1.7).

Other assumptions

Global financial conditions are assumed to remain accommodative, with some gradual tightening, reflected in, among other things, rising 10-year yields on U.S. Treasury bonds as the expected date for liftoff from the zero bound in the United States approaches. The process of normalizing monetary policy in the United States and the United Kingdom is assumed to proceed smoothly, without large and protracted increases in financial market volatility and sharp movements in long-term interest rates. Commodity prices are projected to ease moderately amid a still-hesitant recovery and new supply coming on stream (for example, light tight oil in the United States). Geopolitical tensions and domestic strife are assumed to ease gradually over 2015–16, allowing for a gradual recovery in the most severely affected economies.

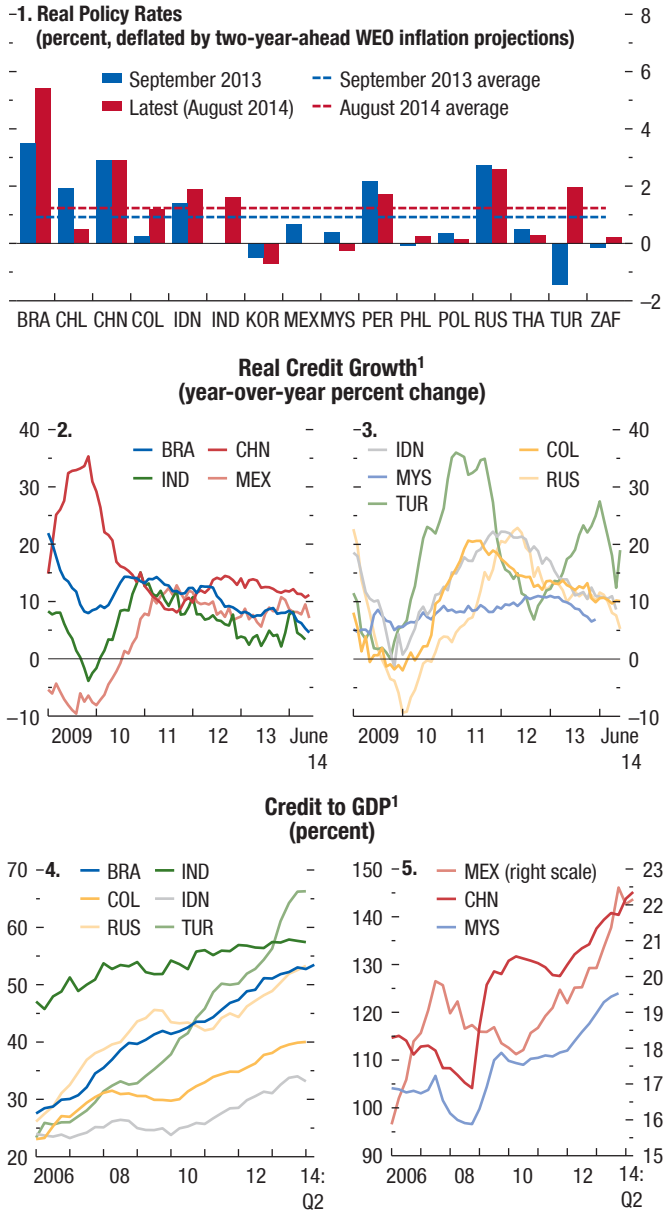
Global outlook

Global growth, computed using the new 2011 purchasing power parities of the International Comparison Program,[1] is projected to rebound to an annual rate of about 3.7 percent in the second half of 2014 and slightly higher in 2015, around 1 percentage point faster than in the first half of 2014. The increase in growth will be driven by a rebound in both advanced economies, with the United States playing the most important role, and emerging markets. Growth in most emerging market and developing economies is projected to be supported by the waning of temporary setbacks to domestic demand and production (including from geopolitical tensions and domestic strife), policy support to demand, and the gradual lifting of

[1]Starting with the July 2014 *WEO Update*, the IMF's global and regional growth figures are computed using the revised International Comparison Program purchasing-power-parity weights and therefore are not comparable to those in the April 2014 WEO. For purposes of comparison with the current WEO, global and regional growth rates reported in the April 2014 WEO have therefore been recalculated using the revised purchasing-power-parity weights.

Figure 1.7. Monetary Policies and Credit in Emerging Market Economies

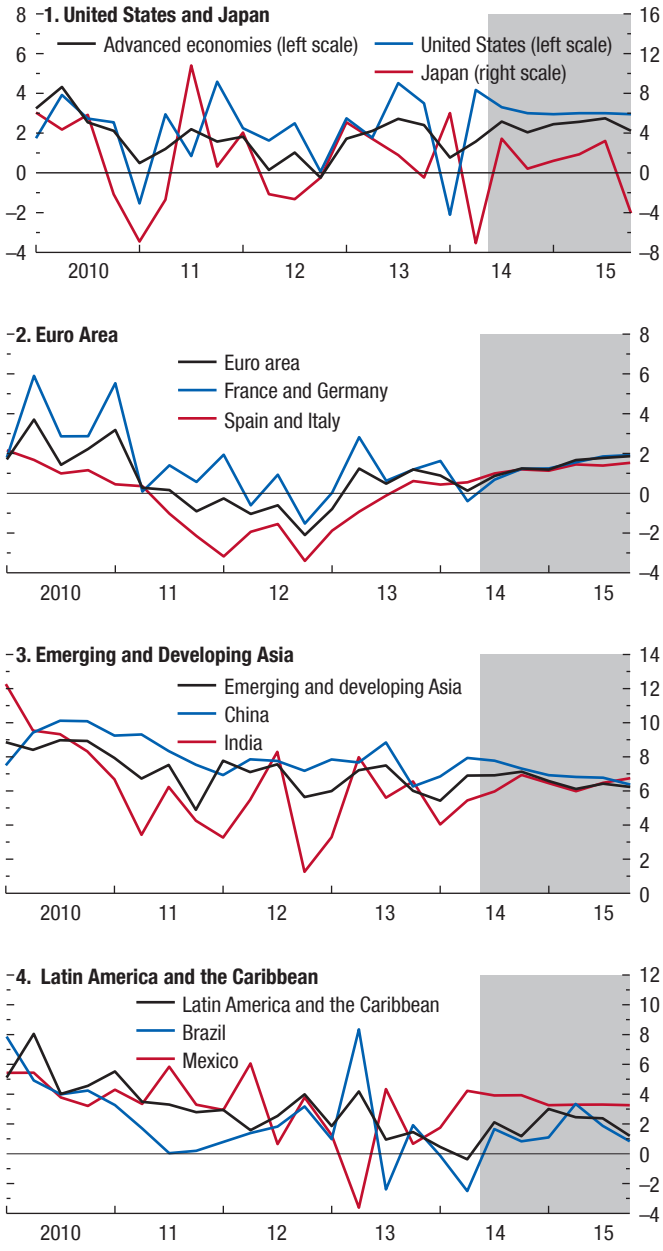
Monetary conditions have tightened in many emerging market economies, as central banks have responded with policy rate increases to the tighter external financial conditions faced by these economies since the taper talks of May 2013. Nevertheless, real policy rates remain negative or well below precrisis averages in many emerging market economies. Bank credit growth has continued to slow in emerging market economies, although it remains at double-digit rates in some. Economy-wide leverage, as measured by the ratio of bank credit to GDP, has therefore continued to increase.



Sources: Haver Analytics; IMF, International Financial Statistics (IFS) database; and IMF staff calculations.
Note: Data labels in the figure use International Organization for Standardization country codes.
[1]Credit is other depository corporations' claims on the private sector from IFS, except in the case of Brazil, for which private sector credit from the Monetary Policy and Financial System Credit Operations published by Banco Central do Brasil is used.

Figure 1.8. GDP Growth Forecasts
(Annualized quarterly percent change)

Global growth is projected to rebound to an annual rate of about 3.7 percent in the second half of 2014 and into 2015. The strongest rebound in growth is expected in the United States, whereas the crisis legacy brakes will ease only slowly in the euro area, and growth in Japan will remain modest. Growth in most emerging market and developing economies is projected to be supported by the waning of temporary setbacks to domestic demand and production (including from geopolitical tensions); policy support to demand; the gradual lifting of structural impediments to growth; and strengthening external demand from advanced economies.



Source: IMF staff estimates.

structural impediments to growth, as well as strengthening external demand from advanced economies.

Revisions to growth projections

The outlook for 2014 is marginally weaker than in the July 2014 *WEO Update*, with an upward revision for growth in the United States (Table 1.1, Figure 1.8) offset by some downward revisions for emerging markets, particularly in Latin America and the Middle East, as well as for the euro area and Japan. Relative to the April 2014 WEO, global growth for 2014 has been revised downward by some 0.4 percentage point, primarily on account of a weaker-than-expected first half of 2014, and is slightly lower for 2015. Growth forecast comparisons in the remainder of this WEO report are made with respect to those in the April 2014 WEO, adjusted to reflect the new purchasing-power-parity weights where needed.

Outlook for advanced economies

Growth is expected to strengthen in 2014–15 across most advanced economies, but the pace of recovery remains different across regions. The strongest rebound in growth is expected in the United States, whereas the crisis legacy brakes will ease only slowly in the euro area, and growth in Japan will remain modest. Growth elsewhere, including in other Asian advanced economies, Canada, and the United Kingdom, is projected to be solid.

- In the *United States*, conditions remain in place for a stronger pickup in the recovery: an accommodative monetary policy stance and favorable financial conditions, much-reduced fiscal drag (with a cumulative change in the primary structural balance of some 1¼ percent in 2014–15, compared with 1½ percent in 2013), strengthened household balance sheets, and a healthier housing market. As a result, growth is projected to average about 3 percent in the second half of 2014 into 2015. Asset purchases by the Federal Reserve are projected to end in October 2014, with a liftoff from the zero bound in mid-2015. Employment growth is projected to be strong, but some recovery of the labor market participation rate will slow the decline in the unemployment rate. The legacy of the very weak first quarter of 2014 implies a downward revision of 0.6 percentage point to the 2014 growth forecast relative to the April 2014 WEO, whereas the forecast for 2015 is roughly unchanged.

- In the *euro area*, a weak recovery is projected to gradually take hold, supported by a reduction in fiscal drag, accommodative monetary policy, and improving lending conditions, with a sharp compression in spreads for stressed economies and record-low long-term interest rates in core countries. Growth is projected to average 0.8 percent in 2014 and 1.3 percent in 2015, weaker than the April 2014 WEO projections. Prospects are uneven across countries—not just between the economies most severely affected by the crisis and the rest, but also within those groups. Among the former, growth in Spain has resumed, supported by external demand as well as higher domestic demand reflecting improved financial conditions and rising confidence. Growth is now projected to average 1.3 and 1.7 percent in 2014 and 2015, respectively, revised upward from about 1 percent in the April 2014 WEO. The Italian economy, in contrast, contracted in the first half of 2014, and on an annual basis is not expected to return to positive growth until 2015. Among the core economies, growth projections for the German economy have been revised downward relative to the April 2014 WEO, primarily reflecting a weaker recovery in domestic demand. Growth in France stalled in the first half of 2014, and projections have been revised downward.
- In *Japan*, the pattern of growth in the first half of the year was affected by the April consumption tax hike, which boosted activity in the first quarter at the expense of the second. In light of the larger-than-expected contraction in the second quarter, GDP is now projected to increase 0.9 percent in 2014—0.5 percentage point less than the April 2014 WEO projections. With private investment expected to recover, growth is projected to remain broadly stable in 2015, notwithstanding the planned fiscal adjustment.
- In most other advanced economies, including Canada, Norway, Sweden, and the United Kingdom, growth is expected to be solid. In the *United Kingdom*, activity has rebounded and become more balanced, driven by both consumption and business investment, thanks to improving credit and financial market conditions and healthy corporate balance sheets. Growth is projected to average 3.2 percent in 2014 and 2.7 percent in 2015, about ¼ percentage point stronger than forecast in the April 2014 WEO. House prices are increasing at a strong pace, especially in London, and have also been buoyant in other advanced economies, including Canada, Norway, Sweden, and Switzerland (see Box 1.1).

Outlook for emerging market and developing economies

Growth in emerging market and developing economies is projected to increase modestly in the second half of 2014 and into 2015, supported by stronger domestic demand as well as a recovery in external demand associated with faster growth in advanced economies. As in past years, emerging market and developing economies will continue to account for the lion's share of global growth—even at market exchange rates. Still, the forecast is some 0.3 percentage point weaker in both 2014 and 2015 relative to the April 2014 WEO forecast, reflecting both a weaker first-half outturn for 2014 and an assessment that some of the setbacks appear related to structural factors and are hence likely to be more lasting. Indeed, the outlook for emerging markets has been marked down for the past several WEO reports, reflecting a changing assessment of the sustainability of the growth rates achieved before the crisis and during the 2010–11 rebound (Box 1.2).

- In *China*, growth projections have been marked down slightly for both 2014 and 2015 relative to those in the April 2014 WEO. After a weaker-than-expected first-quarter outturn, the authorities deployed policy measures to support activity, including tax relief for small and medium enterprises, accelerated fiscal and infrastructure spending, and targeted cuts in required reserve ratios. Growth gained traction in the second quarter on these measures, as well as on stronger exports, and is projected to average 7.4 percent in 2014, in line with the authorities' target. For 2015, growth is projected to moderate to 7.1 percent as the economy makes the transition to a more sustainable path and residential investment slows further.
- In *India*, growth is expected to increase in the rest of 2014 and 2015, as exports and investment continue to pick up and more than offset the effect of an unfavorable monsoon on agricultural growth earlier in the year. The outlook is slightly stronger for 2014 relative to that in the April 2014 WEO, and unchanged for 2015. Growth in the Association of Southeast Asian Nations–5 (ASEAN-5) is projected at 4.7 percent in 2014, rising to 5.4 percent in 2015. Relative to that in the April 2014 WEO,

the forecast is slightly weaker for 2014—driven by a sharp slowdown in Thailand amid political tensions earlier in the year—and unchanged for 2015. Elsewhere in *emerging and developing Asia*, growth is likely to remain strong, helped in part by favorable financial conditions and broadly accommodative policies.

- Growth for *Latin America and the Caribbean* is now projected to fall to 1.3 percent in 2014, with a rebound to some 2.2 percent in 2015. Projections have been marked down by more than 1 percentage point for 2014 and 0.8 percentage point for 2015, reflecting external factors, given weaker-than-expected export performance amid deteriorating terms of trade, as well as a variety of idiosyncratic domestic constraints. In *Brazil*, GDP contracted in the first half of the year, reflecting weak investment and a moderation in consumption, given tighter financial conditions and continued weakness in business and consumer confidence. These factors, along with weakness in competitiveness, are projected to keep growth subdued in much of 2014–15. In *Mexico*, weaker-than-expected growth in early 2014, on account of weak external demand and construction activity, lowered projections for this year relative to the April 2014 WEO forecast, but growth is projected to pick up in 2015 and beyond, as the effects of structural reforms begin to come into play and U.S. growth strengthens. Elsewhere in the region, downward growth revisions reflect weaker domestic demand (Chile and Peru); deepening macroeconomic and policy imbalances that are manifesting themselves as high inflation, negative growth, and a rising differential between the parallel and official exchange rates in *Argentina*; and severe policy distortions that have led to widespread shortages, a collapse in growth, and inflation now exceeding 60 percent in *Venezuela*.
- The forecast for the *Commonwealth of Independent States* has significantly weakened, reflecting a sharp deterioration in economic conditions in the first half of the year, which is expected to persist for some time. In *Russia*, investment remains weak amid subdued confidence, which is further affected by geopolitical tensions and sanctions. Activity is not projected to pick up before 2015. Continued declines in industrial production and exports will cause a sharp contraction in activity in Ukraine in 2014, with conditions improving slowly next year. Growth in the rest of the CIS has already slowed, with weaker trade and remittance flows from Russia, and is projected to be lower in 2014–15 relative to the April 2014 WEO projections.
- Growth in *emerging and developing Europe* is projected to remain close to 3 percent in 2014–15, with an upward revision in projections by 0.4 percentage point for 2014. This revision primarily reflects strengthening private consumption in Hungary and robust domestic demand in Poland.
- With increased strife in some countries in the region, the projected pickup in growth in 2014 in the *Middle East, North Africa, Afghanistan, and Pakistan* region is now projected to be weaker relative to the April 2014 WEO forecast. Growth is expected to increase in 2015, assuming that security improves, allowing for a recovery in oil production, particularly in Libya. Economic activity in the oil importers is projected to improve only gradually as they continue to deal with difficult sociopolitical transitions, subdued confidence, and setbacks from regional conflicts.
- In *sub-Saharan Africa*, growth is projected to remain strong, broadly in line with the April 2014 WEO projections over the 2014–15 period, although prospects vary across countries. In *South Africa*, 2014 growth is being dragged down by industrial tensions and delays in fixing infrastructure gaps, including electricity constraints. A muted recovery is expected in 2015. In contrast, in *Nigeria*, activity has been resilient despite poor security conditions and a decline in oil production earlier this year. In a few countries, including Ghana and, until recently, Zambia, large macroeconomic imbalances have resulted in pressures on the exchange rate and inflation. Beyond the human toll it is exacting, the Ebola outbreak is set to have an acute impact on the economies of Guinea, Liberia, and Sierra Leone, as discussed in Chapter 2. Should the outbreak continue to intensify and spread significantly to neighboring countries, it could have more far-reaching consequences.
- These projections imply a robust outlook for low-income developing countries, with growth projected to exceed 6 percent in both 2014 and 2015. Stronger growth in advanced economies will buoy low-income developing countries' net external demand, although the projected easing in nonfuel commodity prices will induce some deterioration in the terms of

trade for the net exporters of commodities. Domestic demand is expected to remain resilient as in recent years.

Inflation outlook

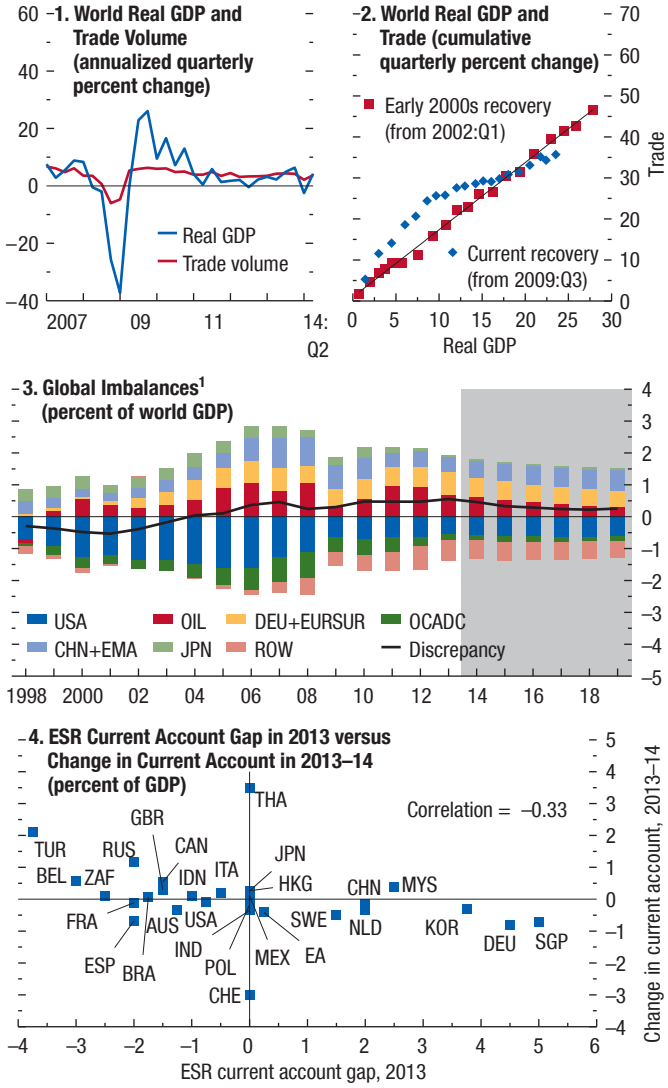
Inflation remains too low in advanced economies, an indication that many of these economies have substantial output gaps, and deflation continues to be a concern. In the United States, inflation measured with the personal consumption expenditure deflator is forecast to be 1.6 percent at the end of 2014 and to rise gradually toward the Federal Reserve's longer-term objective of 2 percent. In the euro area, inflation is projected to increase gradually as the recovery strengthens and output gaps slowly decrease, to 0.9 percent on an annual basis in 2015 and 1.2 percent in 2016. But price pressures are expected to remain very subdued under the current baseline projections, because persistent output gaps, weak credit conditions, and financial fragmentation—especially in stressed economies—will combine to contain prices. As a result, euro-area-wide inflation rates are expected to remain substantially below the ECB's price stability objective through at least 2019 with current policies, suggesting that the risk of inflation expectations becoming unanchored has increased. In Japan, headline inflation is projected to rise to an annual average rate of 2.7 percent in 2014. This rise reflects the consumption tax increase, but underlying inflation is rising as well, at 1.1 percent this year. Inflation is projected to increase gradually toward the 2 percent target in the medium term as the output gap closes and inflation expectations rise. In emerging market and developing economies, inflation is projected to decline in 2014, in line with the April 2014 WEO projections, and to remain broadly unchanged in 2015. The recent decline reflects to an important extent the softening of commodity prices—particularly those for food commodities, which have a high weight in the consumer price index baskets for these countries.

External sector and outlook for rebalancing

Global trade volume growth slowed markedly in the first half of 2014 compared with global activity (Figure 1.9, panel 1). Expectations that with a strengthening recovery, global trade would once again grow faster than GDP, based on developments in the second half of 2013, have not materialized (Figure 1.9, panel 2). Some of the slowdown in trade growth could

Figure 1.9. External Sector

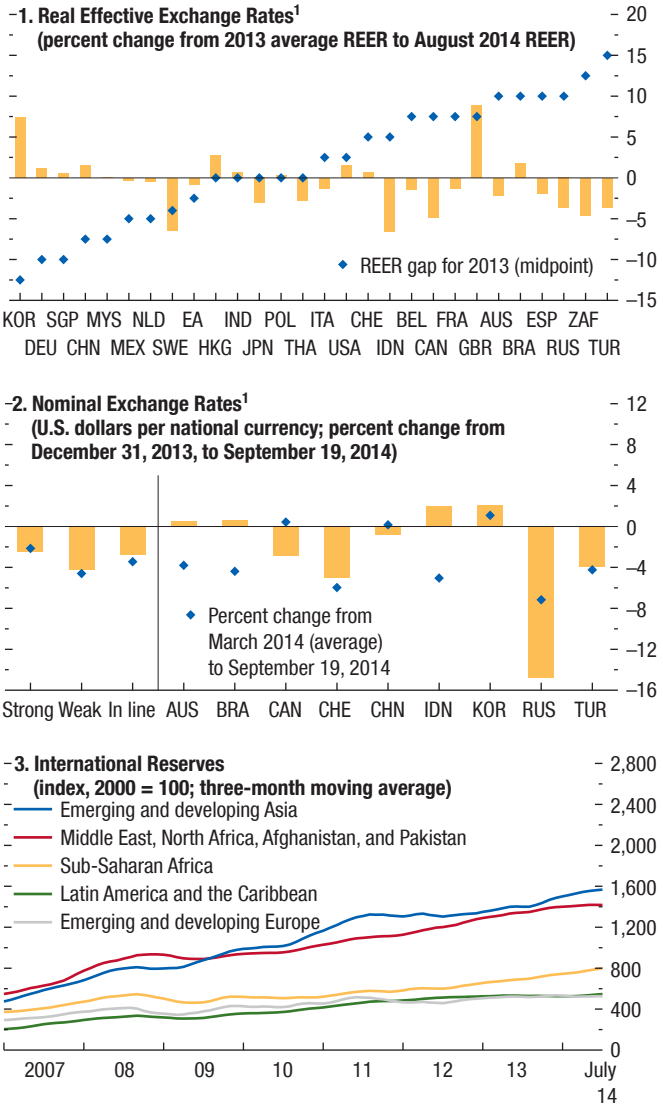
Global trade growth slowed again in the first half of 2014, consistent with weaker global growth during this period. But world trade has lacked its traditional strong momentum since the deceleration in global activity in 2011. Global current account imbalances have narrowed substantially since the global financial crisis in 2008 and are projected to narrow further. Among the larger economies, the projected change in current account balances in the near term is consistent with a further narrowing of excess surpluses and deficits (as measured by the current account gaps in 2013 identified in the IMF's *2014 Pilot External Sector Report*).



Sources: CPB Netherlands Bureau for Economic Policy Analysis; IMF, *2014 Pilot External Sector Report* (ESR); and IMF staff estimates.
Note: Data labels in the figure use International Organization for Standardization country codes.
[1]AE = advanced economies; CHN+EMA = China and emerging Asia (Hong Kong SAR, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, Thailand); DEU+EURSUR = Germany and other European advanced surplus economies (Austria, Denmark, Luxembourg, Netherlands, Sweden, Switzerland); EA = euro area; OCADC = other European precrisis current account deficit countries (Greece, Ireland, Italy, Portugal, Spain, United Kingdom, WEO group of emerging and developing Europe); OIL = Norway and WEO group of emerging market and developing economy fuel exporters; ROW = rest of the world.

Figure 1.10. Exchange Rates and Reserves

Currencies of major emerging market economies have depreciated against the U.S. dollar in 2014, reflecting financial market turmoil early in the year and relatively weaker medium-term prospects compared with advanced economies. More broadly, exchange rate movements during the past year have generally been consistent with further corrections in currency over- and undervaluation (as measured by the REER gaps identified in the IMF's *2014 Pilot External Sector Report*). The pace of reserve accumulation has slowed in Latin America and emerging and developing Europe, reflecting lower capital inflows and reserve losses from foreign exchange interventions. It has remained strong in the Middle East, reflecting still-high oil prices, and has accelerated recently in emerging and developing Asia.



Sources: Global Insight; IMF, *2014 Pilot External Sector Report;* IMF, International Financial Statistics database; and IMF staff calculations.
Note: Strong = relatively stronger economies; weak = relatively weaker economies; in line = broadly in-line economies; EA = euro area; REER = real effective exchange rate. Data labels in the figure use International Organization for Standardization country codes.
[1]REER gaps and classifications are based on the *2014 Pilot External Sector Report*.

reflect a more modest pace in the fragmentation of global production processes (value chains) after years of rapid change. Indeed, much of the recent slowing in trade growth relative to GDP is an emerging market phenomenon. And some of this slowdown could be cyclical, reflecting declining world growth since 2011. Indeed, in the early stages of the global recovery in 2009–10, global trade had picked up strongly, broadly in line with patterns in earlier periods of increasing global growth. Global trade is projected to pick up ahead of GDP as the global recovery strengthens, but the difference between trade and GDP growth is projected to remain below recent precrisis averages.

Global current account imbalances narrowed in 2013 and are projected to contract further, albeit modestly, in 2014 and beyond (Figure 1.9, panel 3). The contraction in 2014 is projected to come from a reduction in deficit and surplus positions within Europe, as well as from some contraction in surpluses in oil exporters. At the same time, as discussed in Chapter 4, legacy effects from the period of global imbalances and the global financial crisis persist, with countries that ran large current account deficits before the crisis still facing high gross and net external liabilities. Although many of these countries have achieved large current account corrections, weak or negative GDP growth and subdued inflation have prevented a systematic improvement in their net external positions. And the low projected growth rates for nominal and real GDP imply a very gradual improvement in debtor countries' net external positions going forward, even though current account balances in several cases are projected to remain in surplus.

The projected narrowing of global current account imbalances is generally consistent with a reduction in "excessive" imbalances, and exchange rate changes during the past year have been providing some support to the adjustment. As discussed in the *2014 Pilot External Sector Report* (IMF 2014a), external imbalances in 2013, although declining, remained almost twice as large as would be consistent with fundamentals and desirable policies. Figure 1.9 (panel 4) shows that projected changes in current account balances for 2014 relative to 2013 would go in the direction of narrowing the current account gaps for 2013 discussed in the *2014 Pilot External Sector Report*. These gaps measure deviations of current account balances from a level consistent with underlying fundamentals and desirable policies. And panel 1 of Figure 1.10 compares the 2013 currency assessments in the *2014 Pilot*

External Sector Report—which are based on average real effective exchange rates for that year—with subsequent changes in real effective exchange rates. Undervalued currencies (those with a negative real effective exchange rate gap in 2013) have generally appreciated and overvalued currencies depreciated, consistent with rebalancing.

Risks

Downside risks have increased compared with the spring. The main reason is the increase in *geopolitical risks*, including turmoil in the Middle East and international tensions surrounding the situation in Russia and Ukraine. Also, with the baseline now reflecting increased financial market optimism—risk spreads and major implied volatility indicators are close to precrisis expansion lows, equity prices have continued to rise, and longer-term yields have declined—downside risks from a *financial market correction* have increased.

As for the other risks discussed in the April 2014 WEO, those from unexpected bumps originating from *monetary policy normalization in the United States* remain. Inflation in the euro area has declined further, and inflation expectations have drifted downward, indicating that *risks of outright deflation or a protracted period of very low inflation* also remain. From a medium-term perspective, *low potential output growth* and *"secular stagnation"* are still important risks in advanced economies, given that robust demand growth has not yet emerged. In particular, despite continued very low interest rates and increased risk appetite in financial markets, a pickup in investment has not yet materialized, possibly reflecting concerns about low medium-term potential growth and subdued private consumption (in a context of weak growth in median incomes). For emerging markets, despite downward revisions to forecasts, the risk remains that the projected increase in growth next year will fail to materialize (at least in full) and that *potential growth is lower than currently projected*. And risks of a *hard landing in China* in the medium term owing to excess capacity and the credit overhang remain a concern, given that investment and credit continue to be the main drivers of growth.

Global GDP Forecast

The fan chart for the global real GDP forecast through 2015 suggests a broadly unchanged uncertainty band around the WEO projections relative to six months ago (Figure 1.11, panel 1). The probability of global growth falling below the 2 percent recession threshold in 2015 is less than 1 percent, which is appreciably lower for the next-year forecasts compared with values in October 2012 and October 2013. In regard to the components underlying uncertainty around the forecasts, downside risks to global growth due to oil prices have increased compared with the April 2014 WEO, and notably so for 2015. Downside risks related to an equity price correction in 2014 have also risen, consistent with the notion that some valuations could be frothy. In addition, prospects of rising U.S. term spreads in 2015 due to higher long-term rates are consistent with upside risks to global growth, based on the past predictive performance of term spreads.

Simulations using the IMF staff's Global Projection Model suggest an increase in recession risks (as measured by the probability of two consecutive quarters of negative growth in the four quarters ahead), particularly in the euro area and the Rest of the World group (Figure 1.12, panel 1). This increase partly reflects a lower starting point for growth compared to the April 2014 WEO. The results of these simulations underscore that a number of fragilities remain present in the global recovery.

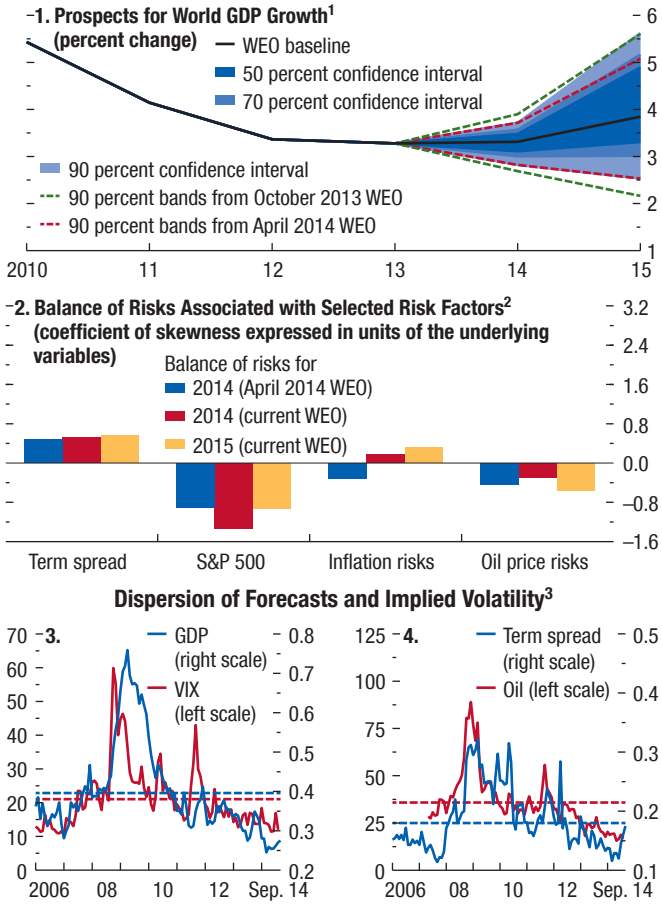
Immediate and Short-Term Risks

Risks to the fragile global recovery come from several sources: increased geopolitical tensions and their repercussions for commodity markets and real activity, shocks originating in financial markets, and macroeconomic disappointments in systemically important countries or regions. In all these cases, global trade and financial market interconnectedness can act to transmit and amplify shocks, with large cross-border spillovers.

With regard to *geopolitical risks,* the baseline incorporates a recession in Ukraine and stagnant output in Russia in 2014, with adverse spillovers to the CIS and, to a lesser extent, other trading partners. These effects are assumed to gradually wane in 2015 and thereafter. Larger global spillovers could result from further unrest triggering disruptions in the production or transportation of natural gas or crude oil, higher risk aversion in financial markets, a negative impact on confidence and business investment in trading partners caused by greater uncertainty, and disruption to trade and finance resulting from an escalation of sanctions and countersanctions. An additional important source of geopolitical

Figure 1.11. Risks to the Global Outlook

The fan chart, which indicates the degree of uncertainty about the global growth outlook, has remained broadly unchanged from that in the April 2014 WEO. Lower baseline uncertainty (given that there is more information about 2014 available now) should, in principle, have lowered the uncertainty band for 2014, all else equal; that it has not is suggestive of somewhat higher downside risks in the near term. Financial-market-based measures of volatility and measures of forecast dispersion suggest broadly unchanged uncertainty.



Sources: Bloomberg, L.P.; Chicago Board Options Exchange (CBOE); Consensus Economics; Haver Anaytics; and IMF staff estimates.

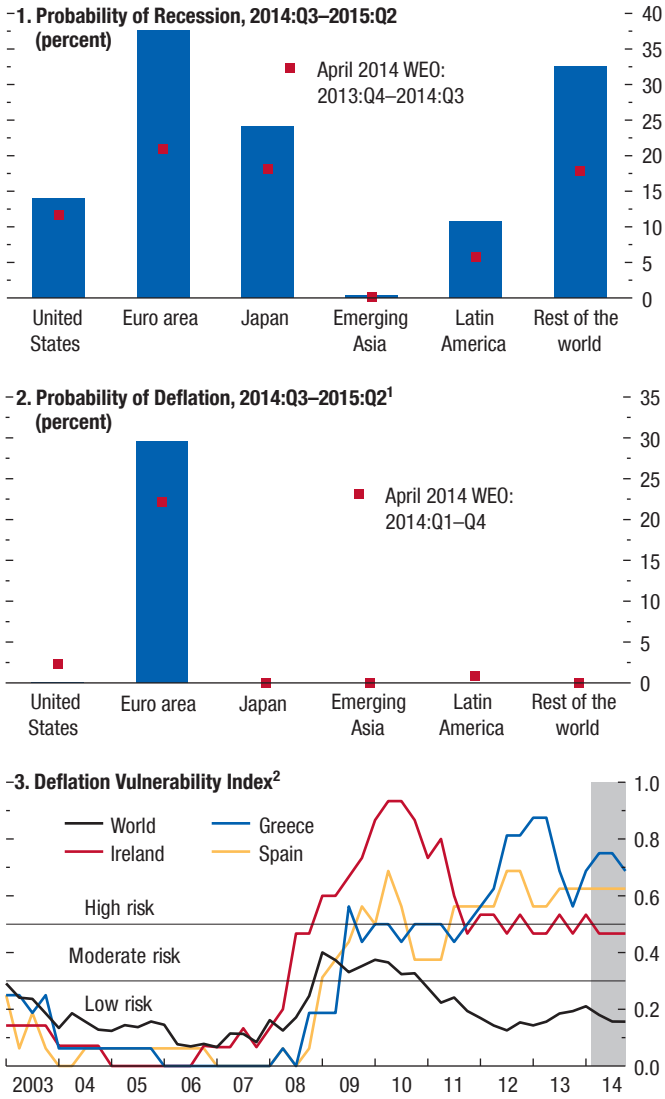
[1]The fan chart shows the uncertainty around the WEO central forecast with 50, 70, and 90 percent confidence intervals. As shown, the 70 percent confidence interval includes the 50 percent interval, and the 90 percent confidence interval includes the 50 and 70 percent intervals. See Appendix 1.2 of the April 2009 WEO for details. The 90 percent bands for the current-year and one-year-ahead forecasts from the October 2013 and April 2014 WEO reports are shown relative to the current baseline.

[2]Bars depict the coefficient of skewness expressed in units of the underlying variables. The values for inflation risks and oil price risks enter with the opposite sign since they represent downside risks to growth. Note that the risks associated with the Standard & Poor's (S&P) 500 for 2015 are based on options contracts for December 2015.

[3]GDP measures the purchasing-power-parity-weighted average dispersion of GDP growth forecasts for the G7 economies (Canada, France, Germany, Italy, Japan, United Kingdom, United States), Brazil, China, India, and Mexico. VIX is the CBOE S&P 500 Implied Volatility Index. Term spread measures the average dispersion of term spreads implicit in interest rate forecasts for Germany, Japan, the United Kingdom, and the United States. Oil is the CBOE crude oil volatility index. Forecasts are from Consensus Economics surveys. Dashed lines represent the average values from 2000 to the present.

Figure 1.12. Recession and Deflation Risks

The IMF staff's Global Projection Model suggests that one-year-ahead recession risks have increased compared with the April 2014 WEO in the euro area, Japan, Latin America, and the Rest of the World group. The increase is largely due to lower growth starting points, which imply that a smaller negative shock is more likely to trigger a recession, everything else equal. Deflation risks have increased for the euro area compared with the April 2014 WEO, again mostly on account of an even lower starting point for inflation given that euro area inflation declined to about ½ percent in the second quarter of 2014.



Source: IMF staff estimates.

Note: Emerging Asia = China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, Thailand; Latin America = Brazil, Chile, Colombia, Mexico, Peru; Rest of the world = Argentina, Australia, Bulgaria, Canada, Czech Republic, Denmark, Estonia, Israel, New Zealand, Norway, Russia, South Africa, Sweden, Switzerland, Turkey, United Kingdom, Venezuela.

[1]Deflation is defined as two consecutive quarters of falling consumer prices within a four-quarter window.

[2]For details on the construction of this indicator, see Kumar 2003 and Decressin and Laxton 2009. The indicator is expanded to include house prices.

risks is related to developments in the Middle East. The baseline incorporates severe negative effects of current strife on economic activity in 2014 for some countries in the region, particularly Iraq and Libya, which are assumed to unwind in 2015 and thereafter. Increased strife in the region could trigger disruptions to oil production and a sharp rise in oil prices. The potential global implications of such a turn of events, and possible amplification mechanisms through financial markets, are explored in "Risk Scenarios: Oil Price Spike."

With low interest rates and increased risk appetite in financial markets, equity prices have increased, spreads have compressed, and volatility has declined to very low levels. There are valid reasons for some financial market optimism: tail risks have decreased during the past two years, balance sheet repair has progressed, and central bank communication has been effective, all in a context in which low long-term interest rates would naturally boost asset prices. However, the increased risk appetite in financial markets has not translated into a pickup in investment, which—particularly in advanced economies—has remained subdued. And as discussed further in this chapter and in the October 2014 GFSR, there is a concern that markets are underpricing risk, not fully internalizing the uncertainties surrounding the macroeconomic outlook and their implications for the pace of withdrawal of monetary stimulus in some major advanced economies.

More specifically, financial markets can amplify *risks associated with faster-than-expected increases in U.S. interest rates*. As discussed in the *2014 Spillover Report* (IMF 2014b), previous WEO reports, and the Spillover Feature in Chapter 2, the nature of these risks and those of global spillovers will depend on the factors triggering the increases. Faster U.S. growth would raise external demand for partner countries and also contribute to higher confidence in a global recovery; on balance this would be a positive for the rest of the world, despite the tightening of global financial conditions. But risks remain of an increase in U.S. interest rates triggered by other factors, which could have more disruptive spillover effects. These factors could include an increase in the term premium on long-term U.S. Treasury bonds resulting from a portfolio shift or expectations of more rapid monetary policy tightening caused by a downward reassessment of the amount of slack in the U.S. economy. The increase in the term premium could in turn cause an increase in risk premiums and volatility in global financial markets and trigger a reversal of capital flows, particularly from vulnerable emerging markets. As noted in the October 2014 GFSR, some U.S. markets, such as those for credit and high-yield bonds, appear particularly susceptible to negative effects from faster-than-expected monetary policy normalization.

Growth disappointments, geopolitical events, or other triggers can also set off a *sudden reversal of risk premiums and volatility compression in global financial markets*. An increase in global risk aversion can trigger safe haven flows and thus be associated with a decline in U.S. long-term interest rates (in contrast to the scenarios described in the previous paragraph) but still imply a significant tightening of financial conditions, capital flow reversals, and exchange rate pressures in emerging markets, as well as negative effects on equity prices. The October 2014 GFSR develops a scenario in which a rapid market adjustment causes term bond market and credit risk premiums to revert to historical norms. An adverse feedback loop between outflows and asset performance in the asset management sector could exacerbate the move from low to high volatility, with negative implications for many credit and emerging market assets. Such a shock could cause large losses in global bond portfolios, which could precipitate rapid portfolio adjustments and significant market turmoil, with potentially global implications for financial and macroeconomic stability.

In some advanced economies, *protracted low inflation or outright deflation poses risks to activity*—particularly where the legacies of the crisis include high public or private debt or both. Current inflation remains below target—and close to zero in some cases—in many advanced economies and is projected to increase only slowly. The risk is that a protracted "undershooting" of the inflation target would cause a decline in longer-term inflation expectations. With monetary policy rates in many cases close to or at the zero bound, the room to lower rates is limited. Higher real rates would hamper the recovery, including by exacerbating debt overhang problems.[2] In most economies, the risk of deflation by the end of 2014 is negligible, according to the Global Projection Model simulations, but the risk of inflation remaining persistently below central bank targets remains high. The risk of outright deflation remains a concern for the euro area, where inflation has declined further in recent months, and to a

[2]Box 1.1 of the October 2014 *Fiscal Monitor* discusses the implications of low inflation for public debt dynamics in the euro area.

Risk scenarios: Oil price spike

Geopolitical risks are again a key concern in regard to oil prices. In the case of Iraq, an escalation in the internal conflict could lead to disruptions in the country's (as well as global) oil production. This possibility could lead to adverse global spillovers to other economies through higher oil prices, lower risk appetite in global financial markets, and lower confidence more broadly. This analysis considers these two spillover mechanisms in two scenarios. In both, the oil price is assumed to spike by some 20 percent on average in the first year in response to unexpected global oil supply disruptions caused by temporarily lower production in Iraq (Figure 1.13). Oil prices return to baseline after three years.

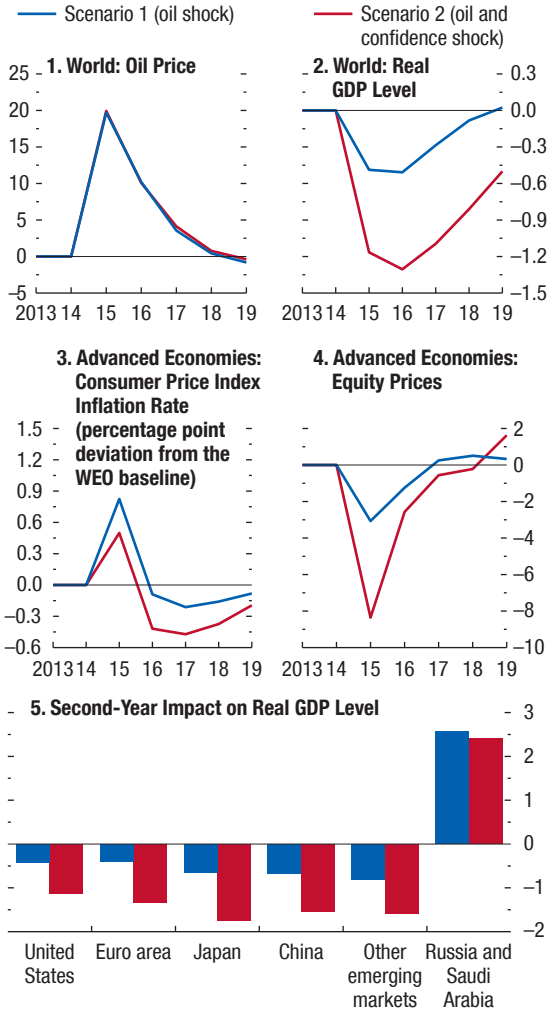
In the first scenario, only oil prices spike. As a result, real incomes decline because higher production costs lower profits in net oil importers, where domestic demand falls sharply. Domestic demand in oil exporters increases with the terms-of-trade gains, but not enough to offset the negative impact on oil importers. As a result, world GDP declines by about ½ percent in the year the shock materializes. The magnitudes of the output declines across regions depend on the share of oil imports in costs and household spending, as well as on constraints on monetary policy responses (blue bars in Figure 1.13, panel 5). Japan is most affected on both accounts—its economy is at the zero lower bound—and the effects on net oil importers among emerging markets are large because of their relatively higher oil dependency.

In the second scenario, the oil price spike is also assumed to lower confidence among consumers, firms, and investors. The assumption is that in the year the shock hits, equity prices decline in advanced economies by 3 percent, on average, and in emerging market economies by 7 percent. Subsequently, as in the first scenario, world equity prices fall further on lower profits and growth in net oil importers. As oil prices start falling, risk appetite and confidence begin normalizing. Still, the adverse effects on domestic demand and output in net oil importers are in almost all cases more than twice as high as under the first scenario (red bars in Figure 1.13, panel 5), reflecting additional negative wealth effects and higher costs of capital in these economies. World GDP declines by about 1½ percent.

Figure 1.13. Iraq Oil Shock

(Percent deviation from the WEO baseline, unless indicated otherwise)

The IMF's G20 Model (G20MOD) is used here to explore the macroeconomic impact of a potential significant global oil supply disruption due to conflict escalation in Iraq. In the first scenario (blue lines and bars), the rise in oil prices is the only drag on the global economy, whereas in the second (red lines and bars), the disruption also undermines confidence. Iraq's oil exports drop by 50 percent from the current level (roughly 1½ percent of current global oil consumption), with only half of the decline offset by higher oil production from current spare capacity. This leads to an oil price spike of 20 percent, partly on account of sharply higher precautionary demand for oil inventories. The oil price starts falling after the first year, but only gradually, largely because the supply disruption is assumed to take longer to unwind than expected initially.



Source: IMF, G20MOD simulations.

lesser extent for Japan (given that underlying inflation remains well below the 2 percent target). In the euro area, the risk of deflation—as measured by the probability of two consecutive quarters of negative inflation within a four-quarter forecast window—is estimated to be about 30 percent (Figure 1.12, panel 2). Similarly, broad indicators of deflation vulnerability, which measure the risk of more persistent price-level declines, remain above the high-risk threshold for some euro area economies, reflecting even lower-than-expected inflation in recent months (Figure 1.12, panel 3).

There are also *near-term growth risks in China.* These risks are mainly associated with the likelihood of a more severe real estate market correction than envisaged in the baseline. Real estate investment has been an important engine of growth in China, and it will be challenging to allow the imbalances in the market—including signs of overvaluation in large cities and oversupply in many smaller cities—to correct while preventing an excessively sharp slowdown. Financial sector links would amplify the impact of this correction, given the direct exposure of banks and shadow banks to real estate through credit to developers and household mortgages, and also indirectly, through the use of real estate as collateral for other loans. Furthermore, local government spending relies on the real estate sector directly, through land sales revenue, and indirectly, through the tax revenue generated by the sector. Although policy action—for example, through additional infrastructure investment—could help mitigate the immediate impact of the shock, such action would complicate the challenge of rebalancing demand away from investment toward consumption.

Medium-Term Risks

The pattern of downward revisions to growth forecasts documented in Box 1.2 and the repeated markdowns of estimates of medium-term potential growth highlight the uncertainties surrounding the resilience of the global economy in the medium term. Accordingly, this WEO report focuses on risks that demand and potential growth might fall short of expectations, a theme also developed in previous reports.[3]

Low potential growth in advanced economies: Increasing evidence suggests that potential growth in advanced economies had started to decline before the crisis, and total factor productivity has been increasing at modest rates across all major advanced economies.[4] And the impact of a more modest rate of growth in total factor productivity would be compounded by slower growth or an outright decline in labor input in light of population aging. In addition to these longer-term trends, a protracted period of weak growth and large negative output gaps could erode the growth potential of stagnating economies. The channels through which this erosion would operate include lower investment, including in research and development, affecting the capital stock and total factor productivity, as well as erosion of skills and lower labor supply as a result of hysteresis in unemployment. Low actual and potential growth would also further complicate the challenge of reducing high public and private debt.

Secular stagnation in advanced economies: In addition to the implications of weaker potential growth, the major advanced economies, especially the euro area and Japan, could face an extended period of low growth reflecting persistently weak private demand that could turn into stagnation. In such a situation, some affected economies would not be able to generate the demand needed to restore full employment through regular self-correcting forces. The equilibrium real interest rate on safe assets consistent with full employment might be too low to be achieved with the zero lower bound on nominal interest rates. As discussed in Chapter 3 of the April 2014 WEO, real interest rates on safe assets are likely to rise under the WEO baseline but remain below the average value of about 2 percent recorded in the mid-2000s before the crisis. However, the further declines in nominal and real interest rates on long-term "safe" government bonds during the past few months—despite expectations of a strengthening recovery—underscore the fact that stagnation risks cannot be taken lightly. The risk scenario discussed below illustrates how stagnation in advanced economies could itself amplify declines in potential growth, generating protracted negative effects on GDP for the world economy as a whole.

Lower potential growth in emerging market economies: As discussed in Box 1.2 and in Chapter 3 of the *2014 Spillover Report* (IMF 2014b), growth forecasts for emerging markets have been reduced

[3]Among other medium-term risks, the April 2013 WEO presents a scenario featuring rising concerns about fiscal sustainability in the euro area, Japan, and the United States.

[4]On the United States see, for example, Fernald 2014, Gordon 2014, and Hall 2014.

Risk scenario: Secular stagnation and low potential output in advanced economies

Secular stagnation in advanced economies remains a concern. Robust demand momentum has not yet emerged despite continued very low interest rates and easing of brakes to the recovery, including from fiscal consolidation or tight financial conditions. The following scenario explores the global economic implications of protracted demand weakness in advanced economies, reflecting a sequence of unexpected negative shocks to private investment and higher private saving in the major economies. These developments could be triggered by continued low confidence, limited appetite for real risks, and debt overhang after the crisis. In turn, the decline in growth resulting from weaker domestic demand is assumed to reduce advanced economies' potential output. Specifically, lower investment results in reduced productivity growth. Higher unemployment leads to skill depreciation in the labor force and a higher natural rate of unemployment. The size of the labor force also declines, because discouraged workers exit the labor market.

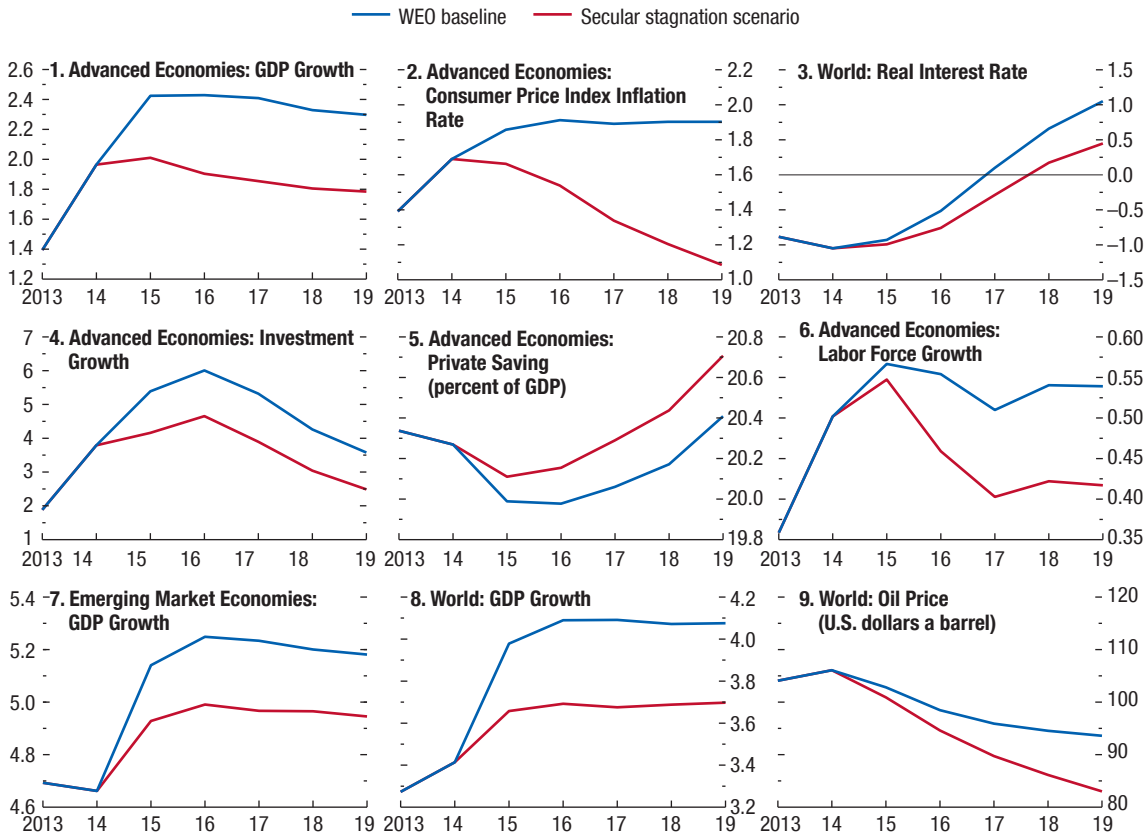
These (relatively small) demand shortfalls in advanced economies, together with the erosion of potential output, unemployment, and the labor force decreases as discouraged workers withdraw from the labor force. Overall, the labor supply decreases by roughly 0.1 percent a year in advanced economies.

As a result, growth in advanced economies is roughly 0.5 percentage point below the WEO baseline, while inflation is about 0.8 percentage point lower after five years. Slower advanced economy growth has significant spillovers to emerging market economies, both directly, through lower external demand, and indirectly, because equity markets in emerging market economies are assumed to reflect some of the weakness in advanced economy equity markets. Global growth is roughly 0.4 percentage point below the WEO baseline.

Figure 1.14. Secular Stagnation

(Percent, unless indicated otherwise)

The IMF's G20 Model (G20MOD) is used here to explore a plausible alternative baseline with secular stagnation in advanced economies. The sources of stagnation are lower-than-expected private investment and higher-than-expected private saving, which lead to weaker domestic demand in advanced economies. Investment growth slows by just under 0.5 percentage point a year in the euro area and Japan; it slows by more than 1 percentage point a year in the United States and other advanced economies. Private saving as a share of GDP rises by about 0.2 percentage point a year in advanced economies. Weaker demand conditions in turn have negative spillovers to these economies' potential output. Given capital-embodied technology, lower investment results in slowing productivity growth. In addition, higher unemployment results in skill erosion that raises the natural rate of



Sources: IMF, G20MOD simulations; and IMF staff estimates.

Risk scenario: Secular stagnation and low potential output in advanced economies *(continued)*

could lead to sustained global economic weakness over a five-year period (Figure 1.14). Specifically, in advanced economies, investment growth is between 0.8 and 1 percentage point lower than under the baseline, whereas private saving ratios are 0.5 percentage point higher. On average, growth in advanced economies is roughly 0.4 percentage point lower and inflation about 0.8 percentage point lower after five years. Despite the fall in potential output, output gaps still widen initially with lower growth. And subsequently, these gaps narrow only slowly. Because demand weakness is unexpected, monetary policy in advanced economies ends up being too tight in hindsight, with real interest rates not falling enough. Relative to the baseline, the normalization of advanced economy interest rates is more gradual, and the global real interest rate declines.

The lower growth in advanced economies has significant spillovers to emerging market economies, both directly, through lower external demand, and indirectly, through negative productivity spillovers. Equity markets in emerging market economies thus reflect some of the weakness in advanced economy equity markets. Relative to the WEO baseline, emerging market growth is about 0.2 percentage point lower on average and global growth roughly 0.3 percentage point lower, with oil prices falling by roughly 10 percent over five years.

repeatedly in WEO reports since 2010—including in this one. At the same time, current forecasts still envisage a meaningful and durable pickup in growth in emerging markets in 2015. There is a risk that such a rebound may fail to materialize, reflecting lack of action on structural constraints leading to lower potential growth, a tightening of global financial conditions, a slow pace of recovery in advanced economies, or any combination of these factors. Structural constraints, as well as the external factors mentioned previously, may also hamper the pace of growth in low-income countries, which so far have been performing very well.

Hard landing in China: In addition to the general risk of actual and potential growth falling short of current estimates, an additional risk to global growth comes from the possibility of a hard landing in China, as also discussed in previous WEO reports. Without a change in the pattern of growth that relies on credit and investment, vulnerabilities will continue to rise. Cross-country evidence suggests that credit booms of a similar size have often led to sharp corrections. However, in China's case, the government still has the capacity to absorb and respond to the types of shocks that triggered crises elsewhere: a run on deposits, a collapse of the real estate market, or capital flight. At the same time, the repeated use of credit-financed stimulus to investment in response to shortfalls in growth reduces the available policy space and risks amplifying underlying vulnerabilities. Absent a rebalancing of growth, the risk of a shock causing financial disruption or a sharp slowdown will rise further—with large potential cross-border repercussions, given the size and openness of the Chinese economy.

Policies

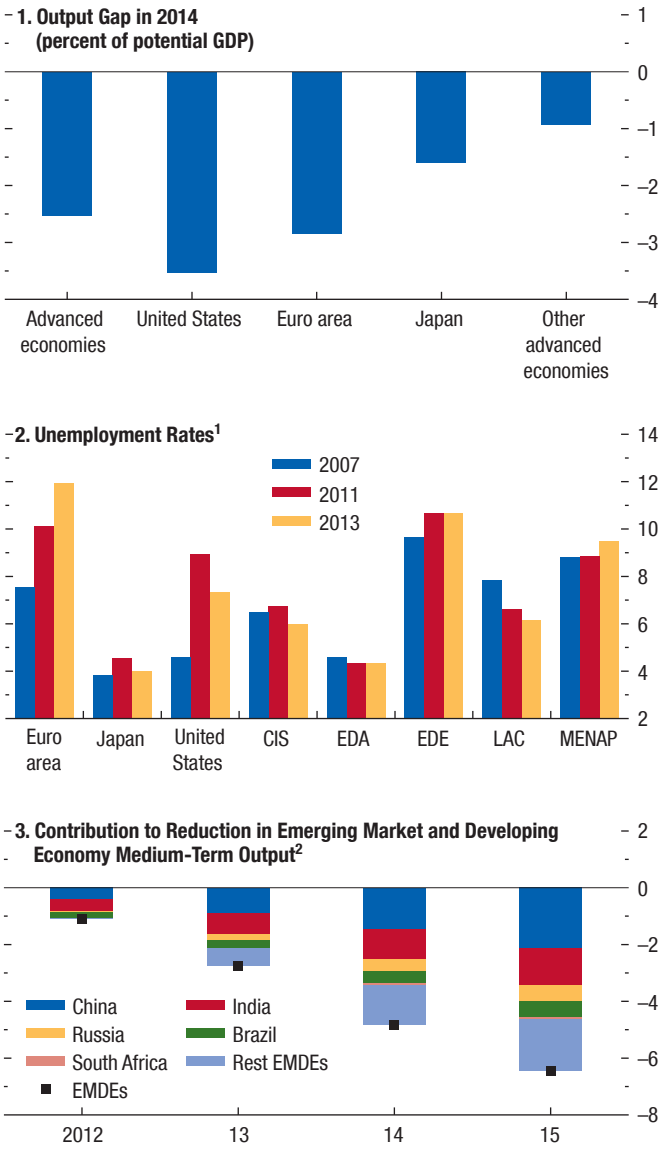
The global recovery remains fragile and uneven. The brakes placed on the recovery by high public and private debt in advanced economies are coming off, but at different rates across countries, and unemployment rates and output gaps are still high in some cases (Figure 1.15). Stagnation risks and low potential growth in these economies remain important medium-term concerns. These factors point to the need for action on two fronts: continued support to domestic demand and the adoption of policies and reforms that can boost supply. Emerging markets continue to underpin world growth but are slowing down from precrisis growth rates. They need to address underlying structural problems and take on structural reforms—policy challenges that are quite heterogeneous across countries. At the same time, they must deal with the implications of monetary policy normalization in the United States and possible shifts in financial market sentiment more generally. Implementation of these policies would underpin stronger and more balanced growth and help achieve a further narrowing of global external imbalances.

Fighting Low Inflation and Sustaining the Recovery in Advanced Economies

Across advanced economies, output gaps generally remain large and are projected to close only gradually, inflation is low, and dealing with high public debt requires fiscal consolidation to continue, as discussed in the October 2014 *Fiscal Monitor*. Thus, maintaining an accommodative monetary policy stance to support

Figure 1.15. Capacity, Unemployment, and Output Trends
(Percent, unless indicated otherwise)

The global recovery remains uneven. In advanced economies, the brakes placed on growth by high public and private debt are coming off, but at different rates across countries, and unemployment levels and output gaps are still high in some cases. Medium-term growth prospects have also been revised downward in many economies, particularly among major emerging markets, compared to the projections made in the fall 2011 WEO.



Source: IMF staff estimates.
Note: CIS = Commonwealth of Independent States; EDA = emerging and developing Asia; EDE = emerging and developing Europe; EMDEs = emerging market and developing economies; LAC = Latin America and the Caribbean; MENAP = Middle East, North Africa, Afghanistan, and Pakistan.
[1]Sub-Saharan Africa is omitted because of data limitations.
[2]Relative to the September 2011 WEO.

the recovery is essential. Within these broad contours, however, challenges increasingly differ across countries.

- The recovery in the euro area remains weak and uneven, unemployment rates far exceed their equilibrium value in most countries, and euro-area-wide inflation is too low, pointing to pervasive weakness in domestic demand. This requires policy actions to support activity. On the monetary policy front, recent measures taken by the ECB—lower policy rates, and the announcement of cheap term funding for banks and a program of private asset purchases—are welcome. But if the inflation outlook does not improve and inflation expectations continue to drift downward, the ECB should be willing to do more, including purchases of sovereign assets. Nevertheless, reducing fragmentation in stressed economies and ensuring that inflation rises back toward the price stability objective requires action beyond monetary policy. The review of banks' asset quality that is currently underway is critical to reestablishing confidence in banks and improving intermediation. And looking beyond the demand constraints, structural measures must be taken to increase very low potential growth rates—as discussed further in the next subsection. On the fiscal policy front, the pace of fiscal consolidation has slowed and the overall fiscal stance for 2014–15 is only slightly contractionary. This strikes a better balance between demand support and debt reduction. Germany, which has completed its fiscal consolidation, could afford to finance much-needed public investment in infrastructure (primarily for maintenance and modernization), without violating fiscal rules. Large negative growth surprises in euro area countries should not trigger additional consolidation efforts, which would be self-defeating. Moreover, if deflation risks materialize and monetary policy options are depleted, the escape clauses in the fiscal framework may need to be used to respond.
- In Japan, aggressive monetary policy easing—the first arrow of Abenomics—has helped lift inflation and inflation expectations, and actual and expected inflation are progressing toward the 2 percent target. Communication by the Bank of Japan has been effective, but more could be done to help anchor expectations, including clarifying the indicators used to assess whether inflation is on track. This effort would also help guide expectations when a need arises to adjust the asset purchase program and facilitate preparations for eventual exit. Should actual or expected inflation stall or growth disap-

point, further action by the Bank of Japan would be warranted—but it would be essential that such action be accompanied by complementary growth-enhancing reforms, partly because of potential risks to financial stability. On the fiscal front, given very high public debt, implementation of the second consumption tax increase is critical to establish a track record of fiscal discipline but is likely to take a toll on domestic demand, underscoring the importance of a pickup in confidence and investment.

- In the United States, with growth expected to increase above trend in the remainder of 2014 and 2015, the main policy issue is the appropriate speed of monetary policy normalization. Under the IMF staff's baseline projection, the current plans—namely, ending asset purchases later this year and gradually increasing the policy rate starting in mid-2015—are appropriate, given the still-sizable output gap and subdued inflation. But the timing of the increase in the policy rate may have to be adjusted based on developments on the inflation and unemployment fronts. Two factors complicate efforts to assess the amount of slack in the economy: it is difficult to determine how much of the decline in labor force participation is cyclical, and uncertainty exists about the equilibrium rate of unemployment. With the labor market strengthening more rapidly than forecast and inflation, although low, beginning to rise, risks of persistently low inflation have decreased, and the likelihood is arguably higher that policy interest rates could rise faster relative to the WEO baseline on account of reduced slack. In this context, an effective communications strategy is essential to prevent disruptive market responses and anchor market expectations. On the fiscal policy front, the priorities should be avoiding short-term fiscal accidents caused by political brinkmanship and adopting a more growth-friendly approach to fiscal consolidation, including through front-loaded infrastructure spending, while reaching political agreement on a credible and detailed medium-term fiscal consolidation path.
- The recovery in other advanced economies is becoming stronger, with buoyant house prices posing policy challenges in some of them (Box 1.1). In the United Kingdom, for example, macroprudential tools have been deployed to contain financial stability risks. Tighter monetary conditions could also be considered if macroprudential tools prove ineffective at addressing financial stability concerns, but careful consideration would need to be given to the trade-off between damage to the real economy and the ultimate costs of financial vulnerabilities.

The role of public investment

As discussed in Chapter 3, for economies with clearly identified infrastructure needs and efficient public investment processes, and where there is economic slack and monetary accommodation, there is a strong case for increasing public infrastructure investment. The increased public investment would provide a much-needed boost to demand in the short term and would also help raise potential output in the long term. Moreover, evidence from advanced economies suggests that an increase in public investment that is debt financed would have larger output effects than an increase that is budget neutral, with both options delivering similar declines in the debt-to-GDP ratio.

Financial stability and macroprudential policy

Although sizable output gaps in advanced economies remain, the possibility of a buildup in financial sector risks in a protracted low-interest-rate environment continues to make close monitoring necessary, as elaborated in the October 2014 GFSR. For instance, a number of smaller advanced economies are experiencing credit booms, and in certain segments of U.S. financial markets, risks appear to be underpriced. Authorities should remain vigilant, strengthen regulation and supervision of the shadow banking system, and be ready to deploy macroprudential tools as a first line of defense should such a threat become more salient. As discussed in the GFSR, strengthening macroprudential tools may require changes to the regulatory and legal structure.[5]

Boosting medium-term growth and reducing risks of stagnation

In the euro area, more growth-enhancing structural reforms are necessary to tackle high unemployment, increase competitiveness in stressed economies, and facilitate rebalancing. To reduce youth unemployment, country-specific measures such as cost-effective active labor market policies, measures to lower the opportunity cost of employment, and better-targeted training programs can also help. Higher infrastructure investment in creditor countries would help boost domestic

[5]The April 2014 *Regional Economic Outlook: Asia and Pacific* discusses roles and limitations of micro- and macroprudential tools in the Asian context.

demand in the short term, thereby helping reduce excessive surpluses and boosting potential output down the road. In debtor countries, competitiveness-enhancing reforms to product and labor markets would help boost export growth, sustaining external adjustment even as the recovery takes hold and import compression unwinds.[6] There should be continued efforts to implement the European Union Services Directive, make progress with free trade agreements, and more closely integrate energy platforms and policies.

In Japan, more forceful structural reforms (the third arrow of Abenomics) are needed to boost potential growth and move decisively away from deflation. In particular, increasing the labor supply is of the essence, given unfavorable demographic trends, but it is also important to reduce labor market duality, enhance risk capital provision to boost investment, and raise productivity through agricultural and services sector deregulation. The task of boosting growth is also critical in light of the challenges posed by high public debt and the need for sizable fiscal consolidation—for which a concrete medium-term plan beyond 2015 is urgently needed.

In the United States, potential growth is higher than in most other large advanced economies, thanks to a growing labor force. However, both labor supply and total factor productivity have been growing at rates well below historical trends, and investment in relation to GDP remains well below precrisis levels. Steps should be taken to raise productivity, encourage innovation, augment human and physical capital, and increase labor force participation. Such measures should involve investment in infrastructure as well as education. With a decline in labor force participation and still-elevated long-term unemployment, scope also remains for strengthening active labor market policies, which in the past have been much less prevalent in the United States than elsewhere in the advanced world.

Adapting to a Changing Environment in Emerging Market and Developing Economies

Emerging markets' efforts to rebalance growth toward domestic sources in recent years have supported world growth and facilitated a sizable unwinding of global current account imbalances. But in a number of countries this rebalancing, in a context in which growth has been below expectations for the past few years, has also increased some vulnerabilities and reduced policy space, with inflation above target, or weaker fiscal positions relative to the precrisis period, or both. Reducing these vulnerabilities has become more important in light of changes to the world environment. On the one hand, the recovery in advanced economies suggests that demand for emerging market exports will increase. On the other hand, the ensuing normalization of monetary policy—particularly in the United States—would indicate that some of the capital flows that went to emerging markets in search of higher returns may well reverse direction. Such a reversal, in turn, implies tighter financial conditions and a financial environment in which foreign investors are less forgiving and macroeconomic weaknesses are more costly. And financial bumps, such as those of May–June 2013, may well happen again—particularly after a renewed period of benign global financial conditions, with declining spreads and low volatility.

In this environment, to reduce vulnerabilities, the macroeconomic policy stance should be consistent with the extent of economic slack, within a credible macroeconomic framework. The April 2014 WEO discusses the management of capital flow risks in emerging market and developing economies. In general, these countries should continue to manage external financial shocks with exchange rate flexibility, complemented with other measures, such as foreign exchange intervention to limit excessive market volatility.

During the past year, some countries have successfully lowered their vulnerabilities to adverse shocks by adopting tighter macroeconomic policies to reduce inflation and narrow external current account deficits (India, Indonesia). Vulnerabilities in some countries relate to rapid domestic credit expansion. With the external environment becoming less supportive, greater attention to monitoring the financial sector as well as exposures of nonfinancial firms, particularly in foreign exchange, and to enforcing prudential regulation and supervision and macroprudential measures to alleviate these risks, is needed. In other economies, higher external borrowing has increased exposure to external funding risks, and raising domestic saving rates, including through stronger public finances, should be a priority (Brazil, Turkey).

In China, rebalancing toward domestic demand has been characterized by booming investment and credit, with credit intermediation occurring not only through banks, but also through local government platforms and the shadow banking sector, regulation and supervision of which are weaker. To address the attendant

[6]Structural labor reforms may entail nonnegligible fiscal costs, as discussed in Chapter 2 of the October 2014 *Fiscal Monitor*.

risks, policies need to be carefully calibrated to help the economy make the transition to more consumption-led growth—with slower investment and real estate activity—while buttressing financial sector stability. In this light, it is crucial to implement key elements of the authorities' structural reform that aim to strengthen the regulation and supervision of the financial sector, reduce implicit guarantees, liberalize the deposit rate, and use interest rates instead of quantitative targets for the implementation of monetary policy, thus encouraging market-based pricing of risks. Further expansion of the social safety net, by reducing the current high rate of social security contribution, and better health care benefits would help reduce household saving rates and raise domestic consumption. This domestic rebalancing strategy, together with further exchange rate flexibility, would also contribute to global rebalancing.

Several years of slowing growth prospects (Box 1.2) suggest that it is also time for major emerging market economies to turn to important structural reforms to raise growth more robustly. The agenda, naturally diverse across countries, includes removing infrastructure bottlenecks in the power sector (India, South Africa); easing limits on trade and investment and improving business conditions (Indonesia, Russia); and implementing reforms to education, labor, and product markets to raise competitiveness and productivity (Brazil, China, India, South Africa) and government services delivery (South Africa). The policies being implemented in Mexico—particularly in opening the energy and telecommunications sectors to competition, as well as labor market reforms—are welcome steps for attracting investment and raising employment and potential growth. The postelection recovery of confidence in India also provides an opportunity for that country to embark on its much-needed structural reforms.

Challenges for Low-Income Countries

Growth rates for many low-income countries have been high for a number of years, supported by better macroeconomic policies, more favorable business and investment regimes leveraging increased interest from foreign investors, and in a number of cases strong terms of trade. But vulnerabilities remain. Overall, low-income countries' progress in achieving the Millennium Development Goals has been uneven and slow. For a few of these countries, the recent widening of fiscal deficits and higher debt levels reflect a shift in public spending away from essential investment—social priorities and infrastructure—toward higher current spending. With increased access to nonofficial foreign finance, nonresidents are holding larger amounts of both foreign-currency and local-currency debt, making some countries—particularly those with domestic policy weaknesses—vulnerable to shifts in market sentiment and reversal of capital flows. The projected decline in many commodity prices would strain budget revenues and foreign exchange earnings in a number of countries, and more modest growth prospects in emerging markets, together with low growth in advanced economies, may challenge the ability of low-income countries to sustain strong growth.

In this context, and with growth still vigorous, strengthening policies and reducing vulnerability to external shocks is paramount. This would mean, for many of these countries, boosting fiscal positions with stronger revenues (including by increasing the revenue base), as well as limiting current public spending and rationalizing it toward more social and education spending. Structural policy challenges include strengthening fiscal frameworks to foster medium-term planning and preserve debt sustainability, as well as deepening structural transformation and diversification. Building greater monetary policy independence and strengthening the monetary policy framework and credibility would also allow exchange rates to become more flexible to adjust to external shocks and limit their potential adverse effects on the economy.

Special Feature: Commodity Market Developments and Forecasts, with a Focus on Natural Gas in the World Economy

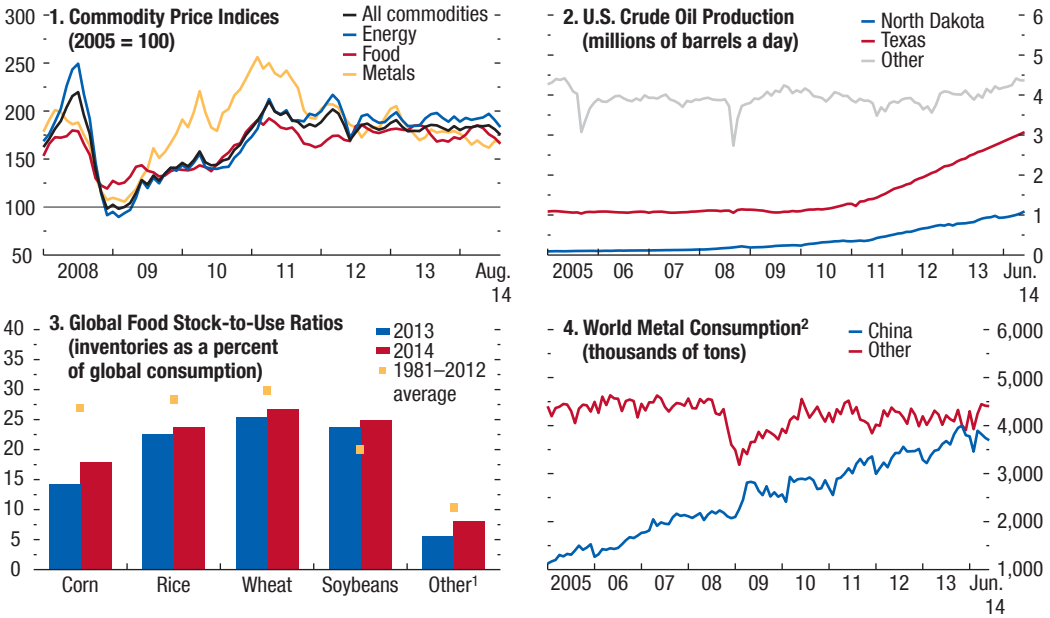
Commodity prices have edged lower since the release of the April 2014 World Economic Outlook *(WEO), led by a drop in food prices on improved supply prospects. Oil prices have recently fallen on weak demand and ample supply. Metal prices have ticked up on reduced inventories for some metals. With geopolitical tensions, risks to oil prices are on the upside. Weather-related risks to food supplies have moderated.*

Commodity prices have edged lower in recent months (Figure 1.SF.1, panel 1). The decline has been led by a 9 percent drop in food prices, owing mostly to improved supply prospects. Crude oil prices have recently declined, despite geopolitical supply concerns, and are well below the average price of about $104 a barrel prevailing since the beginning of 2011. Natural gas prices, on the other hand, have declined in all major markets because of weak demand and ample supply (see the section "Natural Gas in the World Economy"). Coal prices have also slumped on significant oversupply. Metal prices have unexpectedly risen 2 percent but are projected to decline.

Turning to oil markets, crude oil supply disruptions reached a total of more than 3 million barrels a day (mbd) during the past year, with the largest outages in Iraq, Libya, and Syria, in addition to the disruptions generated by sanctions against the Islamic Republic of Iran. Other disruptions have arisen from geopolitical (for example, South Sudan) and technical (for example, Canada and the North Sea) factors. Despite these disruptions, oil prices have edged lower, reflecting offsets from strong supply growth in countries outside the Organization of the Petroleum Exporting Countries (OPEC) (mainly from U.S. shale oil deposits), continued high production in some OPEC producers, and the potential backstop from relatively high OPEC spare capacity. Increases in non-OPEC supply are expected to exceed the moderate growth in world oil demand in 2014 and 2015. There are downside risks to prices should global growth disappoint, as discussed

The authors of this feature are Rabah Arezki (team leader), Prakash Loungani, Akito Matsumoto, Marina Rousset, and Shane Streifel, with contributions from Thiemo Fetzer (visiting scholar) and research assistance from Daniel Rivera Greenwood.

Figure 1.SF.1. Commodity Market Developments



Sources: IMF, Primary Commodity Price System; International Energy Agency; U.S. Department of Agriculture; World Bureau of Metal Statistics; and IMF staff calculations.
[1]Includes barley, millet, palm kernel, rapeseed, rye, sorghum, and sunflower seed.
[2]Metal consumption is the total of aluminum, copper, lead, nickel, tin, and zinc.

elsewhere in this WEO report. But there are also risks of further disruptions from geopolitical issues in a number of oil-producing regions.

Oil production increases in North America (Figure 1.SF.1, panel 2)—particularly in light tight oil from shale deposits—have affected global oil trade flows. With increased domestic production, U.S. net oil imports have dropped from 12.5 mbd in 2005 to 5.5 mbd to date in 2014. Light crude oil imports from west Africa and elsewhere have been most affected and have been redirected to other destinations. The United States has also increased oil product exports, taking advantage of low-priced domestic crude oil and further benefiting the country's net trade position.

Food prices have declined 9 percent since March 2014 on an improved global production outlook. However, prices of a few food commodities have moved higher. Meat prices have surged as a result of a porcine epidemic virus that has significantly increased piglet mortality in the United States, and prices of arabica coffee beans have soared because of a severe drought in Brazil. Weather conditions have been favorable so far in the current harvest year, and bumper harvests are expected for the main cereal and oilseed crops. Although global stocks are expected to increase (Figure 1.SF.1, panel 3), they will still remain below historical averages for most major crops, except soybeans. The likelihood of an El Niño event materializing in the fall of 2014 has been downgraded to 50 percent. El Niño weather conditions would likely have a negative impact on global production of corn, rice, and wheat, whereas soybean production could be higher. There are also risks associated with Russia imposing a ban on agricultural products from Australia, Canada, the European Union, Norway, and the United States. The ban could exert downward pressure on prices as a result of reduced demand and could increase domestic prices within Russia—although the country will be sourcing imports from other regions, such as Africa, Asia, and Latin America.

Metal prices have unexpectedly risen 2 percent since March 2014 on reduced inventories for some metals (aluminum, copper, zinc), following more than three years of decline. Metal consumption remains relatively strong, particularly in China (Figure 1.SF.1, panel 4). Nevertheless, overall, metal markets remain in net supply (flow) surplus, because of strong supply, suggesting that metal prices will likely decline in the near term, consistent with current futures price curves.

Price Outlook and Risks

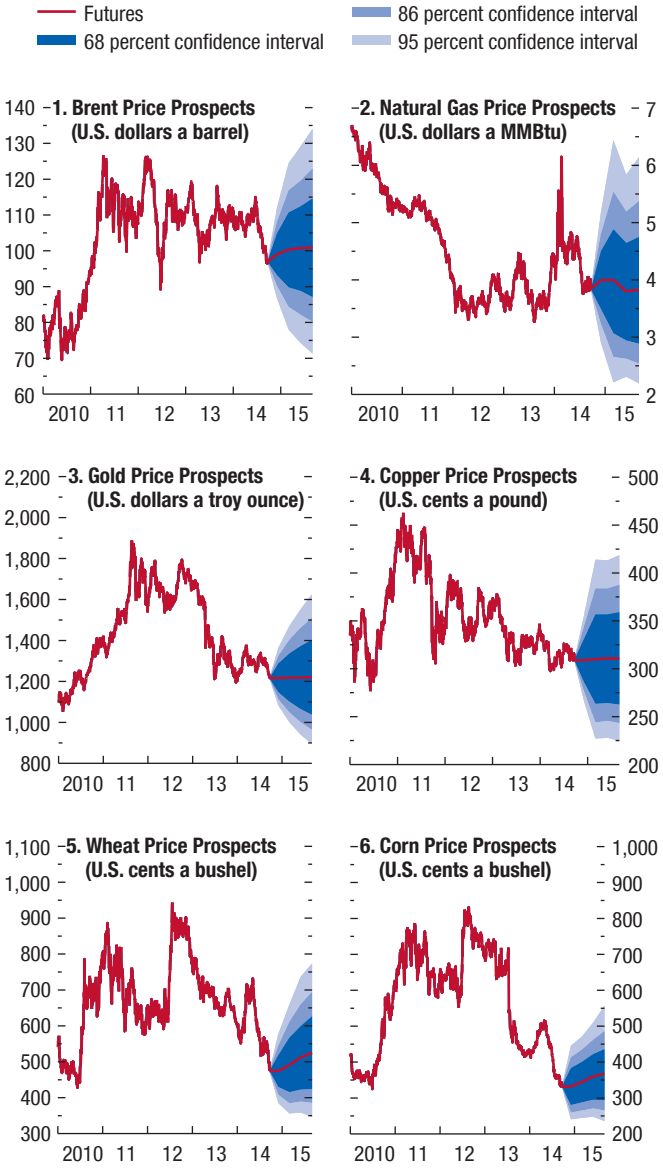
Commodity prices are expected to decline, in line with futures markets. Crude oil prices are projected to average $102.8 a barrel in 2014 (down 1.3 percent from 2013), falling to $99.4 in 2015 and to $97.3 in 2016. This pattern is consistent with strong increases in non-OPEC production. Food prices are projected to decline by 4.1 percent in 2014 and by 7.9 percent in 2015 and to remain broadly unchanged in 2016. This projection reflects favorable harvest conditions for the current year, as discussed earlier. Metal prices are projected to decline by 7.5 percent in 2014 and by 1.8 percent in 2015, before rising 0.6 percent in 2016. This price path reflects ongoing supply gains in the short term but also anticipates some tightening in market conditions in the medium term, as lower prices should start to have negative supply effects (for example, through lower investment).

Risks to oil prices are tilted toward the upside given the wide range of supply outages and ongoing geopolitical tensions (Figure 1.SF.2). The largest concerns are escalating violence within Iraq and the dispute between Russia and Ukraine. To the downside, reduced tensions and a recovery in output from affected areas, including the Islamic Republic of Iran, could weigh heavily on oil prices, as would slower demand. Food price risks are tilted upward, given the recent decline in prices for major cereal crops and routine variability with weather. Risks to metal prices are fairly balanced given current surpluses and adequate stocks, with supply pressures deferred to 2015 (nickel) and beyond (most metals).

Natural Gas in the World Economy

Natural gas markets are much less integrated than oil markets, given the cost and logistical difficulty of trading gas across borders. The limited integration of gas markets is evident from substantial price differences across regions despite increasing liquefied natural gas trade. Global natural gas production and consumption have increased steadily and are projected to do so even more rapidly in the medium term. Three major developments of the past few years have had particularly important implications for gas and energy markets: the shale gas revolution in the United States, the reduction in nuclear power supply following the Fukushima disaster in Japan, and the geopolitical tensions between Russia and Ukraine.

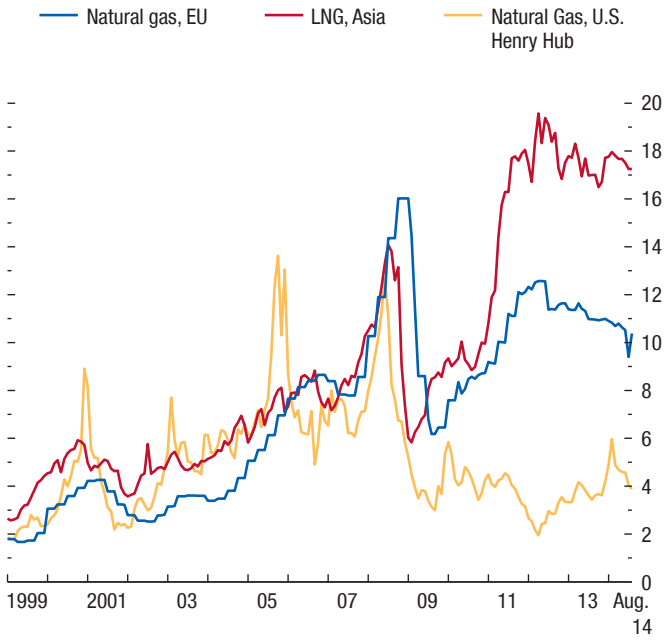
Figure 1.SF.2. Balance of Risks



Sources: Bloomberg, L.P.; and IMF staff estimates.
Note: MMBtu = million metric British thermal units. Price prospects are derived from prices of futures options on August 12, 2014.

Figure 1.SF.3. Natural Gas Prices

(U.S. dollars a million metric British thermal units)



Source: IMF, Primary Commodity Price System.
Note: EU = European Union; LNG = liquefied natural gas.

Stylized Facts

Natural gas is the cleanest source of energy among fossil fuels (petroleum products, natural gas, and coal) and does not suffer from the other liabilities potentially associated with nuclear power generation. At the same time, the cost and logistical difficulty of trading gas across borders imply that natural gas markets are much less integrated than oil markets. Shipping or transporting natural gas requires either costly pipeline networks or liquefaction infrastructure and equipment, including dedicated vessels, and then regasification at the destination. The limited integration of gas markets is evident from substantial price differences across regions in recent years resulting from the U.S. shale gas boom and the Fukushima disaster, and in spite of increasing liquefied natural gas trade (Figure 1.SF.3).[1]

The Islamic Republic of Iran, Russia, Qatar, Turkmenistan, and the United States have the largest reserves of natural gas (Tables 1.SF.1 and 1.SF.2). Technological improvements in exploration and drilling activities have enabled both new discoveries and exploitation of previously identified reserves of natural gas. As a result of these new discoveries and the heightened exploitation of existing reserves, there are many more producers of natural gas today than there were

[1]In view of the sector's high capital intensity, natural gas suppliers tend to enter long-term contracts with customers. Prices of natural gas are indexed to crude oil prices, which introduces rigidities on the price side.

in the 1990s.[2] The largest producers of natural gas are the United States and Russia, followed by the Islamic Republic of Iran, Qatar, and Canada (Table 1.SF.2).

Natural gas consumption has risen steadily. It now accounts for nearly 25 percent of global primary energy consumption, whereas the share of oil has declined rapidly, from 50 percent in 1970 to about 30 percent today. Global natural gas demand is projected to increase strongly in the medium term (IEA 2014), with emerging market and developing economies accounting for the bulk of the growth. Natural gas usage faces competition from substitutes for gas in many sectors, particularly from renewables and coal in power generation—in part because of subsidies and gas-pricing regimes. Natural gas is also expected to make further inroads into transportation, in which its use is still very limited, eventually including the use of liquefied natural gas as shipping fuel.

The pattern of global trade in natural gas has evolved rapidly. Because natural gas has mainly been transported to consumers via pipeline, only one-third of natural gas consumed is traded internationally. Europe and North America are by far the largest markets integrated by pipelines, but their net imports have declined since 2005 on account of weaker economic activity and higher gas production in the United States. One-third of internationally traded natural gas is shipped as liquefied natural gas, and that share has been expanding rapidly, with the increase going mainly to Asia (Figure 1.SF.4). There were almost 20 liquefied-natural-gas-producing countries in 2013. Qatar has rapidly developed liquefied natural gas export capacity in the past decade and is now the largest exporter, accounting for about one-third of global natural gas trade.

Table 1.SF.1. World Fossil Fuel Reserves, Production, and Consumption

	2007	2013
Proven Reserves		
Oil (thousand millions of barrels)	1,399	1,688
Natural Gas (trillions of cubic meters)	161	186
Coal (millions of tons)	. . .	891,531
Production		
Oil (thousands of barrels a day)	82,383	86,808
Natural Gas (billions of cubic meters)	2,963	3,370
Coal (millions of tons)	6,593	7,896
Consumption		
Oil (thousands of barrels a day)	86,754	91,331
Natural Gas (billions of cubic meters)	2,954	3,348
Coal (millions of tons of oil equivalent)	3,204	3,827

Source: British Petroleum, *Statistical Review of World Energy 2014.*

Table 1.SF.2. Natural Gas Reserves, Production, and Consumption, by Country

	2007	2013
Proven Reserves (percent of world reserves)		
Iran	17.46	18.19
Russia	18.91	16.83
Qatar	15.80	13.29
Turkmenistan	1.45	9.41
United States	4.18	5.03
Production (percent of world production)		
United States	18.41	20.40
Russia	19.98	17.95
Iran	4.22	4.94
Qatar	2.13	4.70
Canada	6.17	4.59
Consumption (percent of world consumption)		
United States	22.14	22.02
Russia	14.28	12.35
Iran	4.25	4.84
China	2.39	4.83
Japan	3.05	3.49
European Union	16.18	12.90

Source: British Petroleum, *Statistical Review of World Energy 2014.*

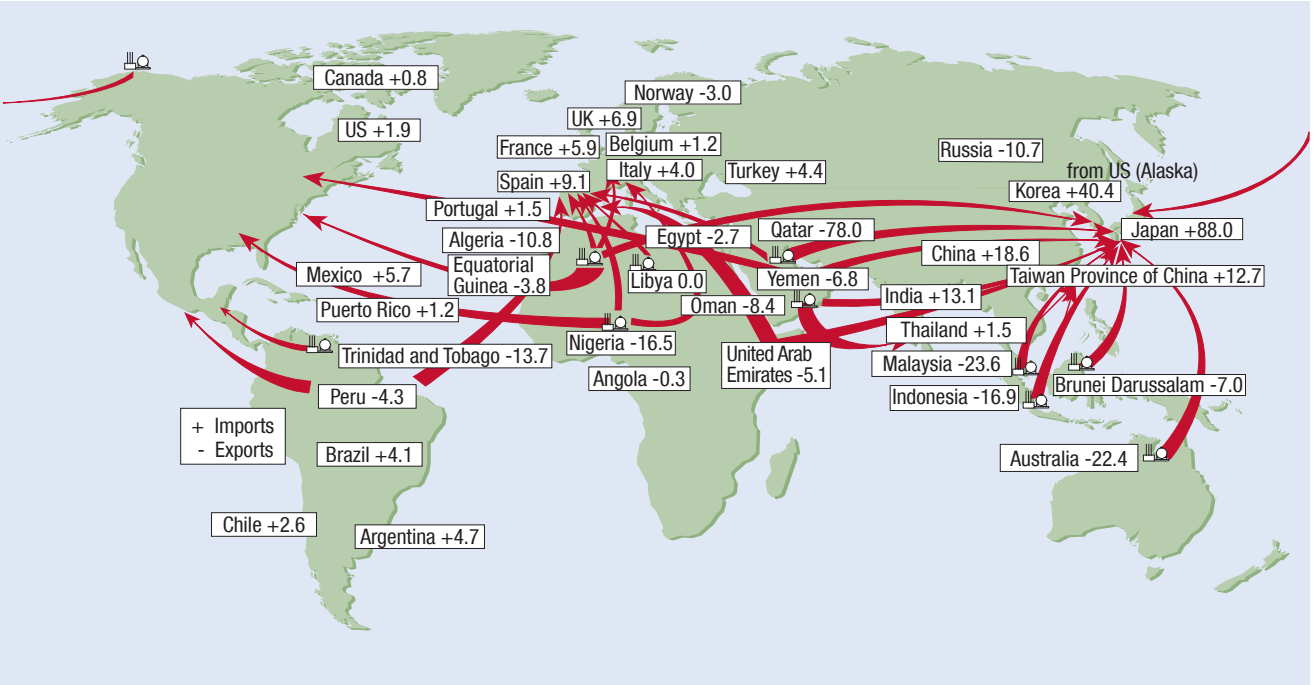
Global Implications of the U.S. Shale Boom

The surge in its production of shale gas has made the United States the largest natural gas producer in the world,[3] and it is expected to join the legion of liquefied natural gas exporters and even become a net exporter of natural gas later this decade (U.S. EIA 2014). With surging supply and weak demand, natural gas prices in the United States have fallen sharply in recent years and are effectively decoupled from those in the rest of the world. In particular, prices in Asia and the European Union have risen, partly because of the indexation of imported natural gas prices to oil prices. So far, energy users in the United States have been the main beneficiaries of the energy price declines that

[2]An index of diversification in global gas supplies shows a steady increase in the extent of diversification (Cohen, Joutz, and Loungani 2011).

[3]Natural gas production from shale deposits in the United States began in the 1980s, but the combination of hydraulic fracturing and horizontal drilling allowed gas production to increase sharply late in the first decade of the 2000s (with the higher natural gas prices supplying additional motivation). Shale gas production now accounts for about half of total U.S. natural gas production. The drilling technology has been applied to development of oil from shale deposits in part because of high oil prices, and the number of rigs drilling for shale oil has risen sharply.

Figure 1.SF.4. Liquefied Natural Gas Imports and Exports, 2013
(Millions of tons)



Source: Argus Media (www.argusmedia.com/Natural-Gas-LNG).
Note: UK = United Kingdom; US = United States.

have resulted from the U.S. shale revolution. However, that revolution has helped to stabilize international energy prices, including by freeing global energy supply for European and Asian markets, thus offsetting some of the shortages attributable to geopolitical disruptions.[4] Also, the U.S. shale boom has displaced coal from the United States to Europe, lowering energy costs in the latter.

The shale gas boom in the United States has also had a significant impact on the geography of global energy trade.[5] U.S. fossil fuel imports decreased to $225 billion (1.3 percent of GDP) in 2013 from $412 billion (2.8 percent of GDP) in 2008. Both demand for coal and coal prices in the United States have also declined. These declines, in turn, have encouraged increased exports of coal to Europe, which, together with weak activity there following the global economic and financial crisis, has reduced Europe's demand for natural gas.[6] The shale gas boom has drastically reduced U.S. liquefied natural gas imports from Africa, the Middle East, and Trinidad and Tobago (Figure 1.SF.5) and has also substantially reduced natural gas imports from Canada, triggering a sharp decline in prices as a result of a natural gas glut. Exporters have shifted energy exports to other locations, such as China, Europe, and India, in response to the U.S. reduction in energy imports.[7] In the United States, the shale gas boom has made much

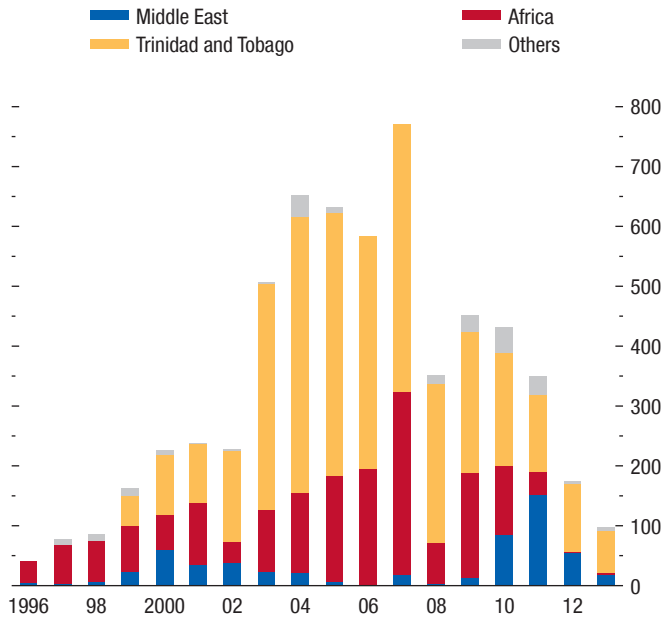
[4]While both the shale oil and gas booms have led to lower average world energy prices compared with what they would have been without these booms, the shale gas boom in particular has increased the dispersion in regional prices.

[5]Shale gas development has significant potential in many parts of the world, notably in Argentina, Australia, China, Poland, and Russia, where shale gas developments are under way, but also in many other locales. Development of this potential could further shift the patterns of global energy and nonenergy trade. However, shale gas production is expected to increase at a slower pace in countries other than the United States, because many of the conditions that facilitated the U.S. shale gas boom are not in place or at sufficient scale.

[6]In regard to trade, this shift has affected primarily Algeria, Norway, and Russia, the largest gas exporters to Europe.

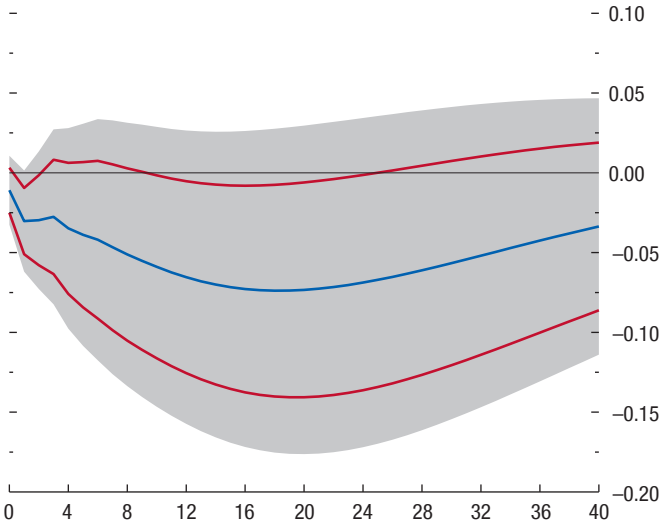
[7]Trinidad and Tobago has seen its exports of liquefied natural gas to the United States plummet. Since the start of the U.S. shale gas boom, however, Trinidad and Tobago has actively reoriented its liquefied natural gas exports toward South America, Europe, and Asia.

Figure 1.SF.5. United States: Liquefied Natural Gas Imports
(Billions of cubic feet)



Source: U.S. Energy Information Administration.

Figure 1.SF.6. Impulse Response of Relative Industrial Production to a Unit Relative Natural Gas Price Shock
(Months forward on x-axis)



Source: IMF staff calculations.
Note: The estimated vector autoregressive model includes two variables: relative industrial production in the United States and the euro area and the relative natural gas price in the United States and Germany, using monthly data for 2005–13. The impulse-response functions correspond to the response of relative industrial production to a unit shock in relative natural gas prices. Red lines indicate 80 percent confidence intervals, and shaded areas correspond to 95 percent confidence intervals.

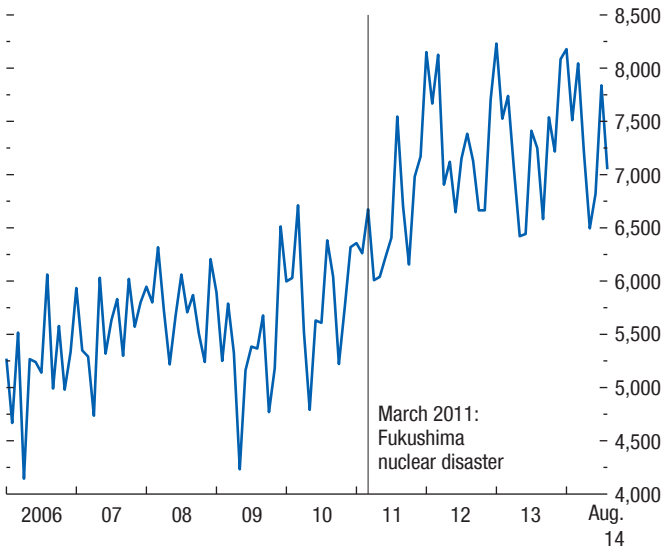
of the liquefied natural gas import infrastructure redundant. The infrastructure cannot easily be converted to export capacity, because liquefaction capacity is different from import regasification capacity. In addition, firms are required to obtain authorization to export natural gas (except to Canada and Mexico), though there are signs that the regulatory hurdles are loosening.[8] In the medium term, the removal of U.S. gas export restrictions would trigger the building up and reconversion of liquefied natural gas facilities for export purposes and in turn could help reduce energy price differences worldwide and further affect other natural gas exporters.

The U.S. advantage in natural gas has also led to an increase in U.S. competitiveness in nonenergy products, in turn affecting its competitors. Results of a bivariate vector autoregression including the difference in industrial production and the difference in the price of natural gas between the United States and Europe suggest that natural gas prices can have a substantial independent impact on economic activity (Figure 1.SF.6). This specification controls for global shocks such as the global economic and financial crisis, an issue that has been overlooked in other studies.[9] A 10 percent reduction in the relative price of natural gas in the United States is found to lead to an improvement in U.S. industrial production relative to that of the euro area of roughly 0.7 percent after one and a half years. Box 1.SF.1 provides estimates of the gain in international competitiveness of U.S. manufacturing exports due to cheaper natural gas.

[8]NERA (Baron and others 2014) estimates that the average annual increase in natural gas export revenues could reach almost $60 billion (in 2012 dollars) over the period 2018 to 2038 under a high-case scenario.

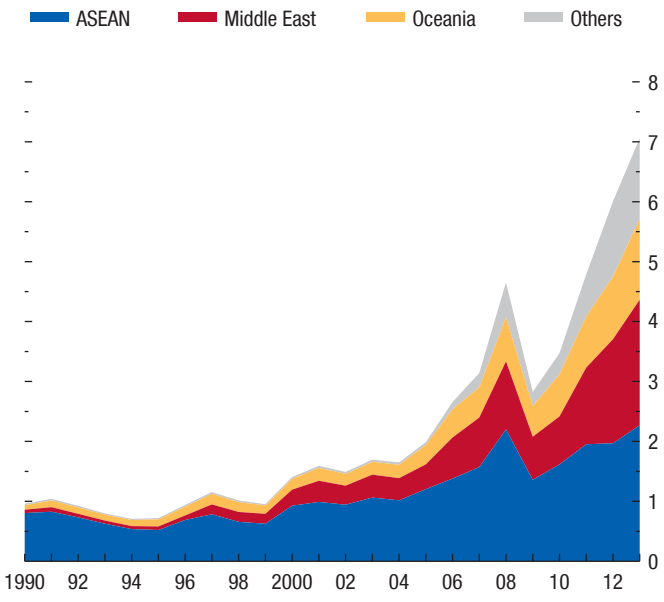
[9]Using industry-level data, Melick (2014) estimates that the fall in the price of natural gas since 2006 is associated with a 2–3 percent increase in activity for the entire manufacturing sector, with much larger effects of 30 percent or more for the most energy-intensive industries. Celasun and others (2014) find that a doubling of the natural gas price differential in favor of the home country would increase manufacturing industrial production in the home country by 1.5 percent.

Figure 1.SF.7. Japan: Liquefied Natural Gas Imports
(Thousands of metric tons)



Source: Thomson Reuters Datastream.

Figure 1.SF.8. Japan: Liquefied Natural Gas Imports by Region
(Trillions of Japanese yen)



Source: Thomson Reuters Datastream.
Note: ASEAN = Association of Southeast Asian Nations.

Aftermath of the Fukushima Disaster

The Fukushima Daiichi nuclear disaster in March 2011 highlighted the environmental liabilities associated with nuclear power generation and induced a sharp increase in natural gas usage. Before the disaster, about one-quarter of Japan's energy was generated by means of nuclear reactors. Following the disaster, the Japanese government decided to halt production at all nuclear power plants in the country. To compensate for the resulting loss in electricity generation, Japanese electric power companies increased their use of fossil-fuel power stations and appended natural gas turbines to existing plants. As a result, Japan's liquefied natural gas imports have increased dramatically—by about 40 percent—since the disaster (Figure 1.SF.7).

Japan is thus now the world's largest importer of liquefied natural gas. In 2013, the country's imports of liquefied natural gas amounted to 119 billion cubic meters: more than one-third of the world total. Increased natural gas demand from Japan has benefited producers in Asia, the Middle East, and Oceania at a time when global natural gas demand has slowed. Japan's imports have helped offset some of the negative effects of the reduction in U.S. liquefied natural gas imports. Australia, Brunei Darussalam, Indonesia, Malaysia, and Qatar have seen their liquefied natural gas exports to Japan rise rapidly (Figure 1.SF.8). The sharp increase in natural gas demand has led to higher prices in Asia, and Japan in particular, with prices in Asia reaching twice European prices and four times U.S. prices.

Risks from Geopolitical Tensions between Russia and Ukraine

The ongoing crisis in Ukraine has highlighted European energy markets' dependence on natural gas. In January 2009, Gazprom, the Russian energy utility, shut off all supply to Europe through Ukraine. In 2009, the spot price for gas increased by 50 percent, but the one-month-forward contract price moved up slowly—by 20 percent—during the three-week shutoff; crude oil prices did not react noticeably. Europe's dependence on natural gas transiting through Ukraine has decreased from 80 percent to roughly 50 percent since then. On June 16, 2014, Gazprom stopped providing natural gas to Ukraine but left the transit and supply to Europe unaffected.

Ukraine and countries in southeast Europe appear particularly vulnerable to potential disruptions of Russian gas supply. Should the gas cutoffs persist and be extended to other countries, the greatest impact will be on Ukraine and countries in southeast Europe that receive Russian gas transiting through Ukraine—in particular, Bulgaria and countries of the former Yugoslavia, which rely on Russian gas for virtually all of their import requirements and have only limited access to gas from alternative sources. Other countries, however, will be affected through rising spot prices, which may spread from natural gas to other fuels. Such risks can be mitigated through accumulation of reserves, purchasing pipeline gas from Algeria and Norway, importing liquefied natural gas, or buying Russian gas transported via other pipelines. Other fuels, notably coal and oil products, could also be substituted for gas.

Continental Europe imports a substantial portion of the gas it needs from Russia. In 2013, roughly 152 billion cubic meters of Russian gas—36 percent of European gas consumption—were exported to Europe via pipeline. On average, Russia supplies about 30 percent of Europe's natural gas needs. Roughly half of the gas supply from Russia is transported via pipeline through Ukraine (down from 80 percent before the Nord Stream pipeline was built). The share of natural gas in primary energy consumption ranges widely across European nations, from less than 2 percent in Sweden to 42 percent in the Netherlands.

So far the geopolitical tensions in the region have barely affected natural gas and crude oil prices. This price stability is less surprising in the case of crude oil because there are far fewer concerns about the consequences of a potential disruption in the supply of oil from Russia than about those of a natural gas supply disruption. In May of this year, Russia signed a $400 billion deal to transport 38 billion cubic meters of gas a year from eastern Siberia to China starting in 2018. Pricing has not been disclosed, but the price is thought to be somewhat less than what Europeans are paying for pipeline gas from Russia. This deal gives Russia greater export flexibility should European gas demand continue to fall.

Conclusions

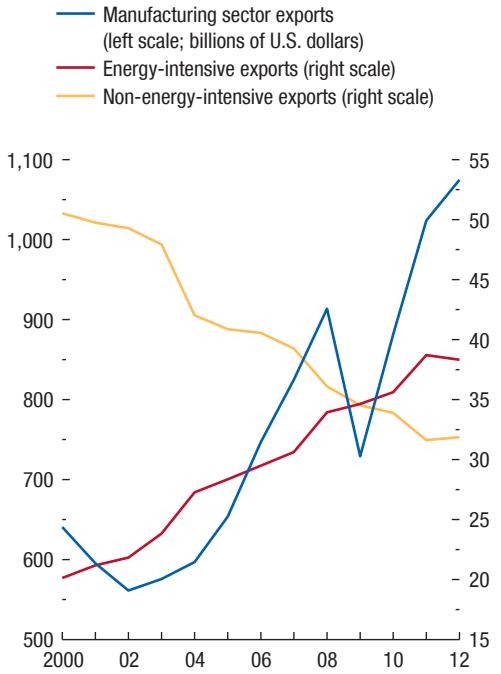
Overall, the pattern of global trade in liquefied natural gas, and energy more generally, is expected to evolve rapidly. In particular, the United States is likely to become a net exporter of liquefied natural gas by the end of 2015, Japan has become the world's largest importer of liquefied natural gas, and Europe faces uncertainty in its supply of natural gas, considering the geopolitical tensions between Russia and Ukraine. Energy policy, including for coal and renewables, plays a key role in shaping the energy mix, in turn affecting global trade in energy. Specifically, Europe and Japan are at a crossroads, facing a difficult balance between energy security, environmental concerns, and economic efficiency goals. In the medium term, natural gas prices in Asia are expected to decline, assuming the resumption of nuclear power generation in Japan and lower oil prices. European gas prices could edge lower as European countries move further toward spot-priced gas imports, but the tensions between Russia and Ukraine have led to increased uncertainty about future market developments. Domestic natural gas prices in the United States are expected to rise with rapidly growing liquefied natural gas exports but to remain markedly lower than those in Europe and Asia, given liquefaction costs.

Box 1.SF.1. The Trade Implications of the U.S. Shale Gas Boom

The shale gas boom has led to a debate in the United States about whether relaxing the restrictions on exporting natural gas would diminish the gains in external competitiveness resulting from lower domestic natural gas prices. As noted in the text of the Special Feature, the boom has led to a decoupling of U.S. natural gas prices from those in Europe and Asia since 2005, and the resulting price differentials are expected to persist. At the same time, the share of energy-intensive manufacturing exports in total U.S. manufacturing exports has been rising steadily, whereas the share of non-energy-intensive exports has been declining (Figure 1.SF.1.1).

This box sheds light on the global trade implications of international differences in natural gas prices using the U.S. shale gas boom as a natural experiment. The main finding, based on sector-level data, is that the current gap between U.S. prices and those in the rest of the world has led to a 6 percent increase, on average, in U.S. manufactured product exports since the start of the shale gas boom. Even though natural gas and energy costs in general represent relatively small shares of total input costs, the lower natural gas price in the United States, which is likely to persist, has had a noticeable effect on U.S. energy-intensive manufacturing exports.[1]

Figure 1.SF.1.1. Manufacturing Sector Exports
(Percent of total U.S. manufacturing exports, unless indicated otherwise)



Source: IMF staff calculations.

Energy intensity and manufacturing exports

For the period 2000–12, which covers the shale boom in the United States, the logarithm of manufactured-product exports is regressed on the interaction between differentials in energy intensity and in price between the United States and the rest of the world. The specification is a classical equation suggested by trade models. The coefficient associated with the interaction term is expected to be positive; that is, the more energy intensive a product is, the more likely it is to be exported. The equation estimated is

$$\ln(\text{product export}_{i,j,k,t}) = \alpha_{i,j,k} + \gamma_t + \eta \times \text{Energy Intensity}_{k,} \times \text{Price Differential}_t + \varepsilon_{ijkt},$$

in which $\alpha_{i,j,k}$ are origin, destination, and sector-specific joint fixed effects capturing sector-specific distance, and γ_t are time fixed effects capturing common shocks. Product export is equal to the exported value of a specific manufacturing sector at the five-digit level for which information is available (from Schott 2008) on the customs district of origin i and the country of destination j and sector k. The direct energy intensity is the share of energy cost obtained using input-output tables from the U.S. Bureau of Economic Analysis, as described by Fetzer (2014). The price differential is taken to be the ratio between the U.K. and U.S. prices obtained from the Organisation for Economic Co-operation and Development.[2] The baseline sample consists of more than 940,000 observations corre-

The author of this box is Rabah Arezki.

[1]These results are also robust to an array of checks, including additional controls such as country differences in labor costs and GDP. Arezki and Fetzer (forthcoming) present extensive technical details and robustness checks. A multitude of factors that go beyond the scope of this box are driving U.S. manufacturing exports. The interpretation of the present results is, of course, subject to all else being equal.

[2]Using benchmarks other than the United Kingdom yields similar results because the variation in the relative price is coming mostly from the U.S. prices.

Box 1.SF.1 *(continued)*

sponding to an unbalanced panel of manufacturing product exports from origin to destination pairs.

What is learned from the results?

The coefficient associated with the interaction between energy intensity and price differential is large, positive, and statistically significant (Table 1.SF.1.1). The baseline point estimate is 0.42 with a standard error of 0.10. The direct energy cost share for manufacturing products is a little more than 5 percent, and the total energy cost share is about 8 percent. In comparison, the direct labor cost share for manufacturing goods is 20 percent. The measure of the price differential between the rest of the world and the United States is of a factor of three, on average.[3] This suggests that for the average manufacturing product, U.S. exports have risen by at least 6 percent ($0.42 \times 3 \times 0.05$) as a result of the price gap.

The results are checked to determine their robustness to using the natural gas cost share as opposed to the energy share, and also to the use of year dummies instead of natural gas price differentials; furthermore, oil and petroleum manufacturing products, which have a direct energy cost share greater than 60 percent, are dropped. The direct natural gas cost share is on average 2 percent for manufacturing products. This measure does not account for the fact that gas could be indirectly consumed through electricity. The baseline results are robust to using these alternative measures of energy use and specifications, and broadly similar figures are obtained.

Further evidence suggests that the channels through which cheaper domestic natural gas prices in the United States might have an impact on manufacturing exports are operating both at the intensive (expansion by existing firms) and extensive (new firm entry) margins. As more countries exploit new sources of natural gas, not only is the geography of trade in energy products likely to continue to change, but the geography of manufacturing exports is likely to change as well.

[3]The price differential is measured as the ratio of the rest of the world's natural gas prices to those in the United States.

Table 1.SF.1.1. Regression Results

	Energy Cost Share		Natural Gas Cost Share	
	(1)	(2)	(3)	(4)
	Total	Direct	Total	Direct
total utility share × price difference	0.415*** (0.099)			
direct utility share × price difference		0.432*** (0.111)		
total natural gas share × price difference			0.423*** (0.099)	
direct natural gas share × price difference				0.402*** (0.115)
Number of Observations	944,135	944,135	944,135	944,135
Adjusted R^2	0.277	0.277	0.277	0.277

Note: The dependent variable is logarithm of the value of product exports at the five-digit level. The specification is a classical equation suggested by trade models and also controls for year, product, and location (destination and origin) fixed effects. The regressions include product level. Standard errors are in parentheses.

***$p < 0.1$.

Box 1.1. Housing Markets across the Globe: An Update

Developments in real estate markets have led to seemingly contradictory concerns about both overheating and slow recovery. This dichotomy reflects the fact that housing markets across the globe have broadly followed a two-speed pattern: in one group of countries, housing markets quickly rebounded after modest declines during the Great Recession, while in the other group, they are still recovering from much sharper declines.

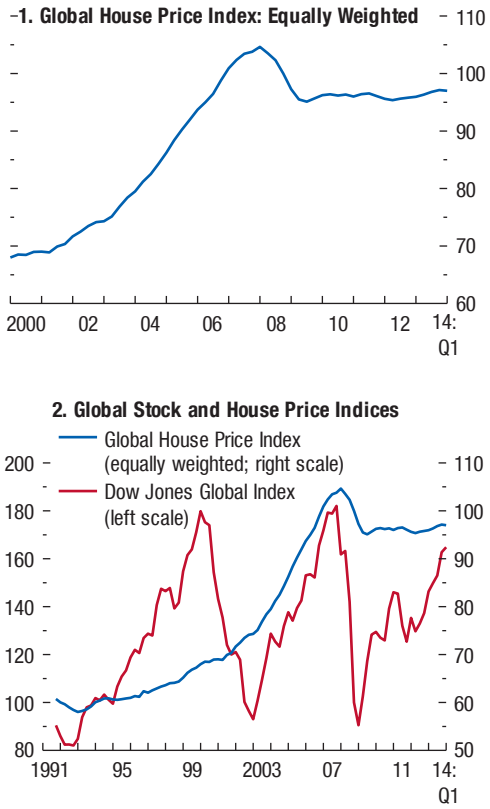
Reflecting these divergent movements, the IMF's Global House Price Index—an average of real house prices in 50 countries—has barely budged during the past two years, after a sharp drop during the crisis (Figure 1.1.1, panel 1). The recovery in house prices has been particularly anemic relative to that in other financial assets; for example, global indices of stock markets have rebounded to precrisis levels, although stock prices have also been much more volatile than house prices (Figure 1.1.1, panel 2).

However, the overall house price index masks the fact that economies fall into two clusters. The first cluster consists of 33 economies in which housing markets are still recovering: house prices in general dropped sharply at the onset of the Great Recession, and the subsequent recovery has been slow. The second cluster comprises 17 economies in which housing markets have rebounded: the drop in house prices in 2007–08 was more modest and was followed by a quick rebound (Figure 1.1.2, panel 1).[1] In the former group, real house prices are, on average, 20 percent lower than in 2008; in the latter group, they are about 25 percent higher. Credit has also expanded much more slowly in the former group than in the latter (Figure 1.1.2, panel 2).

In the economies in which house prices have rebounded, construction gross value added and real residential investment are both 15 percent higher than in 2008. In recovering economies, the two metrics began to show a small uptick only in the past year (Figure 1.1.3).

The placement of countries in the two groups has been influenced by a number of factors. The rebound economies, on average, had a smaller precrisis boom in house prices than did the recovering economies, and they were judged to have better prospects for a growth rebound when the crisis hit (see Box 1.2 of the October 2010 *World Economic Outlook*). Rebound economies have also turned out to have higher growth since the crisis: during the period 2008–13, the average annual growth in the rebound economies was 2.7 percent, compared with 0.5 percent in the recovering

Figure 1.1.1. IMF Global House Price Index
(2008:Q4 = 100)



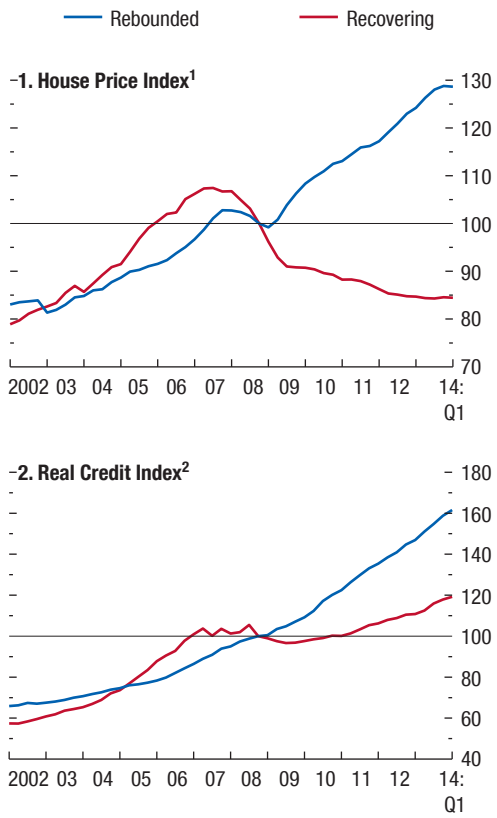
Sources: *Global Property Guide;* Haver Analytics; Organisation for Economic Co-operation and Development; and IMF staff calculations.

The main authors of this box are Hites Ahir and Prakash Loungani, drawing on their ongoing work with Philippe Bracke (Bank of England), Ambrogio Cesa-Bianchi (Bank of England), and Alessandro Rebucci (Johns Hopkins University), and with assistance from Deniz Igan and Heedon Kang.

[1]The determination of which group to place countries in is based on average real house price growth during the period 2007–14. Most countries clearly fall into one of the two groups, although a few are on the border. The results are not sensitive either to the placement of these countries or to their exclusion from the analysis. The results are also qualitatively similar if countries are weighted by GDP in group aggregates rather than weighted equally.

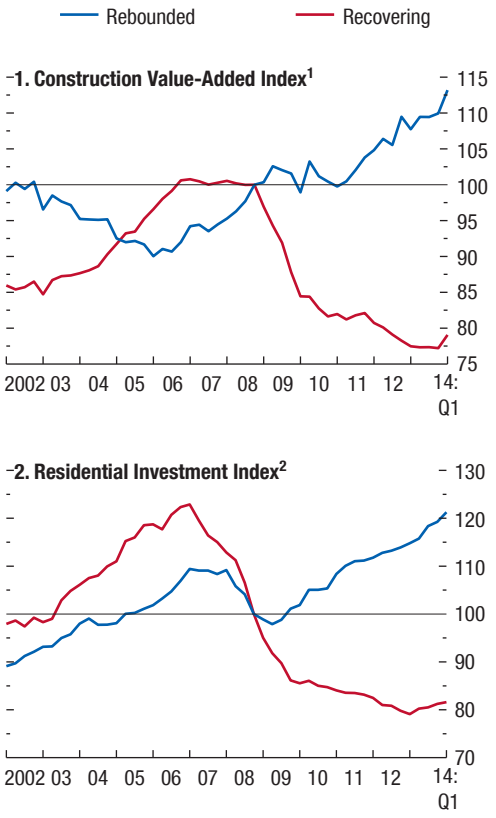
Box 1.1 *(continued)*

Figure 1.1.2. Two-Speed Recovery in Housing Markets
(2008:Q4 = 100)



Sources: Bank for International Settlements; *Global Property Guide;* Haver Analytics; Organisation for Economic Co-operation and Development; and IMF staff calculations.
[1]Rebounded = Australia, Austria, Brazil, Canada, China, Colombia, Germany, Hong Kong SAR, Israel, Luxembourg, Malaysia, New Zealand, Norway, Philippines, Singapore, Sweden, Switzerland. Recovering = Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Iceland, India, Indonesia, Ireland, Italy, Japan, Korea, Latvia, Lithuania, Malta, Mexico, Netherlands, Poland, Portugal, Russia, Slovak Republic, Slovenia, South Africa, Spain, Thailand, United Kingdom, United States.
[2]Rebounded = Australia, Brazil, China, Colombia, Hong Kong SAR, Malaysia, Philippines, Singapore, Switzerland. Recovering = Croatia, Iceland, India, Indonesia, Japan, Korea, Mexico, Russia, South Africa, Thailand, United Kingdom, United States.

Figure 1.1.3. Construction Gross Value Added and Residential Investment
(2008:Q4 = 100)



Sources: Haver Analytics; Organisation for Economic Co-operation and Development; and IMF staff calculations.
[1]Rebounded = Australia, Austria, Brazil, Canada, Colombia, Germany, Hong Kong SAR, Luxembourg, Malaysia, New Zealand, Norway, Philippines, Singapore, Sweden, Switzerland. Recovering = Belgium, Bulgaria, Croatia, Denmark, Estonia, Finland, France, Greece, Hungary, India, Indonesia, Ireland, Italy, Korea, Latvia, Lithuania, Malta, Netherlands, Poland, Portugal, Russia, Slovak Republic, Slovenia, South Africa, Spain, Thailand, United Kingdom, United States.
[2]Rebounded = Australia, Austria, Canada, Germany, Israel, Luxembourg, New Zealand, Norway, Sweden. Recovering = Belgium, Czech Republic, Denmark, Estonia, Finland, France, Hungary, Ireland, Italy, Japan, Korea, Mexico, Netherlands, Portugal, Slovak Republic, Slovenia, Spain, United Kingdom, United States.

Box 1.1 *(continued)*

economies. The slower growth in the recovering group may partly reflect the drag from household sector deleveraging: many economies in that group had a significant buildup in leverage during the boom period.

Cause for concern?

In countries where housing markets are still recovering, the policy challenge is to bring about a more robust recovery while addressing the underlying cause of the unsustainable booms that led to the crisis. For instance, in the United States, the resumption of mortgage lending to lower-rated borrowers has been slow, given the recognition that lending to such borrowers was one trigger for the crisis.[2]

Concerns about sustainability are greater in economies in which housing markets have rebounded, particularly for the emerging market economies in this group, for which growth prospects have been revised downward considerably in recent years. The most notable case is China, where the challenge is to allow for the necessary correction in real estate markets while preventing an excessively sharp slowdown. In large cities in China, house prices show signs of overvaluation relative to fundamentals, despite measures aimed at restricting speculative demand. In contrast, many smaller cities have experienced oversupply because local governments promoted large-scale development to boost growth and used land sales to finance local-government spending. In recent months, real estate markets in China appear to have entered a downturn. In Brazil, house prices and lending have increased sharply since 2009, and although the real-estate-loan-to-GDP ratio has tripled, it started from a very low base.

In other countries where housing markets have rebounded, IMF assessments point to modest overvaluations in Canada and Israel and more substantial overvaluations in Norway and Sweden (Table 1.1.1).[3]

In many cases, the house price booms are restricted to particular cities (in Australia and Germany, for example) or are amplified by supply constraints (New Zealand for example).[4]

Active use of macroprudential tools

Many countries—particularly those in the rebound group—have been actively using macroprudential tools to manage house price booms (Figure 1.1.4). The main macroprudential tools employed for this purpose are limits on loan-to-value ratios and debt-service-to-income ratios and sectoral capital requirements.[5] Such limits have long been in use in some economies, particularly in Asia (see Chapter 4 of the April 2014 *Regional Economic Outlook: Asia and Pacific*). For example, Hong Kong SAR has had a loan-to-value cap in place since the early 1990s and introduced a debt-service-to-income cap in 1994. In Korea, loan-to-value limits were introduced in 2002, followed by debt-service-to-income limits in 2005. Recently, many other advanced and emerging market economies have followed the example of Hong Kong SAR and Korea. In some countries, such as Bulgaria, Malaysia, and Switzerland, higher risk weights or additional capital requirements have been imposed on mortgage loans with high loan-to-value ratios.[6] Empirical studies thus

[2]The United Kingdom experienced a sharp decline in house prices during 2008–10, which is why it ends up being classified here in the recovering group. During the past year, U.K. house prices have risen substantially, particularly in the London market. The IMF's recent Selected Issues paper for the United Kingdom notes that "the increase in house prices in a context of weak credit growth suggests that cash transactions, in particular by foreigners, are playing an increasingly important role in the housing recovery" (IMF 2014d, 12). The report also points to tight housing supply constraints as another factor behind house price increases.

[3]Table 1.1.1 also notes the dates on which these assessments were published. It is important to keep these in mind, because some adjustments in prices may have taken place since these dates. The assessments are based on different methods but broadly relate developments in house prices to a set of fundamentals such as GDP growth, interest rates, and rents. (See Igan and Loungani 2012 for typical results from regressions of house prices on fundamentals.)

[4]In the United Arab Emirates, rapid increases in some segments of the real estate market have prompted concerns about possible excessive risk taking. The IMF staff has advised that additional measures—such as macroprudential tightening and setting higher fees for reselling within a short time—are warranted, especially if real estate prices and lending continue to rise (IMF 2014c).

[5]Limits on loan-to-value ratios cap the size of a mortgage loan relative to the value of the property associated with the loan, in essence imposing a minimum down payment. Limits on debt-service-to-income ratios restrict the size of a debt service payment to a fixed share of household income, containing unaffordable increases in household debt. Sectoral capital requirements force lenders to hold extra capital against loans to a specific sector, such as real estate, discouraging heavy exposures to the sector. See IMF 2013 for a fuller discussion of the role of macroprudential policies as part of the tool kit for managing house price booms.

[6]In Norway, higher risk weights have been assigned to all mortgage loans from banks using the Basel II internal-ratings-based (IRB) approach to capital requirements, not just those with high loan-to-value ratios.

Box 1.1 *(continued)*

Table 1.1.1. IMF Assessments of Housing Market Developments in Rebound Economies

Country (date of assessment)	Assessment
Australia (February 2014)	The rise in prices is concentrated in Sydney, Melbourne, and Perth. It has not been accompanied by an overall increase in leverage. Credit growth is moderate, and many households continue to pay down debt.
Austria (September 2013)	The housing market has experienced strong price growth, but from low levels. From a medium-term perspective, the real price increase appears modest: a cumulative 40 percent over 10 years in Vienna and about 5 percent elsewhere.
Brazil (October 2013)	Since the global financial crisis, Brazil has experienced a rapid expansion in real estate loans and housing prices. During 2009–12, the real-estate-loan-to-GDP ratio increased to 6.9 percent from 2.3 percent.
Canada (February 2014)	House prices are high relative to both income and rents. The IMF staff estimates that real average house prices in Canada are about 10 percent higher than fundamental values, with most of the gap coming from the markets in Ontario and Quebec.
China (July 2014)	In large cities in China, house prices show signs of overvaluation relative to fundamentals, despite measures aimed at restricting speculative demand. In contrast, many smaller cities have experienced oversupply because local governments have promoted large-scale development to boost growth and used land sales to finance local-government spending.
Colombia (June 2014)	Real house prices have nearly doubled during the past decade, driven mainly by prices in the capital and two other cities.
Germany (July 2014)	Recent house price inflation has been stronger in cities such as Hamburg and Munich. Bundesbank analysis suggests that prices in Germany as a whole are close to fundamental values, but apartment prices in large cities may be overvalued by about 25 percent.
Hong Kong SAR (May 2014)	Property prices have increased some 300 percent from their trough in 2003. Although prices have leveled off more recently, estimates from IMF staff models indicate that they could be higher than suggested by fundamentals.
Israel (February 2014)	Property prices are currently about 25 percent higher than their equilibrium value, owing largely to low mortgage interest rates and supply shortages. Price-to-income and price-to-rent ratios are also well above their equilibrium values.
Luxembourg (May 2014)	Relatively high prices reflect both upward pressure from strong demand and supply bottlenecks. Although households' financial positions appear relatively sound, rising real estate exposures in domestically oriented banks warrant close monitoring.
Malaysia (March 2014)	House prices have increased rapidly, outpacing income and rental growth. Strong demand for residential property loans has been driven by a robust labor market and falling lending rates. However, underwriting standards do not appear to have deteriorated.
New Zealand (June 2014)	From historical and international comparisons and by some measures of affordability, house prices appear elevated, in part reflecting limited housing stock caused by low housing investment and geographical constraints preventing a rapid housing supply response.
Norway (August 2014)	Various factors have been contributing to rising house prices, including high income and wage growth, immigrant inflows, and supply constraints. Nevertheless, there are signs of overvaluation, with a sustained increase in the price-to-income ratio and a large deviation in the price-to-rent ratio from its historical average.
Philippines (August 2014)	House price increases have been modest compared with those in many other countries in Asia. The price-to-rent ratio has declined modestly since 2010 and does not signal price misalignment.
Singapore (November 2013)	After having risen more than 50 percent from their mid-2009 trough, house prices stabilized, and have recently started to fall, on intensive application of macroprudential policies. Indicators on the quantity side also indicate a softening of the market.
Sweden (June 2014)	Real house prices increased by about 50 percent between 2005 and May 2014, with the annual increase averaging about 7 percent since 2012. Standard indicators suggest house prices are 20 percent higher than those suggested by fundamentals.
Switzerland (May 2014)	With monetary conditions remaining accommodative and housing prices growing faster than incomes, measures to curb mortgage demand, especially from the more vulnerable households, need to be strengthened.

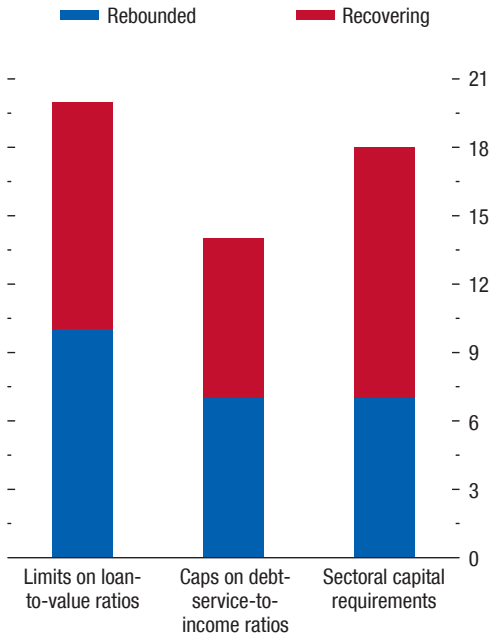
Source: IMF staff compilation.

Note: Rows shaded in blue indicate economies in which assessments have been made since the April 2014 *World Economic Outlook*.

Box 1.1 *(continued)*

Figure 1.1.4. Use of Macroprudential Tools to Manage Housing Booms

(Number of countries adopting the tool)



Source: IMF staff calculations.
Note: Rebounded = Australia, Austria, Brazil, Canada, China, Colombia, Hong Kong SAR, Israel, Malaysia, New Zealand, Norway, Singapore, Sweden, Switzerland. Recovering = Bulgaria, Croatia, Estonia, Finland, Hungary, India, Indonesia, Ireland, Korea, Latvia, Mexico, Netherlands, Poland, Russia, Slovak Republic, Spain, Thailand, United Kingdom, United States.

far suggest that limits on loan-to-value and debt-service-to-income ratios have effectively cooled off both house price and credit growth in the short term.[7]

[7]See, for example, Zhang and Zoli 2014 on the evidence for Asian countries and also Claessens, Ghosh, and Mihet 2014 and Lim and others 2011.

Implementation of these tools has costs as well as benefits, so each needs to be designed carefully to target risky segments of mortgage loans and minimize unintended side effects. For instance, stricter loan-to-value limits can be applied to differentiate speculators with multiple mortgage loans from first-time home buyers (as in, for example, Israel and Singapore) or to target regions or cities with exuberant house price appreciation (as in, for example, Korea). Regulators also should monitor whether credit operations move toward unregulated or loosely regulated entities and should expand the regulatory perimeter to address the leakages if necessary. For example, when sectoral macroprudential instruments are used to limit mortgage loans from domestic banks, they can be circumvented through a move to nonbanks (as in, for example, Korea) or foreign banks or branches (as in, for example, Bulgaria and Serbia).

Macroprudential tools may also not be effective for targeting house price booms that are driven by increased demand from foreign cash inflows that bypass domestic credit intermediation. In such cases, other tools are needed. For instance, stamp duties have been imposed to cool down rising house prices in Hong Kong SAR and Singapore. Evidence shows that this measure has reduced house demand from foreigners, who were outside the loan-to-value and debt-service-to-income regulatory perimeters.[8] In other instances, high house prices could reflect supply bottlenecks, which would need to be addressed through structural policies such as urban planning measures.

[8]Higher transaction taxes may not be the desired policy response in all cases. Taxes based on property values may be less distortionary. Moreover, financial stability risks may be lower if houses are bought with cash rather than credit, taking away some of the need for a policy response. See Crowe and others 2011 for a discussion of the effectiveness of various policies to manage real estate booms, including the difficulties of calibrating many of the macroprudential tools (for example, because of circumvention) and political economy considerations.

Box 1.2. The Origins of IMF Growth Forecast Revisions since 2011

After a sharp rebound following the global financial crisis, global growth declined every year between 2010 and 2013—from 5.4 percent to 3.3 percent. The slowdown was partly driven by new shocks, such as the euro area crisis. But even though forecasts in *World Economic Outlook* (WEO) reports were also pared down, global growth outturns have still surprised on the downside relative to each successive WEO forecast since 2011. Against this backdrop, this box analyzes the origins of the growth forecast errors in recent WEO projections, beginning with the October 2010 WEO.[1]

Growth forecast errors: Where, when, and how much?

One-year-ahead forecasts for global growth in 2011–14 were, on average, too optimistic—some 0.6 percentage point higher than outcomes (Table 1.2.1).[2] Average forecast errors for emerging market and developing economies (which accounted for some 80 percent of world growth during this period) were almost twice as large as those for advanced economies. The table also shows that a few economies account for the lion's share of the forecast error. Specifically, Brazil, China, India, and Russia (the BRICs), whose share in global GDP at purchasing-power-parity weights is about 28 percent, account for about half of the overall forecast error.[3] And four stressed economies in the Middle East account for another 20 percent of the global forecast error. For advanced economies, much of the overprediction of growth was for 2011–12, reflecting the euro area crisis (with large revisions especially for stressed euro area economies), the 2011 Japanese earthquake, and lower growth in some advanced Asian economies excluding Japan (particularly in 2012). For these advanced Asian economies, the error is likely related to the 1.4 percentage point growth forecast error for China in 2012. Forecast errors for the United States and for the remaining emerging market and developing economies were, on average, minor.

Growth forecast errors: Which GDP component?

The overprediction of global growth in 2011–13 primarily reflects an overprediction of investment (Figure 1.2.1). The contribution of the forecast errors for other demand components, such as net exports and consumption, varied across regions and countries—for instance, net exports were weaker than forecast in both Latin America and sub-Saharan Africa. These results do not identify the ultimate sources behind shortfalls in investment growth. Nevertheless, they suggest that domestic factors played a role in lowering investment growth below expectations, especially where disappointments in investment exceeded those in export growth. This implication resonates with recent studies that find that external factors play an important role in, but do not fully explain, the recent slowdown in emerging market and developing economies (see Chapter 4 of the April 2014 WEO; Cubeddu and others 2014; and IMF 2014b).

Growth forecast errors: Domestic and in trading partners

Further suggestive evidence is provided in Figure 1.2.2, which shows the relationship between forecast errors for domestic growth and those for growth in trading partners. In 2011–13, the forecast errors for both domestic and partner-country growth were typically negative and positively correlated, with a 1 percentage point forecast error in trading partners' growth associated, on average, with a domestic growth forecast error of some 0.9 percentage point. However, growth forecast errors for trading partners explain only a small fraction of the variance in forecast errors for domestic growth.

Serial prediction errors?

Was growth systematically overpredicted in the same countries? The scatter plot in Figure 1.2.3, based

The authors of this box are Rupa Duttagupta and Thomas Helbling, with support from Angela Espiritu.

[1]This analysis also updates that in the October 2013 WEO, which documented the origins of forecast revisions for regional growth through the fall of 2013.

[2]These errors measure the difference between estimates for actual growth in year *t* reported in the fall 2014 WEO (with *t* varying between 2011 and 2014) and the growth projection for year *t* made in the fall WEO of the previous year. For 2014, the forecast revision between the fall 2014 WEO and the fall 2013 WEO is used instead of the forecast error because the 2014 actual is not yet known.

[3]To make the forecasts analyzed here comparable across the WEO reports, all regional and global growth aggregates use the recently revised purchasing power parities of the 2011 International Comparison Program. Also, all regions and economies in the analysis represent a constant composition of countries, classified as advanced or emerging market and developing economies according to the October 2014 WEO. However, the figures are not adjusted for revisions in the historical data.

Box 1.2 *(continued)*

Table 1.2.1. Contribution to Global Growth Forecast Error[1]

(Percentage points, unless noted otherwise)

	Average, 2011–13 (percent)		Growth Forecast Error						Contribution to Global Growth Forecast Error	
	PPP share in:						Average		Average	
	World	Group	2011	2012	2013	2014	2011–13	2011–14	2011–13	2011–14
World	100.0		–0.3	–0.9	–0.6	–0.4	–0.6	–0.6	–0.60	–0.55
AEs	44.5	100.0	–0.5	–0.7	–0.1	–0.2	–0.4	–0.4	–0.20	–0.17
Of Which:										
United States	16.6	37.4	–0.7	0.5	0.1	–0.4	0.0	–0.1	0.00	–0.02
Japan	4.7	10.5	–2.0	–0.8	0.3	–0.4	–0.8	–0.7	–0.04	–0.03
Stressed EA	4.4	10.0	–0.9	–2.7	–0.6	0.1	–1.4	–1.0	–0.06	–0.05
EA Excl. Stressed EA	8.3	18.7	0.8	–1.1	–0.4	–0.2	–0.2	–0.2	–0.02	–0.02
Asia Excl. Japan	3.0	6.8	–0.5	–2.6	–1.0	–0.2	–1.4	–1.1	–0.04	–0.03
Other AEs	7.4	16.7	–0.4	–0.9	0.0	0.4	–0.4	–0.2	–0.03	–0.02
EMDEs	55.5	100.0	–0.1	–1.2	–0.9	–0.6	–0.7	–0.7	–0.40	–0.39
Of Which:										
BRICs	28.2	50.8	–0.5	–1.6	–1.0	–0.3	–1.0	–0.9	–0.30	–0.24
Brazil	3.0	5.4	–1.4	–2.6	–1.5	–2.2	–1.8	–1.9	–0.05	–0.06
Russia	3.5	6.2	0.0	–0.7	–2.5	–2.8	–1.1	–1.5	–0.04	–0.05
India[2]	6.5	11.8	–0.9	–2.3	–1.0	0.7	–1.4	–0.9	–0.09	–0.06
China	15.2	27.4	–0.3	–1.4	–0.5	0.1	–0.7	–0.5	–0.11	–0.08
Stressed Middle East	2.8	5.0	–2.7	–5.1	–4.8	–3.4	–4.2	–4.0	–0.11	–0.11
Other EMDEs	24.6	44.2	0.7	–0.2	–0.4	–0.6	0.0	–0.1	0.01	–0.03

Source: IMF staff estimates.

Note: Forecast errors are actual data minus forecasts for the specified year made in the previous year. AEs = advanced economies; Asia Excl. Japan = Hong Kong SAR, Korea, Taiwan Province of China; BRICs = Brazil, Russia, India, China; EA = euro area; EMDEs = emerging market and developing economies; stressed EA = Greece, Ireland, Italy, Portugal, Spain; stressed Middle East = Egypt, Iran, Iraq, Libya; PPP = purchasing power parity.

[1]Forecast revisions for growth in 2014.

[2]India's data for fall 2013 and fall 2014 WEO reports are transformed from a fiscal year basis to a calendar year basis to be comparable with the previous reports, in which the data were on a calendar year basis. Given that India's fiscal year runs from April 1 to March 31, the following proxy is used: GDP in calendar year (t) = 3/4 × GDP in fiscal year (t) + 1/4 × GDP in fiscal year ($t - 1$).

on a panel of the 50 largest economies for 2011–13, shows a positive and statistically significant correlation between the growth forecast errors in consecutive years. But the magnitude of this correlation is relatively small.[4]

Summary

In sum, the analysis in this box shows that much of the overprediction in global growth for 2011–14 can be traced to a relatively small number of economies, accounting for some 43 percent of world GDP in purchasing-power-parity terms. These include the four largest emerging markets (the BRICs), a few stressed economies in the Middle East and the euro area, Japan, and some Asian advanced economies. The contribution of the remaining advanced economies as well as other emerging market and developing economies to global growth disappointments has been generally small. Growth forecast errors for advanced economies were concentrated in 2011–12 and have been, on average, much smaller than the size of errors for emerging market and developing economies. There has been a general tendency toward repeated overprediction of growth, as reflected in positive serial correlation in forecast errors. But the magnitude of serial correlation seems relatively small in general.

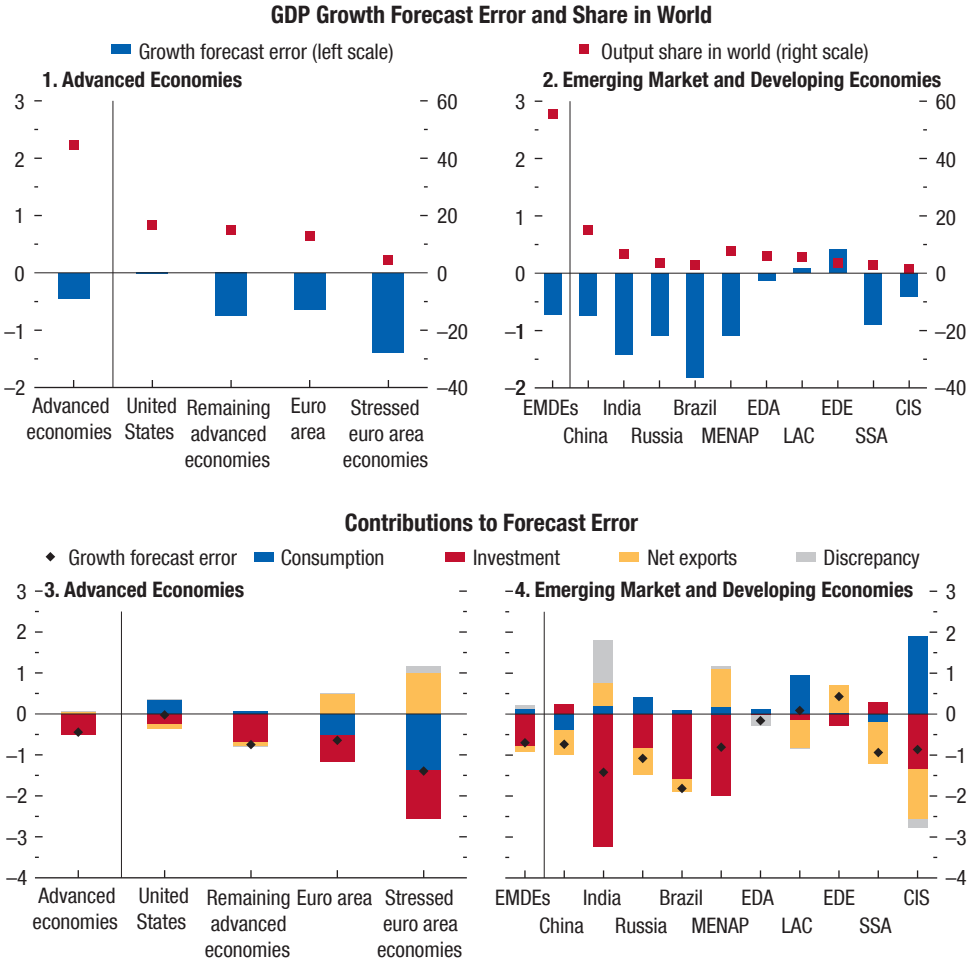
How should these results be interpreted? A plausible explanation is that in some economies, particularly the BRICs, there has been a gradual downward revi-

[4]A small, positive serial correlation in next-year forecast errors for growth also holds in a panel for all economies with WEO forecasts during this period (the coefficient is not statistically significant, however).

Box 1.2 *(continued)*

Figure 1.2.1. Growth Forecast Errors by Region, 2011–13

(Average annual percentage points)

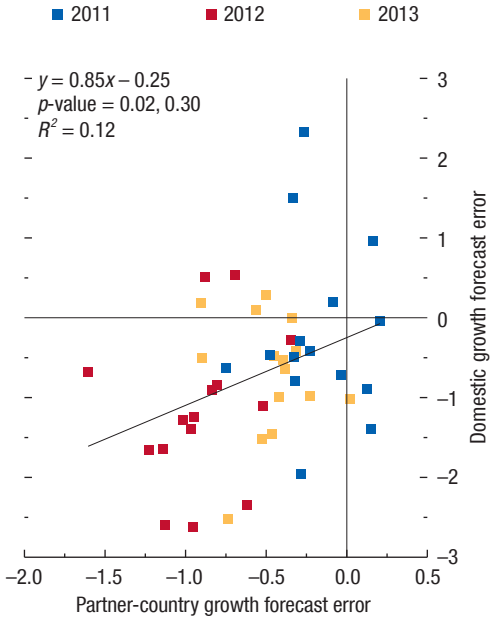


Source: IMF staff estimates.

Note: Forecast errors are actual data minus forecasts for the specified year made in the previous year. CIS = Commonwealth of Independent States excluding Russia; EDA = emerging and developing Asia excluding China and India; EDE = emerging and developing Europe; EMDEs = emerging market and developing economies; LAC = Latin America and the Caribbean excluding Brazil; MENAP = Middle East, North Africa, Afghanistan, and Pakistan; SSA = sub-Saharan Africa; stressed euro area economies = Greece, Ireland, Italy, Portugal, Spain. GDP growth forecast errors in panels 1 and 2 include all countries with real GDP growth forecasts. Data in panels 3 and 4 include only those countries with forecasts for all components of GDP. India's data for fall 2013 and fall 2014 WEO reports are transformed from a fiscal year basis to a calendar year basis to be comparable with the previous reports, in which the data were on a calendar year basis. Given that India's fiscal year runs from April 1 to March 31, the following proxy is used: GDP (contribution to GDP) in calendar year (t) = ¾ × GDP (contribution to GDP) in fiscal year (t) + ¼ × GDP (contribution to GDP) in fiscal year ($t-1$).

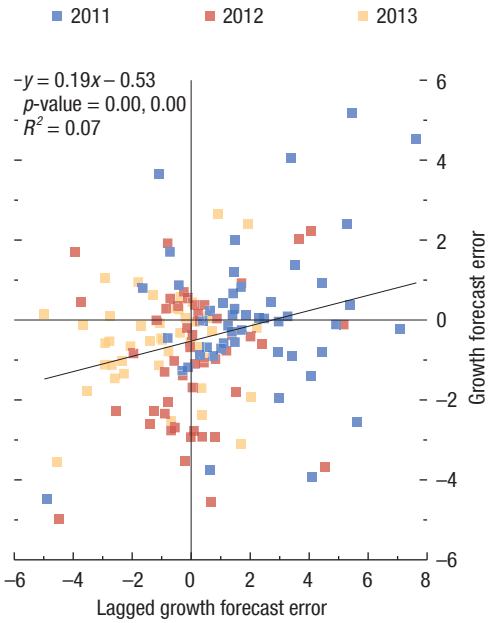
Box 1.2 *(continued)*

Figure 1.2.2. Partner-Country versus Domestic Growth Forecast Error
(Percentage points)



Source: IMF staff estimates.
Note: Forecast errors are actual data minus forecasts for the specified year made in the previous year. Among the advanced economies, the figure shows data for (1) the euro area; (2) Hong Kong SAR, Korea, and Taiwan Province of China; (3) Japan; (4) the United States; and (5) remaining advanced economies. For emerging market and developing economies, the figure shows data for (1) Brazil; (2) China; (3) India; (4) Russia; (5) the Commonwealth of Independent States excluding Russia; (6) emerging and developing Asia excluding China and India; (7) emerging and developing Europe; (8) Latin America and the Caribbean excluding Brazil; (9) the Middle East, North Africa, Afghanistan, and Pakistan; and (10) sub-Saharan Africa. See note to Figure 1.2.1 for details on forecasts for India.

Figure 1.2.3. Growth Forecast Error versus Lagged Growth Forecast Error
(Percentage points)



Source: IMF staff estimates.
Note: Forecast errors are actual data minus forecasts for the specified year made in the previous year. Data are for the top 50 economies in terms of purchasing-power-parity GDP averaged over 2011–13 excluding those with absolute forecast errors greater than 10 percent. See note to Figure 1.2.1 for details on forecasts for India.

sion to previously overestimated trend growth rates based on these countries' strong growth performance before and immediately after the global crisis. Indeed, Figure 1.2.4 shows that for the BRICs, forecast revisions have applied to both near-term growth and trend growth, as seen in the growing distance between the output paths between the fall 2011 and subsequent WEO reports. For stressed economies in the Middle East and to some extent for Russia, growth revisions also represent new shocks related to geopolitical tensions. For advanced economies, growth forecasts for 2011–12 underpredicted the severity of the euro area crisis, particularly for stressed euro area economies. And exogenous shocks—such as the downward revisions to growth in Japan following the 2011 earthquake—have clearly played some role.

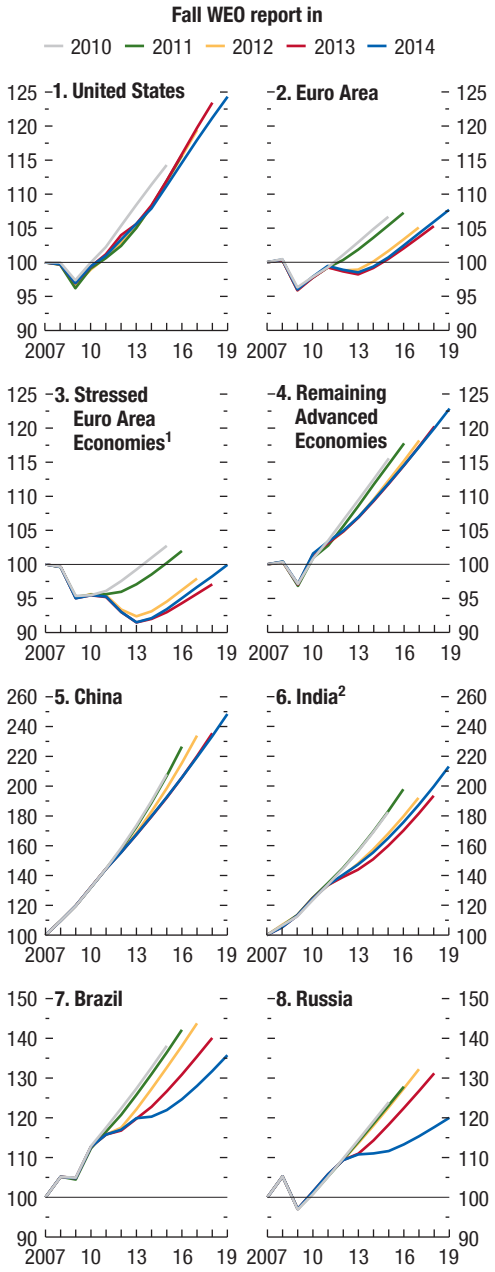
The analysis also suggests that although the growth shortfalls over the period studied have been associated with negative surprises in countries' expecta-

Box 1.2 *(continued)*

tions of growth in trading partners, domestic factors have played an important role, with forecast errors in investment explaining a large fraction of growth shortfalls for most economies.

Figure 1.2.4. Growth and Forecast Revisions in Major Economies

(Real GDP; index, 2007 = 100)



Source: IMF staff estimates.
[1]Greece, Ireland, Italy, Portugal, Spain.
[2]See note to Figure 1.2.1 for details on forecasts for India.

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CHAPTER 2

COUNTRY AND REGIONAL PERSPECTIVES

After a slowdown in the first half of 2014, global growth is forecast to strengthen to 3.5 percent in the second half of 2014 and 3.8 percent in 2015. But growth is uneven and still weak overall and remains susceptible to many downside risks. Production disruptions or sharply higher global oil prices—due to geopolitical tensions—would reduce global growth, as would an unexpected tightening in financial conditions owing to higher-than-expected U.S. long-term interest rates or increased risk aversion. Over the medium term, protracted weak demand in advanced economies could result in lower growth everywhere, including, in part, through negative supply-side effects.

Global growth slowed more than expected from an annualized rate of 3.9 percent in the second half of 2013 to 2.7 percent in the first half of 2014. Although the downside surprise was mainly owing to temporary factors, particularly for the U.S. economy, it also reflected a weaker recovery in the euro area, as the region continued to overcome the legacies of the crisis, and in Japan, where the negative effects on demand of the consumption tax increase were greater than previously expected. Among emerging market and developing economies, growth in China picked up in the second quarter, responding to the measures deployed to boost activity after a weaker-than-expected first-quarter outturn. However, domestic demand remained weak in a few major economies, notably in Latin America. Geopolitical tensions related to the Russia-Ukraine situation and the Middle East dampened activity in those regions, but with limited broader spillovers so far.

Against this backdrop, advanced economies are expected to continue a slow recovery, with growth rising to 1.8 percent this year and to 2.3 percent in 2015 (Figure 2.1, panel 1). Growth in emerging market and developing economies will slow to 4.4 percent in 2014, before rising to 5.0 percent in 2015. The forecast is weaker than projected in the April 2014 *World Economic Outlook* (WEO), reflecting the negative growth surprises in the first half of the year, a more subdued pace of domestic demand growth in some emerging markets, and stronger adverse effects of geopolitical tensions. Notwithstanding the recovery, growth is weak overall, and medium-term growth prospects have been marked down for many economies in the past several WEO reports (see Figure 1.15).

Downside risks to the forecast remain relevant. As elaborated in Chapter 1, escalation in geopolitical tensions is an immediate risk, as it could lead to sharply higher oil prices. This chapter's Spillover Feature finds that the consequences of a rise in the U.S. long-term interest rate depend on the drivers of the increase—for example, stronger U.S. growth versus tighter U.S. monetary policy due to higher-than-expected inflation—as well as on recipient countries' economic conditions and characteristics. And a protracted weak recovery in advanced economies would result in slower medium-term growth everywhere through weaker trade and productivity spillovers (Figure 2.1, panel 2). Thus, for more robust growth, many countries need policies to lift actual growth to its potential level and measures to raise potential growth itself.

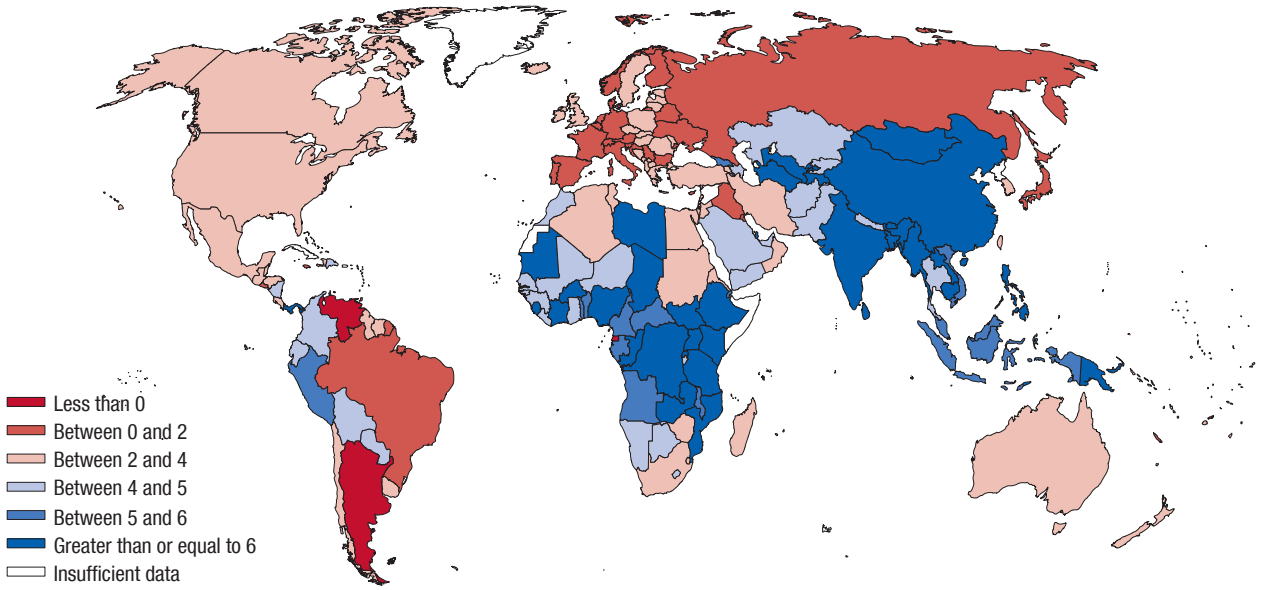
The United States and Canada: Recovery to Continue after Temporary Setback

Growth is now stronger in the United States and Canada after a slowdown in the first quarter of 2014. However, many downside risks, from both domestic and external sources, remain relevant. In the United States, monetary policy normalization should be gradual to sustain the recovery and avert negative domestic or global spillovers. Medium-term growth should be strengthened by upgrading infrastructure and human capital. In Canada, stronger exports and business investment are expected to translate into more balanced growth, but housing market risks should continue to be closely monitored.

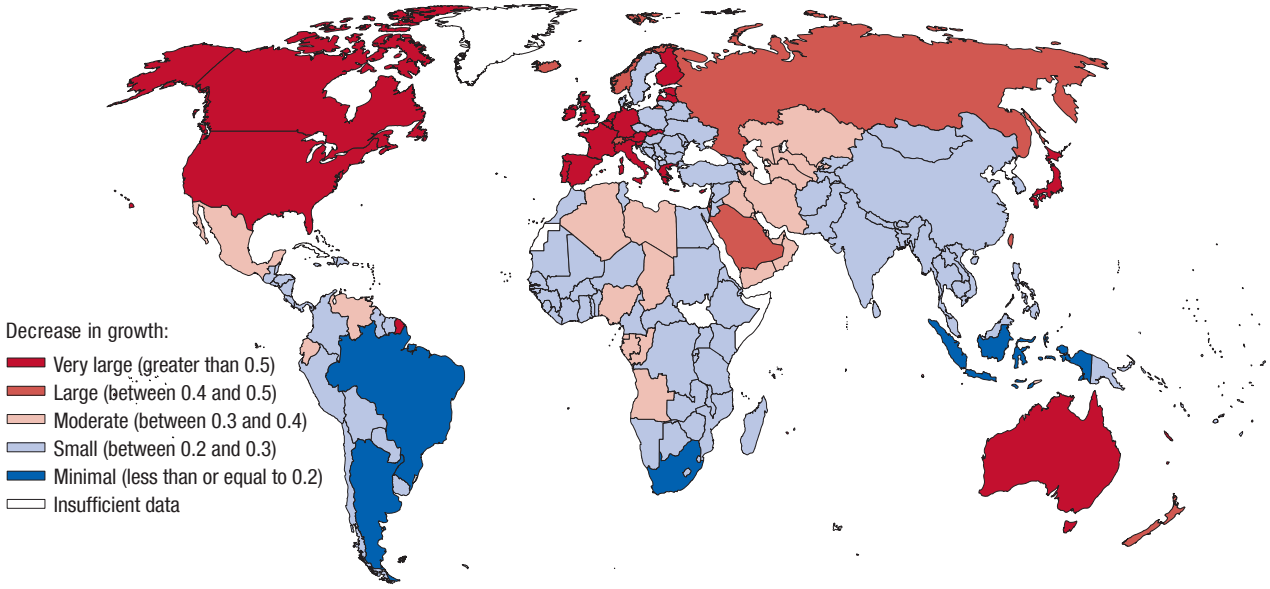
After a temporary setback in the first quarter of 2014, the U.S. economy has rebounded. Temporary constraints—an unusually harsh winter and a sharp correction to an earlier inventory buildup—have now receded. Growth reached an annualized 4.2 percent in

Figure 2.1. 2015 GDP Growth Forecasts and the Effects of a Plausible Downside Scenario

1. 2015 GDP Growth Forecasts[1]
(percent)



2. Effects of Secular Stagnation in Advanced Economies
(percentage point difference from baseline medium-term growth[2])



Source: IMF staff estimates.
[1]Syria is excluded because of the uncertain political situation. The data for Argentina are officially reported data as revised in May 2014. On February 1, 2013, the IMF issued a declaration of censure, and in December 2013 called on Argentina to implement specified actions to address the quality of its official GDP data according to a specified timetable. On June 6, 2014, the Executive Board recognized the implementation of the specified actions it had called for by end-March 2014 and the initial steps taken by the Argentine authorities to remedy the inaccurate provision of data. The Executive Board will review this issue again as per the calendar specified in December 2013 and in line with the procedures set forth in the Fund's legal framework. The Zimbabwe dollar ceased circulating in early 2009. Data are based on IMF staff estimates of price and exchange rate developments in U.S. dollars. IMF staff estimates of U.S. dollar values may differ from authorities' estimates. Real GDP is in constant 2009 prices.
[2]Simulations are conducted using the IMF's Flexible System of Global Models, with 29 individual countries and eight regions (other European Union, other advanced economies, emerging Asia, newly industrialized Asia, Latin America, Middle East and North Africa, sub-Saharan Africa, oil exporters group). Countries not included in the model are allocated to the regions based on the WEO classification of fuel exporters, followed by geographical regional classifications. Medium-term growth is proxied by growth in 2017, which is the year with the peak effect for most advanced economies.

the second quarter.[1] Improving housing activity, stronger nonresidential investment, and steady payroll gains suggest that the rebound is becoming more sustainable (Figure 2.2). The unemployment and labor participation rates stood at 6.1 percent and 62.8 percent, respectively, in August.

Despite the recovery, price pressures remain contained, with consumer price index inflation at 1.7 percent in August and core personal consumption expenditure inflation—the Federal Reserve's preferred measure of underlying inflation—at 1.5 percent in August. Price increases reflect higher energy and food costs, although increasing housing costs (rents and owner-equivalent rental costs) and the waning of the sequester-related compression of health care costs have also been factors in price conditions. Real wages have been flat, given still-substantial slack in the labor market.

At about 3 percent, growth is projected to remain above potential for the rest of the year and into 2015. The strength is underpinned by an improving labor market, better household balance sheets, favorable financial conditions, a healthier housing market as household formation gradually returns to levels that are more closely aligned with demographic factors, higher nonresidential investment as firms finally upgrade aging capital stock, and a smaller fiscal drag.

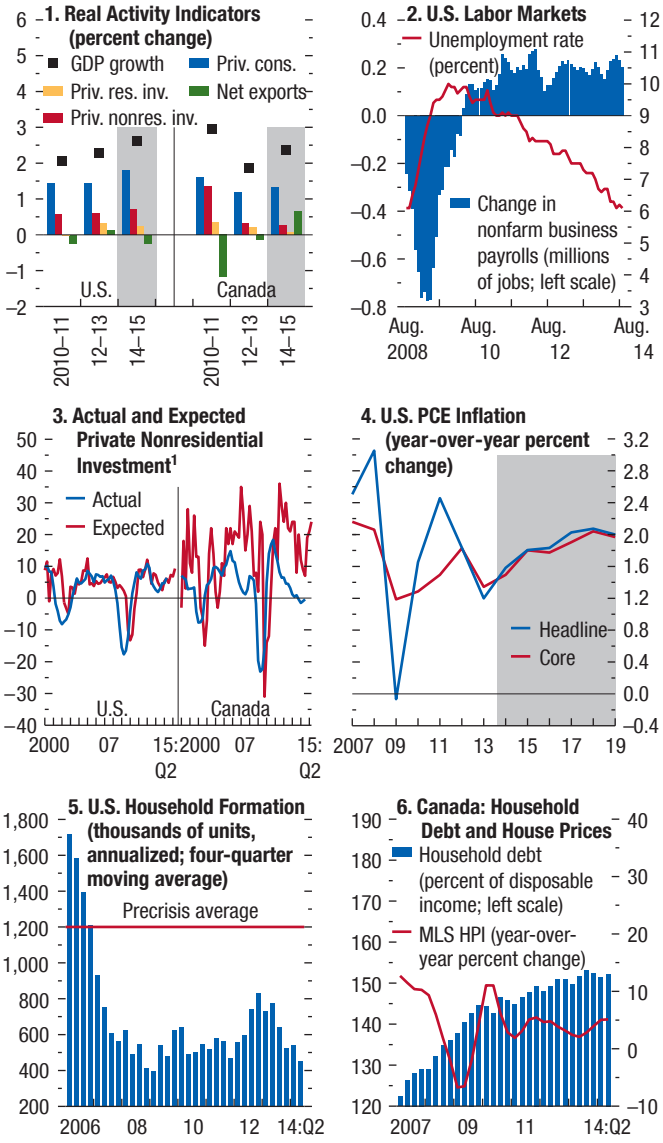
However, medium-term prospects are generally subdued. Under current policies, potential growth is estimated at only about 2 percent, weighed down by population aging and lower productivity growth compared with that in previous decades.

The risks to the outlook are broadly balanced. On the downside, an unexpected rise in inflation due to lower-than-expected economic slack could increase interest rates more sharply or more quickly than currently expected. Or there could be a disorderly unwinding of the recent compression of volatility and term premiums in financial markets. Uncertainty about fiscal policy and associated political brinkmanship could return in early 2015. External risks include a sharper slowdown in emerging markets, including China, and sharply higher oil prices, given geopolitical tensions. On the upside, the nascent improvement in private investment could continue, boosting confidence regarding future economic prospects and raising growth. Further improvements in

[1]Growth for the second quarter was revised to 4.6 percent after the WEO database was closed on September 19, 2014.

Figure 2.2. The United States and Canada: Recovery to Continue after Temporary Setback

In the United States, the recovery is firming after a brief slowdown in the first quarter of 2014, as improvements in labor markets continue and private investment picks up. Wage and price pressures, however, remain subdued. Canada's growth also slowed in the first quarter but has since rebounded strongly, with exports benefiting from the U.S. recovery and a weaker currency, while housing market risks call for continued vigilance.



Sources: Canadian Real Estate Association; Central Bank of Canada (BoC); Duke/*CFO Magazine* Global Business Outlook Survey; Haver Analytics; Statistics Canada; U.S. Bureau of Economic Analysis; U.S. Bureau of Labor Statistics; and IMF staff estimates.

Note: Cons. = consumption; inv. = investment; MLS HPI = Multiple Listing Service Housing Price Index; nonres. = nonresidential; priv. = private; PCE = personal consumption expenditure; res. = residential.

[1]Year-over-year percent change. Duke/*CFO Magazine* Global Business Outlook Survey and BoC Global Business Outlook Survey for expected (12-month-ahead) investment spending for the United States and Canada, respectively. For Canada, expected investment shows the balance of opinion measured as the percentage of firms expecting higher investment in machinery and equipment minus the percentage expecting lower investment.

Table 2.1. Selected Advanced Economies: Real GDP, Consumer Prices, Current Account Balance, and Unemployment
(Annual percent change unless noted otherwise)

	Real GDP			Consumer Prices[1]			Current Account Balance[2]			Unemployment[3]		
		Projections			Projections			Projections			Projections	
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
Advanced Economies	**1.4**	**1.8**	**2.3**	**1.4**	**1.6**	**1.8**	**0.4**	**0.3**	**0.2**	**7.9**	**7.3**	**7.1**
United States	2.2	2.2	3.1	1.5	2.0	2.1	–2.4	–2.5	–2.6	7.4	6.3	5.9
Euro Area[4,5]	–0.4	0.8	1.3	1.3	0.5	0.9	2.4	2.0	1.9	11.9	11.6	11.2
Japan	1.5	0.9	0.8	0.4	2.7	2.0	0.7	1.0	1.1	4.0	3.7	3.8
United Kingdom[4]	1.7	3.2	2.7	2.6	1.6	1.8	–4.5	–4.2	–3.8	7.6	6.3	5.8
Canada	2.0	2.3	2.4	1.0	1.9	2.0	–3.2	–2.7	–2.5	7.1	7.0	6.9
Other Advanced Economies[6]	2.3	2.9	3.1	1.5	1.6	2.2	5.5	5.1	4.8	4.5	4.5	4.4

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Table A6 in the Statistical Appendix.
[2]Percent of GDP.
[3]Percent. National definitions of unemployment may differ.
[4]Based on Eurostat's harmonized index of consumer prices.
[5]Current account position corrected for reporting discrepancies in intra-area transactions.
[6]Excludes the G7 (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and euro area countries.

mortgage credit availability for relatively lower-rated borrowers could stimulate a faster housing market recovery.

Policies should be geared toward keeping the recovery on course and achieving increased long-term growth. Monetary policy should manage the exit from zero interest rates in a manner that allows the economy to converge smoothly to full employment with stable prices while containing risks to financial instability, which, if they materialized, could have negative global spillovers. Financial stability concerns arising from a prolonged period of very low interest rates should be addressed with tightened supervision, stronger prudential norms, and strengthening of the macroprudential framework.

Forging agreement on a credible medium-term fiscal consolidation plan is a high priority, with steps to lower the growth of health care costs, reform social security, and increase revenues. Identifying specific measures for fiscal savings in future years would help relax the near-term budget envelope and allow increased funding for efforts aimed at raising labor force participation, encouraging innovation, strengthening productivity, and tackling poverty and long-term unemployment. Supply-side measures to raise potential growth through stepped-up infrastructure investments, better educational outcomes, improvements to the tax structure, and development of a skilled labor force, including through immigration reform, should also be considered.

Canada's growth slowed in the first quarter of 2014 but has since rebounded. The economy is expected to grow at 2.3 percent and 2.4 percent in 2014 and 2015, respectively (Table 2.1, Figure 2.1). Exports should benefit from the U.S. recovery and a weaker currency, which in turn would stimulate investment. However, more protracted weakness in external demand could hamper the momentum in exports and investment, while high household debt and a still-overvalued housing market remain important domestic vulnerabilities.

The slack in the economy, well-anchored inflation expectations, and downside risks to the outlook imply that the current accommodative monetary policy remains appropriate. Fiscal consolidation, while exerting only a modest drag on near-term growth, needs to proceed at the provincial level, where fiscal room is limited. Domestic vulnerabilities associated with the housing market and the household sector call for continued vigilance and may require additional macroprudential measures.

Europe

Advanced Europe: At Different Stages of Recovery

Advanced Europe is experiencing a multispeed recovery. Growth is still weak in the euro area, with lingering risks of more protracted low growth and low inflation. Elsewhere in Europe, housing market risks are emerging in some advanced economies. In the euro area, the priority is to strengthen the recovery, raise inflation, and lift medium-term growth through a mix of accommodative monetary policy, strengthening bank and corporate balance sheets, completing the banking union, and implementing structural reforms. Advanced European economies outside the euro area should mitigate financial sector vulnerabilities from the housing market.

Advanced Europe has begun to recover, but the recovery is still slow and tentative in the euro area. The euro area stagnated in the second quarter of 2014, with investment surprising on the downside in several large economies. Financial markets have remained resilient, with spreads at precrisis lows and lower bank funding costs. However, the legacies of the crisis—inadequate demand, high debt, and unemployment—continue to pose challenges to robust and sustained growth:

- Output and investment remain well below precrisis levels. Growth is weak and uneven across countries.
- Low inflation—well below the European Central Bank's (ECB's) price stability objective—is ubiquitous, reflecting persistent slack. Inflation expectations have declined.
- Balance sheets remain impaired, partly because of high debt and unemployment. Financial fragmentation persists, and firms in stressed economies face borrowing constraints. The ECB's comprehensive assessment is prompting banks to strengthen balance sheets, but this effort is still a work in progress.
- Notwithstanding progress on reforms, deep-seated obstacles to productivity and competitiveness remain. Moreover, the adjustment of relative prices and external imbalances has been asymmetric, with persistent current account surpluses in creditor countries.

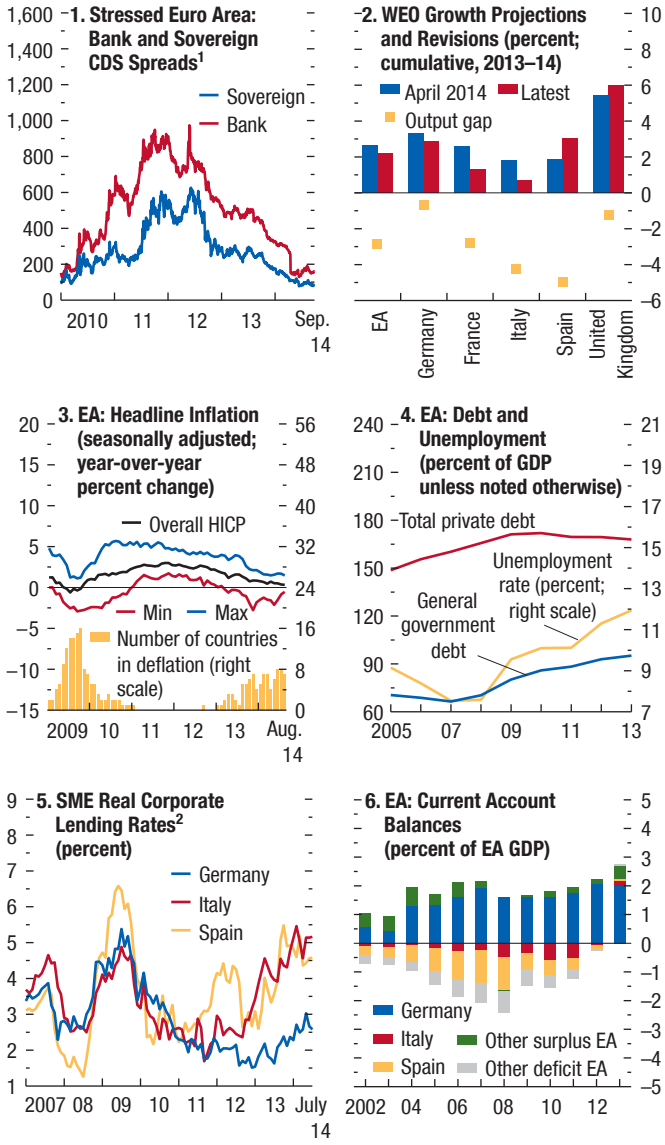
The outlook is for a modest recovery and subdued inflation. Growth—predicated on continued improvements in lending conditions and resilient external demand—is expected to average about 0.8 percent in 2014 and 1.3 percent in 2015. The forecast is weaker for both years compared with the April 2014 WEO (Figure 2.3). Over the medium term, growth is expected to hover around 1½ percent. Within this weak outlook, prospects are uneven across the region—stronger in Germany and Spain, weaker in France and Italy. Inflation will average about 0.5 percent in 2014 and is expected to remain well below the ECB's medium-term price stability objective in the foreseeable future owing to persistent slack over the medium term.

Growth is stronger in other advanced European economies (Table 2.2), but not without concerns:

- The United Kingdom's economy is expected to continue to grow strongly. Demand is becoming more balanced, with stronger business investment. But despite rapid employment growth, some slack

Figure 2.3. Advanced Europe: At Different Stages of Recovery

Financial markets remain generally resilient as a fragile recovery gets under way in the euro area. However, inflation remains low, reflecting large output gaps for most euro area countries. Stubbornly high unemployment rates, large debt, and persistent financial fragmentation continue to provide headwinds to growth. Current account balances have improved, but with persistent surpluses in creditor economies.



Sources: Bloomberg, L.P.; European Central Bank; Eurostat; Haver Analytics; IMF, World Economic Outlook database; and IMF staff estimates.
Note: Euro area (EA) = Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Luxembourg, Malta, Netherlands, Portugal, Slovak Republic, Slovenia, Spain. CDS = credit default swap; HICP = harmonized index of consumer prices; SME = small and medium enterprise.
[1]Bank and sovereign five-year CDS spreads in basis points are weighted by total assets and general government gross debt, respectively. Data are through September 22, 2014. All stressed euro area countries are included, except Greece.
[2]Monetary and financial institutions' lending to corporations under €1 million, one to five years.

Table 2.2. Selected European Economies: Real GDP, Consumer Prices, Current Account Balance, and Unemployment

(Annual percent change unless noted otherwise)

	Real GDP			Consumer Prices[1]			Current Account Balance[2]			Unemployment[3]		
		Projections			Projections			Projections			Projections	
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
Europe	**0.5**	**1.5**	**1.9**	**2.0**	**1.3**	**1.6**	**2.0**	**1.7**	**1.7**	. . .	. . .	. . .
Advanced Europe	**0.1**	**1.3**	**1.6**	**1.5**	**0.7**	**1.1**	**2.6**	**2.2**	**2.2**	**10.7**	**10.2**	**9.8**
Euro Area[4,5]	–0.4	0.8	1.3	1.3	0.5	0.9	2.4	2.0	1.9	11.9	11.6	11.2
Germany	0.5	1.4	1.5	1.6	0.9	1.2	7.0	6.2	5.8	5.3	5.3	5.3
France	0.3	0.4	1.0	1.0	0.7	0.9	–1.3	–1.4	–1.0	10.3	10.0	10.0
Italy	–1.9	–0.2	0.8	1.3	0.1	0.5	1.0	1.2	1.2	12.2	12.6	12.0
Spain	–1.2	1.3	1.7	1.5	0.0	0.6	0.8	0.1	0.4	26.1	24.6	23.5
Netherlands	–0.7	0.6	1.4	2.6	0.5	0.7	10.2	9.9	9.6	6.7	7.3	6.9
Belgium	0.2	1.0	1.4	1.2	0.7	1.0	–1.9	–1.3	–1.0	8.4	8.5	8.4
Austria	0.3	1.0	1.9	2.1	1.7	1.7	2.7	3.0	3.2	4.9	5.0	4.9
Greece	–3.9	0.6	2.9	–0.9	–0.8	0.3	0.7	0.7	0.1	27.3	25.8	23.8
Portugal	–1.4	1.0	1.5	0.4	0.0	1.1	0.5	0.6	0.8	16.2	14.2	13.5
Finland	–1.2	–0.2	0.9	2.2	1.2	1.5	–0.9	–0.6	–0.5	8.2	8.5	8.3
Ireland	0.2	3.6	3.0	0.5	0.6	0.9	4.4	3.3	2.4	13.0	11.2	10.5
Slovak Republic	0.9	2.4	2.7	1.5	0.1	1.3	2.1	1.9	2.2	14.2	13.9	13.2
Slovenia	–1.0	1.4	1.4	1.8	0.5	1.0	6.8	5.9	5.8	10.1	9.9	9.5
Luxembourg	2.1	2.7	1.9	1.7	1.1	2.1	5.2	5.1	4.0	6.9	7.1	6.9
Latvia	4.1	2.7	3.2	0.0	0.7	1.6	–0.8	–0.1	–1.5	11.9	10.3	9.7
Estonia	1.6	1.2	2.5	3.2	0.8	1.4	–1.4	–2.2	–2.4	8.6	7.0	7.0
Cyprus	–5.4	–3.2	0.4	0.4	0.0	0.7	–1.9	–1.1	–0.8	15.9	16.6	16.1
Malta	2.9	2.2	2.2	1.0	1.0	1.2	0.9	0.3	0.3	6.4	6.0	6.1
United Kingdom[5]	1.7	3.2	2.7	2.6	1.6	1.8	–4.5	–4.2	–3.8	7.6	6.3	5.8
Switzerland	1.9	1.3	1.6	–0.2	0.1	0.2	16.0	13.0	12.5	3.2	3.4	3.3
Sweden	1.6	2.1	2.7	0.0	0.1	1.4	6.2	5.7	6.1	8.0	8.0	7.8
Norway	0.6	1.8	1.9	2.1	2.0	2.0	11.2	10.6	10.2	3.5	3.7	3.8
Czech Republic	–0.9	2.5	2.5	1.4	0.6	1.9	–1.4	–0.2	–0.3	7.0	6.4	6.0
Denmark	0.4	1.5	1.8	0.8	0.6	1.6	7.3	7.1	7.0	7.0	6.9	6.6
Iceland	3.3	2.9	3.0	3.9	2.5	3.3	3.9	2.1	2.3	4.4	4.0	3.5
San Marino	–3.2	0.0	2.2	1.3	1.0	1.2	. . .	. . .	. . .	8.0	8.2	7.8
Emerging and Developing Europe[6]	**2.8**	**2.7**	**2.9**	**4.2**	**4.0**	**3.8**	**–3.9**	**–3.2**	**–3.5**	. . .	. . .	. . .
Turkey	4.0	3.0	3.0	7.5	9.0	7.0	–7.9	–5.8	–6.0	9.0	9.5	9.9
Poland	1.6	3.2	3.3	0.9	0.1	0.8	–1.4	–1.5	–2.1	10.3	9.5	9.5
Romania	3.5	2.4	2.5	4.0	1.5	2.9	–1.1	–1.2	–1.8	7.3	7.2	7.1
Hungary	1.1	2.8	2.3	1.7	0.3	2.3	3.0	2.5	2.0	10.3	8.2	7.8
Bulgaria[5]	0.9	1.4	2.0	0.4	–1.2	0.7	1.9	–0.2	–2.3	13.0	12.5	11.9
Serbia	2.5	–0.5	1.0	7.7	2.3	3.4	–6.5	–6.1	–5.1	21.0	21.6	21.8
Croatia	–0.9	–0.8	0.5	2.2	–0.3	0.2	0.9	2.2	2.2	16.6	16.8	17.1
Lithuania[5]	3.3	3.0	3.3	1.2	0.3	1.3	1.5	0.9	0.1	11.8	11.0	10.7

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Tables A6 and A7 in the Statistical Appendix.
[2]Percent of GDP.
[3]Percent. National definitions of unemployment may differ.
[4]Current account position corrected for reporting discrepancies in intra-area transactions.
[5]Based on Eurostat's harmonized index of consumer prices.
[6]Includes Albania, Bosnia and Herzegovina, Kosovo, FYR Macedonia, and Montenegro.

remains in the labor market, and labor productivity growth has been low. Inflation remains below the 2 percent target. House prices, however, have increased by 10 percent across the country—in London, more than double that—and household debt, at 140 percent of gross disposable income, remains high.

- The outlook in Sweden is for rising growth, driven by strong household demand and investment. Inflation is low, in part because of increasing services sector productivity. However, higher unemployment among vulnerable groups, especially at the lower end of the wage distribution, is a concern.

- Growth is expected to continue in Switzerland, although at a more modest pace, reflecting the recent softening in consumption and construction investment. Inflation is forecast to remain close to zero. Medium-term challenges include an aging population.

For the euro area, risks surrounding the growth projection are tilted to the downside. Specifically, the risk of protracted slow growth and persistently low inflation is high. And should the risk materialize, the effects would reverberate throughout Europe. There are also risks associated with reform fatigue and larger-than-expected bank recapitalization needs. Elsewhere in Europe, including in the United Kingdom, risks are more balanced. However, the United Kingdom, as well as Sweden and Switzerland, faces financial stability risks arising from housing and mortgage markets. For the entire region, negative external developments—such as lower growth in trading partners, an abrupt tightening of global financial conditions, and economic disruptions and sharply higher oil prices owing to geopolitical reasons, including from the Russia-Ukraine situation—are another major source of risk.

Policy efforts should focus on strengthening the recovery while ensuring financial stability. In this context, monetary and fiscal policies need to respond to divergent growth and inflation prospects:

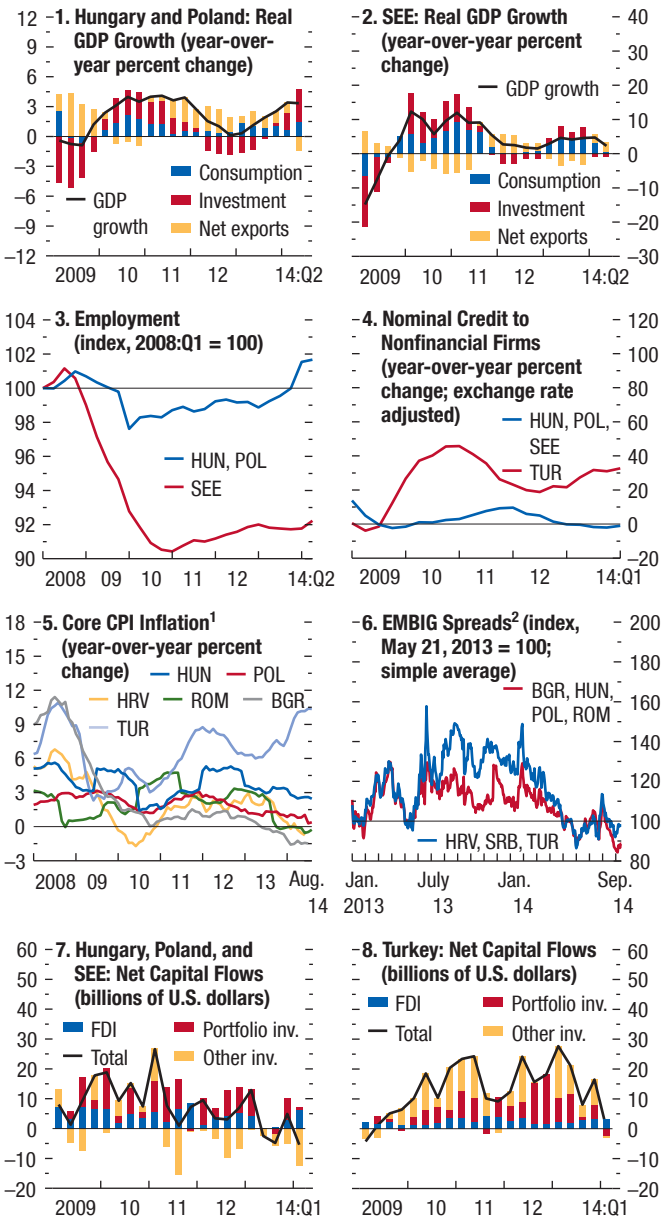
- For the euro area, the priority is to achieve strong above-trend growth and raise inflation, implying maintenance of accommodative monetary policy. Despite strong actions already taken in June and September of this year, if the inflation outlook does not improve and inflation expectations fail to increase, the ECB should be willing to do more, including the purchase of sovereign assets. Fiscal policy, which is only slightly contractionary in 2014–15 for the euro area as a whole, should not be tightened further in the event of negative growth surprises. Over the medium term, public debt in some countries needs to be reduced to more sustainable levels. For Germany, there remains a strong case for an increase in public investment, for example, for the upgrade and maintenance of transportation infrastructure.
- In the United Kingdom, given weak price and wage pressures, monetary policy should stay accommodative for now, but it may need to be tightened quickly if inflation rises. Interest rate increases could also be considered if macroprudential tools prove insufficient to contain financial stability risks (see next paragraph), with careful consideration given to the trade-off between damage to the real economy and the ultimate costs of financial vulnerabilities. This also holds for Sweden, where, absent effective action to reduce financial stability concerns, monetary policy will have to continue to balance price and financial stability risks. Large medium-term and contingent liabilities related to Sweden's large financial sector call for fiscal consolidation.

Stronger private sector balance sheets and financial sector reforms are needed to foster financial stability. In the euro area, bank recapitalization, lower corporate debt (in part through improved national solvency frameworks), and an effective common fiscal backstop to complete the banking union would help reduce financial fragmentation and restart credit flows. Financial sector vulnerabilities should be tackled in other advanced European economies: this implies continued strengthening of bank capital, but also effective and/or tighter macroprudential measures (Sweden, Switzerland). Macroprudential tightening may also be needed in the United Kingdom if recent measures prove insufficient to contain financial stability risks. The financial sector reform agenda in advanced Europe should be completed, including with respect to reforms dealing with large and systemically important banks and those to enhance cross-border resolution mechanisms.

Structural reforms are key to meeting medium-term challenges to growth. Greater labor and product market flexibility in debtor economies and higher infrastructure and private investment in creditor economies would raise productivity, employment, and growth and would also support greater rebalancing in the euro area. Lower hiring costs and more effective training programs would help reduce high youth unemployment rates. Capital markets need to be developed to fund small and medium firms. Longer-term challenges include simplifying the region's complicated fiscal framework and strengthening its enforcement. In Sweden and the United Kingdom, housing supply-side measures are crucial to safeguard housing affordability and mitigate financial stability risks. Labor market reforms would accelerate and sustain the transition of vulnerable groups into employment in Sweden. In Switzerland, the resolution of uncertainty related to future immigration policy would support growth.

Figure 2.4. Emerging and Developing Europe: Domestic Demand Taking Hold

Prospects remain uneven in emerging and developing Europe, with strong growth and improving employment in Hungary and Poland, but continued weakness in southeastern Europe. Financial conditions are still broadly supportive, but credit growth remains weak except in Turkey.



Sources: Bloomberg, L.P.; European Bank for Reconstruction and Development; Haver Analytics; and IMF staff calculations.
Note: Southeastern Europe (SEE) includes Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Kosovo, FYR Macedonia, Montenegro, Romania, and Serbia, wherever data are available. All country group aggregates are weighted by GDP valued at purchasing power parity as a share of group GDP unless noted otherwise. Data labels in the figure use International Organization for Standardization country codes. CPI = consumer price index; EMBIG = J.P. Morgan Emerging Markets Bond Index Global; FDI = foreign direct investment; inv. = investment.
[1]Data through August 2014 except in the cases of Bulgaria (July 2014) and Croatia (June 2014).
[2]Data through September 22, 2014.

Emerging and Developing Europe: Domestic Demand Taking Hold

Growth in emerging and developing Europe is also uneven, although domestic demand is strengthening in many countries in the region. With downside risks remaining, monetary and exchange rate policies should be used to support demand and manage the risks from market volatility, while fiscal policy should focus on rebuilding buffers. Enhancing debt resolution frameworks and advancing labor market reforms remain priorities for most countries in the region.

Economic recovery in emerging and developing Europe continued to be uneven, with growth remaining strong or accelerating in Hungary, Poland, and Turkey in 2013 and into the first half of 2014, but slowing in southeastern Europe. Financial market developments were also mixed although still broadly supportive (Figure 2.4). Corporate sector credit remained weak outside Turkey, partly reflecting the burden on the financial system from high levels of nonperforming loans. The region has thus far been resilient to the geopolitical tensions in Russia and Ukraine.

Inflation declined in most economies in the region, reflecting lower food and energy prices, as well as disinflation pressure from the euro area, particularly for economies that peg their currencies to the euro. Bosnia and Herzegovina, Bulgaria, Croatia, and Montenegro fell into deflation with persistent economic slack.

Growth is forecast to reach 2.7 percent in 2014 and 2.9 percent in 2015. The forecast entails an upward revision to growth in 2014 of 0.4 percentage point relative to the April 2014 WEO projections, mainly reflecting the stronger-than-expected outturn so far this year in some economies, and is unchanged for 2015.[2]

- Growth in Hungary and Poland is projected to rise, reaching 2.8 percent and 3.2 percent, respectively, in 2014, supported by rising investment and declining unemployment in Poland and significant monetary easing and higher public spending in Hungary. In 2015, growth will average 3.3 percent in Poland but slow to 2.3 percent in Hungary with the projected tightening in fiscal and monetary conditions.

[2]Note that the global and regional growth rates reported in the April 2014 WEO have been recalculated using the revised purchasing-power-parity weights (see note 1 of Chapter 1) to make them comparable to the figures in the current WEO report.

- Turkey's growth is expected to average 3 percent in 2014–15, down from 4 percent in 2013. In 2014, private consumption is projected to moderate, and government spending and investment will be the main drivers of growth, although net exports will also contribute. In 2015, growth will rotate toward private consumption and investment owing to the lagged effect of recent monetary easing.
- Southeastern Europe is projected to experience slower growth in 2014, in part because of severe floods in May that particularly affected Bosnia and Herzegovina and Serbia, before picking up in 2015 on reconstruction spending, rebuilding of flood-damaged areas, and in some countries, employment growth.

Inflation is expected to average about 3.8–4.0 percent during 2014–15. However, in a number of economies, inflation is likely to be much lower either because of imported disinflation (Bulgaria) or persistent economic slack (Croatia). In Turkey, inflation projections have been revised upward as a result of high food prices, the lagged effects of exchange rate depreciation, and a monetary policy stance that is inconsistent with the authorities' inflation target.

A return of market turbulence and a weaker euro area recovery continue to be the main risks to the outlook. Given the large stock of external private debt in many countries, as well as significant foreign-exchange-linked domestic debt in some, the region is also susceptible to other adverse shocks. These risks are somewhat mitigated by recent ECB policy actions to ease monetary conditions further, which could raise confidence and domestic demand more than currently expected.

As the recovery continues, and with most countries set to pursue fiscal consolidation to rebuild fiscal balances that deteriorated during the global crisis, monetary and exchange rate policies should be used flexibly—at different rates given differences in policy space and underlying vulnerabilities—to respond to changing market and economic conditions.

Enhancing private sector debt resolution frameworks, including through voluntary debt restructuring, would help tackle high levels of nonperforming loans and support credit growth. Reforming labor markets by reducing redundancy payments and addressing duality, enhancing the business climate, and improving competitiveness is crucial for many countries to increase potential growth. For Turkey, policies should aim to reestablish a nominal anchor and tighten the fiscal stance while promoting national saving and competitiveness.

Asia and Pacific: Steady Growth Ahead

The region's growth cooled somewhat in early 2014 but is now broadly on track for a rebound in the second half of the year. Growth will be driven by a bounce back in domestic demand, and for some, by stronger external demand. Downside risks stem from a sharp tightening in global financial conditions, as well as from protracted weak growth in advanced economies. A homegrown concern arises from a sharp slowdown in the real estate sector, especially in China. Under the baseline projections, fiscal consolidation should proceed gradually, and monetary tightening should start or continue where slack is negligible and inflation is high or rising. Structural reforms remain crucial for raising medium-term growth.

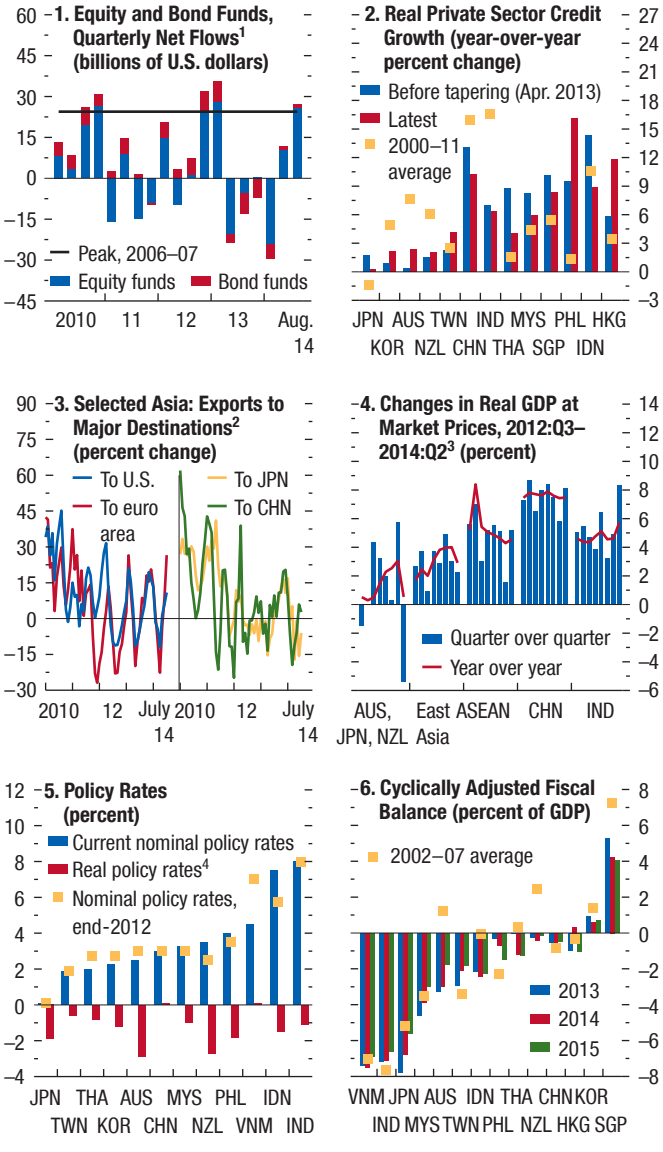
Growth slowed across most of the Asia and Pacific region in the first quarter of 2014 as export growth declined and domestic demand cooled in China (Figure 2.5). For some countries, the slowdown also reflected idiosyncratic factors (for example, political tensions in Thailand). However, activity picked up in most of the region's economies in the second quarter, including in China, on new measures to support activity. In India, growth increased in the second quarter on rising business confidence and stronger manufacturing activity since the election. Japan experienced a strong first-quarter growth outturn—reflecting, mostly, a stronger-than-expected rise in consumption ahead of the consumption tax hike—offset, however, by a somewhat sharper-than-envisaged slowdown in the second quarter, again driven by a sharp contraction in consumption.

Financial conditions have remained broadly supportive across the region, with strong credit growth, rising equity and bond fund flows in the second quarter of 2014, and stronger asset prices—reaching all-time highs in some cases.

The region's near-term outlook remains strong, predicated on a continuing global recovery. Growth is forecast to remain at 5.5 percent in 2014, rising to 5.6 percent in 2015—slightly weaker for both years compared with the April 2014 WEO forecast (Table 2.3). The downward revisions partly reflect the weaker first-quarter outturn. Growth is expected to be driven by domestic demand, given still-favorable financial conditions and healthy labor markets, but export growth is also expected to remain strong given the projected rebound in advanced economies and China. The macroeconomic policy stance across most economies is

Figure 2.5. Asia and Pacific: Steady Growth Ahead

Growth momentum cooled in early 2014 in the Asia and Pacific region, but recent data point to a rebound in the second half of the year. Exports should pick up on the back of stronger demand from advanced economies. Domestic demand is also expected to remain robust, helped by favorable financial conditions, healthy labor markets, and broadly accommodative policies.



Sources: CEIC; Haver Analytics; and IMF staff estimates.
Note: ASEAN = Association of Southeast Asian Nations (Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam). East Asia = China, Hong Kong SAR, Korea, Taiwan Province of China. Data labels in the figure use International Organization for Standardization country codes.
[1]Data include exchange-traded fund flows and mutual fund flows for ASEAN, Australia, east Asia, India, and New Zealand.
[2]Selected Asia includes Japan, Malaysia, Philippines, Singapore, Thailand, and east Asia. Vietnam is excluded due to a data lag. Annualized three-month moving average, seasonally adjusted.
[3]Quarter-over-quarter data are seasonally adjusted at an annual rate. East Asia excludes China. India's GDP is at factor cost.
[4]Deviation from 2002–07 average; percentage points.

also expected to remain broadly supportive. Inflation is forecast to remain generally low and stable.

- In China, growth will remain strong at 7.4 percent in 2014 on recent measures—higher infrastructure spending, support for small and medium enterprises, and social housing—and improved net exports. Growth is projected to moderate to a more sustainable rate of 7.1 percent in 2015 as slower credit growth through both the banking and nonbanking sectors slows investment and the moderation in real estate sector activity continues.
- In Japan, the sharp economic contraction in the second quarter induced by the consumption tax increase is expected to be short lived, with a moderate pace of recovery returning thereafter. GDP growth for 2014–15 is projected to average about 0.8–0.9 percent.
- Growth in India is expected to rise to 5.6 percent in 2014 and pick up further to 6.4 percent in 2015 as both exports and investment increase.
- Growth in Australia, Korea, and New Zealand is expected to be driven mainly by exports. In Korea, growth should rise from 3.7 percent this year to 4.0 percent in 2015, led by exports and investment. Australia's growth is forecast at 2.8–2.9 percent in 2014–15, with a pickup in exports offsetting waning mining investment. New Zealand is expected to benefit from reconstruction spending and export recovery, with average growth above 3 percent in 2014–15.
- The Association of Southeast Asian Nations–5 (ASEAN-5) economies are expected to grow steadily, except Thailand, where a sharp slowdown driven by political tensions this year should be followed by a rebound next year. Growth in Indonesia is expected to pick up moderately in 2015 owing to improved investor sentiment in the postelection period. Growth in Malaysia and the Philippines is forecast to remain strong in 2014–15, helped by favorable external demand and broadly accommodative policies and financial conditions.
- For the rest of developing Asia, growth should remain broadly robust, despite rising vulnerabilities associated with high fiscal and current account deficits in some countries. Given their relatively limited exposure to global financial markets, these economies were less affected by last year's tightening in financial conditions and are expected to benefit from stronger global and regional growth via stronger trade, remittances,

Table 2.3. Selected Asian and Pacific Economies: Real GDP, Consumer Prices, Current Account Balance, and Unemployment
(Annual percent change unless noted otherwise)

	Real GDP			Consumer Prices[1]			Current Account Balance[2]			Unemployment[3]		
		Projections			Projections			Projections			Projections	
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
Asia	**5.5**	**5.5**	**5.6**	**3.8**	**3.7**	**3.7**	**1.4**	**1.4**	**1.5**	. . .	. . .	. . .
Advanced Asia	**2.1**	**2.1**	**2.2**	**1.1**	**2.3**	**2.3**	**1.9**	**2.1**	**2.1**	**4.0**	**3.8**	**3.9**
Japan	1.5	0.9	0.8	0.4	2.7	2.0	0.7	1.0	1.1	4.0	3.7	3.8
Korea	3.0	3.7	4.0	1.3	1.6	2.4	6.1	5.8	5.8	3.1	3.1	3.1
Australia	2.3	2.8	2.9	2.4	2.7	2.6	–3.3	–3.7	–3.8	5.7	6.2	6.1
Taiwan Province of China	2.1	3.5	3.8	0.8	1.4	2.0	11.7	11.9	11.3	4.2	4.0	4.0
Hong Kong SAR	2.9	3.0	3.3	4.3	3.9	3.8	1.9	2.1	2.2	3.1	3.1	3.1
Singapore	3.9	3.0	3.0	2.4	1.4	2.5	18.3	17.6	16.6	1.9	2.0	2.1
New Zealand	2.8	3.6	2.8	1.1	1.6	2.0	–3.4	–4.2	–6.0	6.2	5.7	5.2
Emerging and Developing Asia	**6.6**	**6.5**	**6.6**	**4.7**	**4.1**	**4.2**	**1.0**	**1.0**	**1.1**	. . .	. . .	. . .
China	7.7	7.4	7.1	2.6	2.3	2.5	1.9	1.8	2.0	4.1	4.1	4.1
India	5.0	5.6	6.4	9.5	7.8	7.5	–1.7	–2.1	–2.2	. . .	. . .	. . .
ASEAN-5	**5.2**	**4.7**	**5.4**	**4.6**	**4.6**	**5.0**	**0.0**	**0.7**	**0.6**	. . .	. . .	. . .
Indonesia	5.8	5.2	5.5	6.4	6.0	6.7	–3.3	–3.2	–2.9	6.3	6.1	5.8
Thailand	2.9	1.0	4.6	2.2	2.1	2.0	–0.6	2.9	2.1	0.7	0.7	0.8
Malaysia	4.7	5.9	5.2	2.1	2.9	4.1	3.9	4.3	4.2	3.1	3.0	3.0
Philippines	7.2	6.2	6.3	2.9	4.5	3.9	3.5	3.2	2.6	7.1	6.9	6.8
Vietnam	5.4	5.5	5.6	6.6	5.2	5.2	5.6	4.1	3.4	4.4	4.4	4.4
Other Emerging and Developing Asia[4]	**6.4**	**6.7**	**7.0**	**6.7**	**6.3**	**6.2**	**–2.6**	**–1.8**	**–1.1**	. . .	. . .	. . .
Memorandum												
Emerging Asia[5]	6.6	6.5	6.6	4.6	4.0	4.1	1.1	1.1	1.2	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Tables A6 and A7 in the Statistical Appendix.
[2]Percent of GDP.
[3]Percent. National definitions of unemployment may differ.
[4]Other Emerging and Developing Asia comprises Bangladesh, Bhutan, Brunei Darussalam, Cambodia, Fiji, Kiribati, Lao P.D.R., Maldives, Marshall Islands, Micronesia, Mongolia, Myanmar, Nepal, Palau, Papua New Guinea, Samoa, Solomon Islands, Sri Lanka, Timor-Leste, Tonga, Tuvalu, and Vanuatu.
[5]Emerging Asia comprises the ASEAN-5 (Indonesia, Malaysia, Philippines, Thailand, Vietnam) economies, China, and India.

and tourism. However, the small states of the Pacific will continue to underperform as a result of infrastructure gaps and competitiveness issues.

Inflation in the region is expected to remain stable at 3.7 percent during 2014–15, but with important differences across economies. In Japan, underlying inflation, excluding the effects of the consumption tax increase, has been rising. Medium-term inflation expectations have also been rising, although they remain below the Bank of Japan's 2 percent target. In India, with recent monetary tightening, disinflation should continue, but inflation overall will remain high at 7.8 percent in 2014, declining slightly to 7.5 percent in 2015. Inflation will also pick up in a few economies in which subsidy or tax reform is expected to be implemented or in which output is estimated to be above potential (Indonesia, Malaysia, Philippines).

The immediate risks to the outlook stem from a sharp tightening of global financial conditions—triggered, for instance, by greater volatility induced by U.S. monetary policy normalization or a spike in global risk aversion—which could lead to capital outflows, asset price declines, and higher domestic interest rates. This risk is more elevated in countries that depend to a greater extent on external financing (India, Indonesia) and in economies with a large foreign investment presence in domestic financial markets (Indonesia). In some economies, an additional risk stems from a sharp decline in house prices and housing activity (China, Hong Kong SAR, Singapore) or relates to elevated household leverage (Australia, Korea, Malaysia). Sharply higher oil prices due to an escalation of geopolitical tensions would also affect economic activity in the region.

Over the medium term, in addition to risks of spillovers from prolonged low growth in advanced economies, emerging Asia's potential growth, which has declined in the last few years, could weaken further, particularly if reform implementation is delayed.

Rebuilding policy space and implementing structural reforms for sustainable and stronger growth remain key policy priorities. With respect to fiscal policy, although policy space varies across the region and automatic stabilizers should be allowed to operate, fiscal consolidation is desirable across most of Asia and the Pacific. It is a priority where debt levels are relatively higher (Japan) or where there are contingent fiscal liabilities (Malaysia).

Under the baseline projections, monetary normalization should also proceed gradually in most of the region's economies, given that slack is negligible and in some cases inflation is still high (India) or expected to rise (Malaysia, Philippines). China needs to further bring down credit growth and local government borrowing to address financial stability risks while allowing the economy to transition to a slower and more sustainable pace of growth. As highlighted in the April 2014 *Regional Economic Outlook: Asia and Pacific*, macroprudential policies have been generally effective in containing financial stability risks and should remain part of the toolkit. Exchange rate flexibility should be the main shock absorber, but foreign exchange intervention can also help smooth volatility and address disorderly market conditions.

Structural reforms should continue to aim at lowering near-term vulnerabilities and bolstering medium-term growth. The agenda varies across the region but includes financial sector, state-owned enterprise, and local government reforms (China); fiscal reforms (India, Japan); banking sector reforms (Mongolia, Vietnam); product and labor market reforms (Japan, Korea); and improvement of investment conditions (India).

Latin America and the Caribbean: Still Losing Speed

Growth declined further in early 2014 across the region, reflecting a slowdown in external demand as well as weaker domestic momentum. A modest recovery is projected for 2015, yet risks remain tilted to the downside as many economies struggle to find new engines of sustainable growth in an environment of stagnant commodity prices and more binding supply bottlenecks. This situation heightens the importance of preserving macroeconomic stability and implementing structural reforms to raise investment and productivity.

Growth in Latin America and the Caribbean continued to slow in early 2014, with data coming in even weaker than expected. External conditions played a role, as exports fell short of expectations in early 2014, and terms of trade deteriorated for some countries (Figure 2.6). However, domestic factors were also important in several economies as supply bottlenecks and policy uncertainty held back business confidence and investment. The resulting slowdown has increasingly spread to consumer spending amid signs that labor markets—although still quite tight—are starting to soften.

Overall, financial conditions are still supportive, with continued gains in equity prices and a narrowing of sovereign spreads since the beginning of the year, which have helped to reverse most of the financial market losses suffered after the mid-2013 turmoil. Domestic interest rates have also eased in most economies since April, but credit growth has continued to slow, notably in Brazil.

Growth in the region is expected to average 1.3 percent for 2014, the lowest rate since 2009 and 1.2 percentage points below the April 2014 WEO projection (Table 2.4). The downward revision partly reflects weaker-than-expected growth outturns for the first half of the year and domestic demand growth that is now expected to be slower than previously projected. Regional growth will pick up to 2.2 percent in 2015—again 0.7 percentage point weaker than previously projected—supported by improving exports and a recovery in investment. In particular, supply-side reforms undertaken by some countries, like Mexico, should start to pay off as an initial wait-and-see attitude among businesses gives way to higher capital spending.

- In Brazil, output contracted during the first half of the year. Full-year growth in 2014 is now projected at 0.3 percent. Weak competitiveness, low business confidence, and tighter financial conditions (with interest rate hikes through April 2014) have constrained investment, and the ongoing moderation in employment and credit growth has been weighing on consumption. A moderate pickup in activity is expected for 2015, with growth rising to 1.4 percent as the political uncertainty surrounding this year's presidential election dissipates. Inflation is expected to

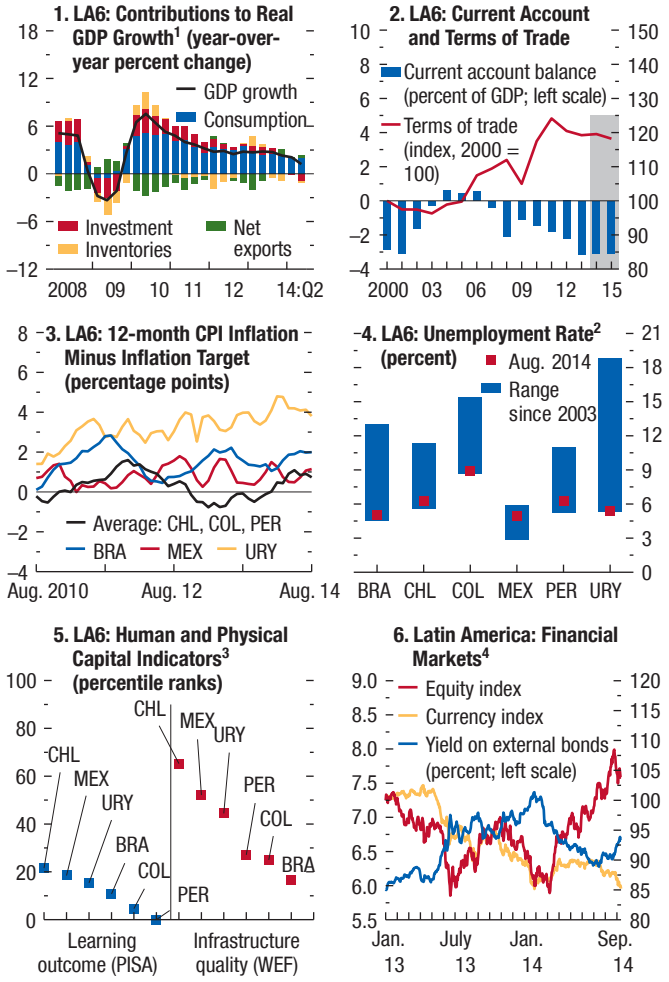
remain in the upper part of the target range, reflecting inflation persistence, binding supply constraints, and pent-up pressure from administered prices.

- Mexico's economy is gathering pace, although not fast enough to offset fully the weakness in early 2014 that was driven by lower external demand and slower-than-expected construction activity. Growth is projected to average 2.4 percent in 2014 and reach 3.5 percent in 2015, helped by a firmer U.S. recovery, a rebound in domestic construction activity, and the gradual dividends from the ongoing reform of the energy and telecommunications sectors.
- Sluggish growth in investment and durables consumption has resulted in an unexpected sharp slowdown in Chile and Peru this year. In Chile, recent monetary and fiscal easing and a weaker exchange rate should support a modest rebound. Peru's prospects should also improve as the impact of a temporary decline in metal production tapers off and supportive recent policy measures take effect. In Colombia, growth is expected to remain solid, led by strong construction activity.
- Argentina is projected to remain in recession in 2014–15, amid rising macroeconomic imbalances and uncertainties related to the lingering standoff with holdout creditors. Inflation remains elevated, and the gap between the official and the informal exchange rates has been widening again in recent months. In Venezuela, severe policy distortions are expected to continue to constrain production, resulting in a sharp drop in activity and an inflation rate that now exceeds 60 percent.
- Growth in Central America is projected to slow slightly to 3.8–3.9 percent in 2014–15 as country-specific domestic factors—including the closing of a large plant funded through foreign direct investment, which will affect export growth in Costa Rica—offset the positive effects from stronger U.S. activity.
- In the Caribbean, long-standing competitiveness problems, high public debt, and significant financial fragilities will result in low growth in much of the region.

Around this subdued outlook, risks remain tilted somewhat to the downside. Activity in the region's commodity exporters might weaken with negative external demand shocks, such as a sharper-than-expected investment slowdown in China. An abrupt rise in U.S. interest rates could prompt a replay of the mid-2013 financial turmoil, which would tighten financial conditions and depress confidence further.

Figure 2.6. Latin America and the Caribbean: Still Losing Speed

Economic activity across Latin America and the Caribbean has continued to slow, reflecting less supportive external conditions and domestic policy uncertainties. Even so, spare capacity remains limited, as evidenced by above-target inflation, still-tight labor markets, and persistent external current account deficits. Meanwhile, financial markets have recovered from their January 2014 trough but remain vulnerable to new shocks.



Sources: Bloomberg, L.P.; Haver Analytics; IMF, International Financial Statistics database; national authorities; Organisation for Economic Co-operation and Development, 2012 *Programme for International Student Assessment* (PISA); World Economic Forum (WEF), 2014–15 *Global Competitiveness Report;* and IMF staff estimates.

Note: CPI = consumer price index; LA6 = Brazil, Chile, Colombia, Mexico, Peru, Uruguay. Country group aggregates are weighted by purchasing-power-parity GDP as a share of group GDP unless noted otherwise. Data labels in the figure use International Organization for Standardization country codes.

[1]Seasonally adjusted. Inventories include statistical discrepancies.

[2]Seasonally adjusted. Latest observation for Brazil is for April 2014.

[3]The scale reflects the percentile distribution for each respective survey; higher scores reflect higher performance.

[4]Yield on external bonds is J.P. Morgan Emerging Markets Bond Index Plus yield for Latin America. Equity index is MSCI Emerging Markets Latin America Index equity local net total return index. Currency index is Bloomberg J.P. Morgan Latin America Currency Index. The equity and currency indices are rebased to January 2, 2013 = 100. Data are through September 24, 2014.

Table 2.4. Selected Western Hemisphere Economies: Real GDP, Consumer Prices, Current Account Balance, and Unemployment

(Annual percent change unless noted otherwise)

	Real GDP			Consumer Prices[1]			Current Account Balance[2]			Unemployment[3]		
		Projections			Projections			Projections			Projections	
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
North America	**2.1**	**2.2**	**3.1**	**1.7**	**2.2**	**2.3**	**–2.4**	**–2.5**	**–2.6**	. . .	. . .	. . .
United States	2.2	2.2	3.1	1.5	2.0	2.1	–2.4	–2.5	–2.6	7.4	6.3	5.9
Canada	2.0	2.3	2.4	1.0	1.9	2.0	–3.2	–2.7	–2.5	7.1	7.0	6.9
Mexico	1.1	2.4	3.5	3.8	3.9	3.6	–2.1	–1.9	–2.0	4.9	4.8	4.5
South America[4]	**3.2**	**0.7**	**1.6**	**8.5**	. . .	. . .	**–2.6**	**–2.5**	**–2.7**	. . .	. . .	. . .
Brazil	2.5	0.3	1.4	6.2	6.3	5.9	–3.6	–3.5	–3.6	5.4	5.5	6.1
Argentina[5,6]	2.9	–1.7	–1.5	10.6	. . .	. . .	–0.8	–0.8	–1.1	7.1	8.8	9.0
Colombia	4.7	4.8	4.5	2.0	2.8	2.6	–3.3	–3.9	–3.8	9.7	9.3	9.0
Venezuela	1.3	–3.0	–1.0	40.6	64.3	62.9	5.0	7.6	6.4	7.5	8.0	10.4
Chile	4.2	2.0	3.3	1.8	4.4	3.2	–3.4	–1.8	–1.4	5.9	6.6	7.0
Peru	5.8	3.6	5.1	2.8	3.2	2.3	–4.5	–5.2	–5.0	7.5	6.0	6.0
Ecuador	4.5	4.0	4.0	2.7	3.1	3.0	–1.3	–0.8	–2.4	4.7	5.0	5.0
Uruguay	4.4	2.8	2.8	8.6	8.8	8.3	–5.6	–6.5	–6.4	6.6	6.8	6.9
Bolivia	6.8	5.2	5.0	5.7	6.0	5.3	3.3	2.6	2.8	6.4	6.3	6.2
Paraguay	13.6	4.0	4.5	2.7	4.8	5.0	2.1	1.0	–1.1	5.4	5.5	5.5
Central America[7]	**4.2**	**3.8**	**3.9**	**4.2**	**3.6**	**4.2**	**–6.7**	**–6.3**	**–6.2**	. . .	. . .	. . .
Caribbean[8]	**3.2**	**3.8**	**3.3**	**5.1**	**4.1**	**4.4**	**–3.3**	**–2.7**	**–2.4**	. . .	. . .	. . .
Memorandum												
Latin America and the Caribbean[9]	2.7	1.3	2.2	7.1	. . .	. . .	–2.7	–2.5	–2.6	. . .	. . .	. . .
Excluding Argentina	2.7	1.7	2.6	6.7	8.0	7.5	–2.9	–2.7	–2.8	. . .	. . .	. . .
Eastern Caribbean Currency Union[10]	0.6	0.9	1.7	0.9	1.3	1.7	–16.7	–16.4	–16.3	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.

[1]Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Tables A6 and A7 in the Statistical Appendix.

[2]Percent of GDP.

[3]Percent. National definitions of unemployment may differ.

[4]Includes Guyana and Suriname. See note 6 regarding consumer prices.

[5]The data for Argentina are officially reported data as revised in May 2014. On February 1, 2013, the IMF issued a declaration of censure, and in December 2013 called on Argentina to implement specified actions to address the quality of its official GDP data according to a specified timetable. On June 6, 2014, the Executive Board recognized the implementation of the specified actions it had called for by end-March 2014 and the initial steps taken by the Argentine authorities to remedy the inaccurate provision of data. The Executive Board will review this issue again as per the calendar specified in December 2013 and in line with the procedures set forth in the Fund's legal framework.

[6]Consumer price data from January 2014 onwards reflect the new national CPI (IPCNu), which differs substantively from the preceding CPI (the CPI for the Greater Buenos Aires Area, CPI-GBA). Because of the differences in geographical coverage, weights, sampling, and methodology, the IPCNu data cannot be directly compared to the earlier CPI-GBA data. Because of this structural break in the data, staff forecasts for CPI inflation are not reported in the Fall 2014 *World Economic Outlook*. Following a declaration of censure by the IMF on February 1, 2013, the public release of a new national CPI by end-March 2014 was one of the specified actions in the IMF Executive Board's December 2013 decision calling on Argentina to address the quality of its official CPI data. On June 6, 2014, the Executive Board recognized the implementation of the specified actions it had called for by end-March 2014 and the initial steps taken by the Argentine authorities to remedy the inaccurate provision of data. The Executive Board will review this issue again as per the calendar specified in December 2013 and in line with the procedures set forth in the Fund's legal framework.

[7]Central America comprises Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.

[8]The Caribbean comprises Antigua and Barbuda, The Bahamas, Barbados, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago.

[9]Latin America and the Caribbean comprises Mexico and economies from the Caribbean, Central America, and South America. See also note 6.

[10]Eastern Caribbean Currency Union comprises Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines as well as Anguilla and Montserrat, which are not IMF members.

A sharp rise in oil prices would have an overall negative effect on the region's growth, despite benefiting a small number of net hydrocarbon exporters (notably Bolivia, Colombia, Ecuador, and Venezuela). Higher fuel prices could also intensify inflation or budgetary pressures (owing to large subsidies in some cases). Some Caribbean and Central American economies are particularly exposed, given large oil import needs and already-weak fiscal and external positions.

Over the medium term, another key risk for some economies in the region is a potential continuation of weak investment if underlying competitiveness and structural issues are not adequately addressed. The effects on growth would be compounded by a prolonged stagnation in advanced economies.

The priority across most of the region is to maintain macroeconomic stability while stepping up efforts to boost potential growth. Still-tight labor markets, above-target inflation, and persistent current account deficits all point to limited resource slack. This situation argues against considering further fiscal expansion, notably in countries with weak public finances. Achiev-

ing the targets set under existing fiscal frameworks through high-quality measures is critical to preserving the credibility of those frameworks, avoiding a further erosion of fiscal positions, and supporting disinflation.

Monetary policy, in turn, should be used to manage short-term fluctuations in growth. However, several central banks are currently facing a challenging combination of slowing growth and persistent price pressures, implying limited room to ease. Exchange rate flexibility remains essential not only to facilitate external adjustment, but also to discourage one-sided currency bets. Financial regulators should monitor private sector vulnerabilities closely and tighten prudential standards as necessary.

Structural reforms, to raise growth and its inclusiveness, should focus on creating the conditions for higher productivity and capital spending, including by addressing shortcomings in educational outcomes, infrastructure provision, and the business environment. Without such reforms, growth could well continue to disappoint relative to the high expectations created by the past decade and put at risk the important social advances the region has achieved.

Commonwealth of Independent States: Coping with Geopolitical Uncertainties

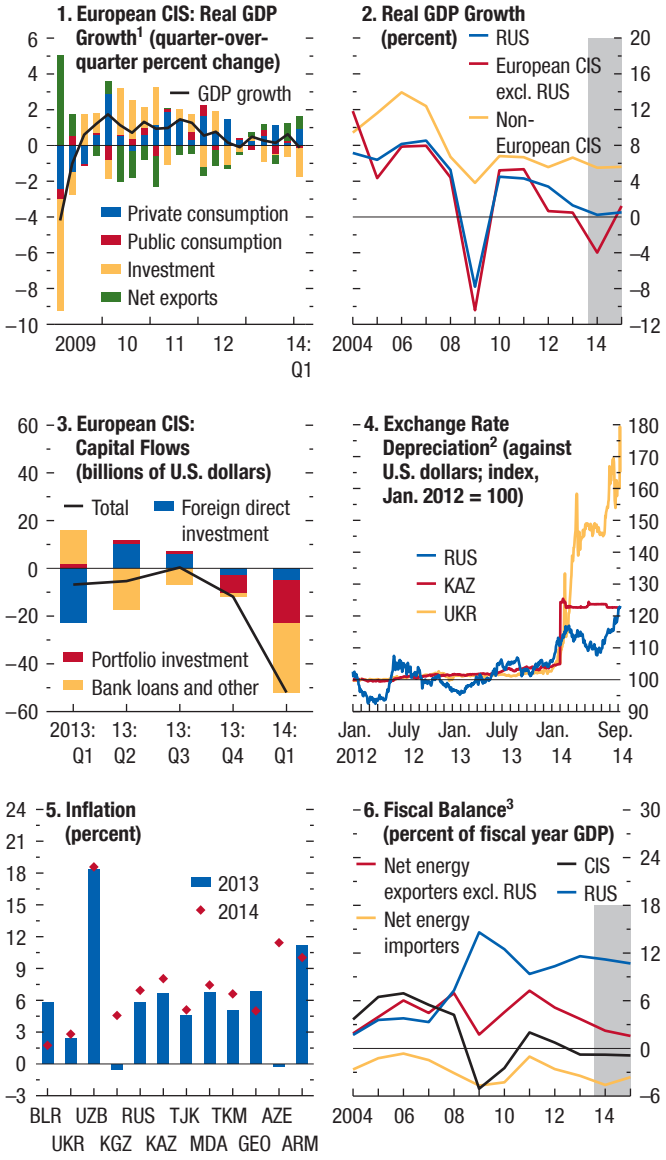
The Commonwealth of Independent States (CIS) economies are facing significant challenges given the fallout from ongoing geopolitical tensions, with investment contracting in Russia and conflict-hit Ukraine undergoing significant macroeconomic and structural adjustment. Policy priorities center on preserving macroeconomic stability in the near term and improving institutions and raising growth potential in the medium term.

The European CIS economies weakened sharply in the first half of 2014 (Figure 2.7). Investment dropped in Russia, where geopolitical tensions have further weakened already-subdued business confidence. Ukraine's crisis deepened further, with output contraction driven by falling industrial production and exports. Some economies in the Caucasus and Central Asia (CCA) slowed with weaker trade and remittance flows, given their economic ties to Russia.

Weaker activity has also reflected a worsening in financial conditions in the region: capital outflows intensified in Russia in the first half of 2014, putting pressure on the exchange rate and resulting in higher inflation, which induced policy rate hikes by the

Figure 2.7. Commonwealth of Independent States: Coping with Geopolitical Uncertainties

Growth in the Commonwealth of Independent States is subdued amid geopolitical tensions and a worsening of financial conditions. Inflation is forecast to remain high or even rise in the near term, in part reflecting pass-through from the recent exchange rate depreciations in many of the region's economies.



Sources: Bloomberg; Haver Analytics; and IMF staff estimates.
Note: European CIS = Belarus, Moldova, Russia, Ukraine; non-European CIS = Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan. Net energy exporters excl. Russia = Azerbaijan, Kazakhstan, Turkmenistan, Uzbekistan; net energy importers = Armenia, Belarus, Georgia, Kyrgyz Republic, Moldova, Tajikistan, Ukraine. Data labels in the figure use International Organization for Standardization country codes.
[1]Moldova is excluded because of data unavailability.
[2]Data through September 22, 2014.
[3]Non-oil primary deficit for Russia, overall balance for net energy importers, and general government net lending/borrowing for both Commonwealth of Independent States (CIS) and net energy exporters excluding Russia.

Table 2.5. Commonwealth of Independent States: Real GDP, Consumer Prices, Current Account Balance, and Unemployment

(Annual percent change unless noted otherwise)

	Real GDP			Consumer Prices[1]			Current Account Balance[2]			Unemployment[3]		
		Projections			Projections			Projections			Projections	
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
Commonwealth of Independent States	**2.2**	**0.8**	**1.6**	**6.4**	**7.9**	**7.9**	**0.6**	**1.9**	**2.1**	. . .	. . .	. . .
Net Energy Exporters	**2.3**	**1.3**	**1.5**	**6.7**	**7.3**	**7.1**	**1.8**	**2.7**	**2.8**	. . .	. . .	. . .
Russia	1.3	0.2	0.5	6.8	7.4	7.3	1.6	2.7	3.1	5.5	5.6	6.5
Kazakhstan	6.0	4.6	4.7	5.8	6.9	6.1	–0.1	0.3	–0.7	5.2	5.2	5.2
Azerbaijan	5.8	4.5	4.3	2.4	2.8	3.0	17.0	14.6	10.4	6.0	6.0	6.0
Uzbekistan	8.0	7.0	6.5	11.2	10.0	11.2	0.1	0.1	0.5	. . .	. . .	. . .
Turkmenistan[4]	10.2	10.1	11.5	6.8	5.0	5.5	–2.9	–1.9	–0.3	. . .	. . .	. . .
Net Energy Importers	**1.2**	**–2.7**	**1.8**	**4.7**	**12.1**	**13.2**	**–9.0**	**–5.4**	**–5.1**	. . .	. . .	. . .
Ukraine	0.0	–6.5	1.0	–0.3	11.4	14.0	–9.2	–2.5	–2.5	7.2	10.0	9.8
Belarus	0.9	0.9	1.5	18.3	18.6	16.9	–10.1	–8.5	–7.4	0.5	0.5	0.5
Georgia[4]	3.2	5.0	5.0	–0.5	4.6	4.9	–5.9	–8.4	–7.9	16.1	. . .	. . .
Armenia	3.5	3.2	3.5	5.8	1.8	3.8	–8.0	–7.7	–7.3	18.5	18.0	17.9
Tajikistan	7.4	6.0	6.0	5.0	6.6	8.3	–1.4	–4.7	–3.6	. . .	. . .	. . .
Kyrgyz Republic	10.5	4.1	4.9	6.6	8.0	8.9	–14.8	–14.2	–14.8	7.6	7.6	7.5
Moldova	8.9	1.8	3.5	4.6	5.1	5.7	–4.8	–6.2	–7.3	5.1	6.0	5.8
Memorandum												
Caucasus and Central Asia[5]	6.6	5.5	5.6	6.0	6.4	6.4	1.9	1.6	0.7	. . .	. . .	. . .
Low-Income CIS Countries[6]	7.2	5.9	5.8	8.0	8.0	9.1	–3.1	–3.6	–3.3	. . .	. . .	. . .
Net Energy Exporters Excluding Russia	6.8	5.6	5.7	6.3	6.5	6.5	2.8	2.7	1.6	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.

[1]Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Table A7 in the Statistical Appendix.

[2]Percent of GDP.

[3]Percent. National definitions of unemployment may differ.

[4]Georgia and Turkmenistan, which are not members of the Commonwealth of Independent States (CIS), are included in this group for reasons of geography and similarity in economic structure.

[5]Caucasus and Central Asia comprises Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan.

[6]Low-Income CIS Countries comprise Armenia, Georgia, Kyrgyz Republic, Moldova, Tajikistan, and Uzbekistan.

central bank. Since February of this year, Ukraine has experienced official reserve losses and exchange rate depreciation. With significant deposit withdrawals and loan quality deterioration, financial sector stress has risen. The depreciation of the Russian ruble has also exerted exchange rate pressure on the Kyrgyz Republic and Tajikistan, whereas in Kazakhstan, the currency was preemptively devalued.

Growth is projected to decline from 2.2 percent in 2013 to 0.8 percent this year, before recovering to 1.6 percent in 2015 as geopolitical tensions subside (Table 2.5). The forecast is significantly weaker for both years, compared with that in the April 2014 WEO, reflecting the ongoing crises and regional spillovers given Russia's role as a key regional trading partner.[3]

- Russia's GDP is projected to remain flat in 2014 and recover modestly to grow by 0.5 percent in 2015 as investment contraction moderates and non-energy exports strengthen.
- In Ukraine, activity is projected to contract sharply this year, reflecting production disruptions from the ongoing conflict and the difficult macroeconomic situation.
- With weak external demand from Russia and structural limitations, Belarus's growth will remain subdued. Growth will also be modest in Moldova, owing to a slowdown in agriculture and spillovers from weaker activity in its main trading partners (European Union, Russia, Ukraine).
- In the CCA's oil and gas exporters, growth will decline in 2014–15 as high energy prices, large policy buffers, and diversified export markets only partly offset the effects of Russia's slowdown. Growth will decline in Kazakhstan in 2014–15, reflecting both weaker external demand and lower investor confidence due to increased regional tensions.

[3]Georgia and Turkmenistan are not members of the CIS, but they are included in this group because of their geographic proximity and similarity in economic structure.

- Economic activity in most oil-importing economies in the CCA (Armenia, Kyrgyz Republic, Tajikistan) will also slow, given their close remittance and trade linkages with Russia and weakened investor sentiment, as well as relatively limited policy space.

Despite lower growth and declining food prices, average inflation in the region is forecast to rise from 6.4 percent in 2013 to 7.9 percent in 2014, reflecting pass-through from recent exchange rate depreciations. In Russia, inflation will likely rise above the target; in Belarus and Ukraine it is expected to exceed 10 percent. The February devaluation of the Kazakhstani tenge is expected to raise inflation but maintain it within the target range. In Uzbekistan, inflation will likely remain in the double digits, given continuing increases in administered prices and nominal depreciation.

Risks to growth are largely to the downside. An escalation of geopolitical tensions between Russia and Ukraine, resulting in a tightening of sanctions against Russia, could entail a serious setback for the region. Even without further escalation, prolonged uncertainty could erode confidence, accelerate capital outflows, put pressure on the exchange rate, and further weaken investment and growth in Russia, with adverse spillovers to the rest of the CIS via lower imports, remittances, and foreign direct investment.

With higher risks and worsening economic conditions, a key priority is to preserve macroeconomic stability. For Russia, monetary and financial policies should aim to anchor inflation expectations given recent depreciation, while recent steps to increase exchange rate flexibility should continue in order to facilitate adjustment to shocks, including from oil prices. Under an IMF-supported program, Ukraine is implementing economic and structural reforms to address long-standing structural weaknesses and macroeconomic imbalances. For Belarus, policies to halt wage increases and reduce directed lending and foreign exchange intervention would help safeguard macroeconomic stability. In Moldova, weaknesses in the banking system need to be addressed to ensure the stability of the financial sector.

In the CCA, monetary policies should be tightened if inflation pressure persists. Although a pause in fiscal consolidation is justifiable with slowing growth prospects in some economies (Armenia, Kazakhstan), gradual consolidation should be pursued over the medium term to place public debt on a sustainable path. CCA economies also need structural reforms for strong and inclusive medium-term growth, specifically through improving the business climate and governance and increasing global and regional trade integration.

The Middle East, North Africa, Afghanistan, and Pakistan: Fragile Recovery

Economic activity in the Middle East, North Africa, Afghanistan, and Pakistan (MENAP) region is projected to pick up in 2014–15, but the recovery will remain fragile. Political transitions in many countries and security problems, including from the recently intensified conflict in Iraq, pose downside risks. For many countries, fiscal consolidation is needed to rebuild buffers against unexpected shocks and preserve wealth for future generations. Achieving sustained, strong growth over the medium term will require structural reforms.

Oil-Exporting Economies

Activity in the Gulf Cooperation Council (GCC) economies accelerated slightly in the second half of 2013 and into 2014, driven by higher oil production and government spending. By contrast, although the Islamic Republic of Iran is showing signs of recovery, the pace of activity deteriorated in the non-GCC oil exporters, where security conditions remain challenging. The conflict in northern Iraq has started to affect non-oil growth in that country. Although most oil production is in the country's south and oil output levels have not been materially affected, the departure of skilled personnel will limit Iraq's ability to expand or, possibly, even maintain oil production. Ongoing political turmoil and security issues have disrupted oil production in Libya and undermined oil production in Yemen.

Average growth for the oil exporters is projected to edge up from 2.2 percent in 2013 to 2.5 percent in 2014 and to 3.9 percent in 2015. The forecast is 0.9 percentage point weaker for 2014–15, compared with that in the April 2014 WEO (Table 2.6):

- In the GCC countries, growth is projected to average about 4½ percent in 2014–15, with non-oil GDP growing by 6 percent and oil GDP rising by ½ percent. The latter mostly reflects the accommodation of oil supply disruptions elsewhere in a context of modest increases in global oil demand and rising supply in North America.

Table 2.6. Selected Middle East and North African Economies: Real GDP, Consumer Prices, Current Account Balance, and Unemployment

(Annual percent change unless noted otherwise)

	Real GDP			Consumer Prices[1]			Current Account Balance[2]			Unemployment[3]		
		Projections			Projections			Projections			Projections	
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
Middle East and North Africa	**2.3**	**2.6**	**3.8**	**9.2**	**7.5**	**8.0**	**10.9**	**8.6**	**6.8**	. . .	. . .	. . .
Oil Exporters[4]	**2.2**	**2.5**	**3.9**	**9.5**	**6.8**	**7.3**	**14.8**	**11.6**	**9.8**	. . .	. . .	. . .
Saudi Arabia	4.0	4.6	4.5	3.5	2.9	3.2	17.7	15.1	12.4	5.5	. . .	. . .
Iran	–1.9	1.5	2.2	34.7	19.8	20.0	7.5	4.2	1.7	10.4	11.6	12.2
United Arab Emirates	5.2	4.3	4.5	1.1	2.2	2.5	16.1	11.1	11.8	. . .	. . .	. . .
Algeria	2.8	3.8	4.0	3.3	3.2	4.0	0.4	–3.0	–2.9	9.8	10.8	11.3
Iraq	4.2	–2.7	1.5	1.9	4.7	6.2	–0.8	3.0	2.4	. . .	. . .	. . .
Qatar	6.5	6.5	7.7	3.1	3.4	3.5	30.9	27.1	23.2	. . .	. . .	. . .
Kuwait	–0.4	1.4	1.8	2.7	3.0	3.5	40.5	40.8	38.6	2.1	2.1	2.1
Oil Importers[5]	**2.6**	**2.6**	**3.7**	**8.3**	**10.0**	**10.6**	**–6.2**	**–4.7**	**–5.9**	. . .	. . .	. . .
Egypt	2.1	2.2	3.5	6.9	10.1	13.5	–2.7	–0.4	–4.0	13.0	13.4	13.9
Morocco	4.4	3.5	4.7	1.9	1.1	2.0	–7.6	–6.8	–5.8	9.2	9.1	9.0
Sudan	3.3	3.0	3.7	36.5	38.0	20.6	–8.6	–6.3	–6.3	14.8	13.6	13.3
Tunisia	2.3	2.8	3.7	6.1	5.7	5.0	–8.4	–7.7	–6.6	15.3	15.3	15.0
Jordan	2.9	3.5	4.0	5.6	3.0	2.6	–9.8	–10.0	–6.9	12.2	12.2	12.2
Lebanon	1.5	1.8	2.5	3.2	3.5	4.0	–12.9	–12.7	–12.3	. . .	. . .	. . .
Memorandum												
Middle East, North Africa, Afghanistan, and Pakistan	2.5	2.7	3.9	9.0	7.6	8.0	10.0	7.8	6.2	. . .	. . .	. . .
Pakistan	3.7	4.1	4.3	7.4	8.6	8.0	–1.1	–1.2	–1.3	6.2	6.7	6.5
Afghanistan	3.6	3.2	4.5	7.4	6.1	5.5	4.3	4.8	0.1	. . .	. . .	. . .
Israel[6]	3.2	2.5	2.8	1.5	0.8	1.8	2.0	1.9	2.0	6.3	6.0	6.0
Maghreb[7]	1.1	1.3	5.4	3.2	3.1	3.9	–0.8	–7.4	–6.8	. . .	. . .	. . .
Mashreq[8]	2.1	2.3	3.5	6.5	9.1	12.0	–4.7	–3.0	–5.3	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Tables A6 and A7 in the Statistical Appendix.
[2]Percent of GDP.
[3]Percent. National definitions of unemployment may differ.
[4]Includes Bahrain, Libya, Oman, and Yemen.
[5]Includes Djibouti and Mauritania. Excludes Syria because of the uncertain political situation.
[6]Israel, which is not a member of the region, is included for reasons of geography. Note that Israel is not included in the regional aggregates.
[7]The Maghreb comprises Algeria, Libya, Mauritania, Morocco, and Tunisia.
[8]The Mashreq comprises Egypt, Jordan, and Lebanon. Syria is excluded because of the uncertain political situation.

- In the non-GCC oil exporters, growth is forecast to average only ¼ percent in 2014 given recent political shocks and deteriorating security. Growth is projected to recover to 3 percent in 2015, assuming a rebound in oil production in Iraq, Libya, and Yemen. These assumptions are, however, subject to significant uncertainty.

Inflation is expected to remain contained in most countries, particularly in the GCC, in light of softening global food prices and pegged exchange rates. Inflation will remain high in many non-GCC countries, however, reflecting production disruptions and other idiosyncratic factors, such as a recent fuel price increase in Yemen.

The major risk to oil exporters arises from unexpected oil market developments. An immediate risk relates to disruptions to oil production (relative to baseline projections) owing to escalating geopolitical tensions, particularly in Iraq, Libya, and Yemen. Activity in these countries could contract in response to such disruptions, should they materialize. As discussed in Chapter 1, such disruptions could also lead to higher oil prices and lower global growth, but they could boost oil revenues for other oil exporters in the region. There are also risks that oil prices could turn out to be lower than expected because of increased oil supply or lower demand. On the supply side, Libya's oil production could recover earlier than expected, the sanctions-related restrictions on the Islamic Republic of Iran's oil exports could be relaxed, or U.S. oil output could continue to surprise on the upside. On the demand side, energy demand in emerging markets could be weaker if downside risks to activity in these

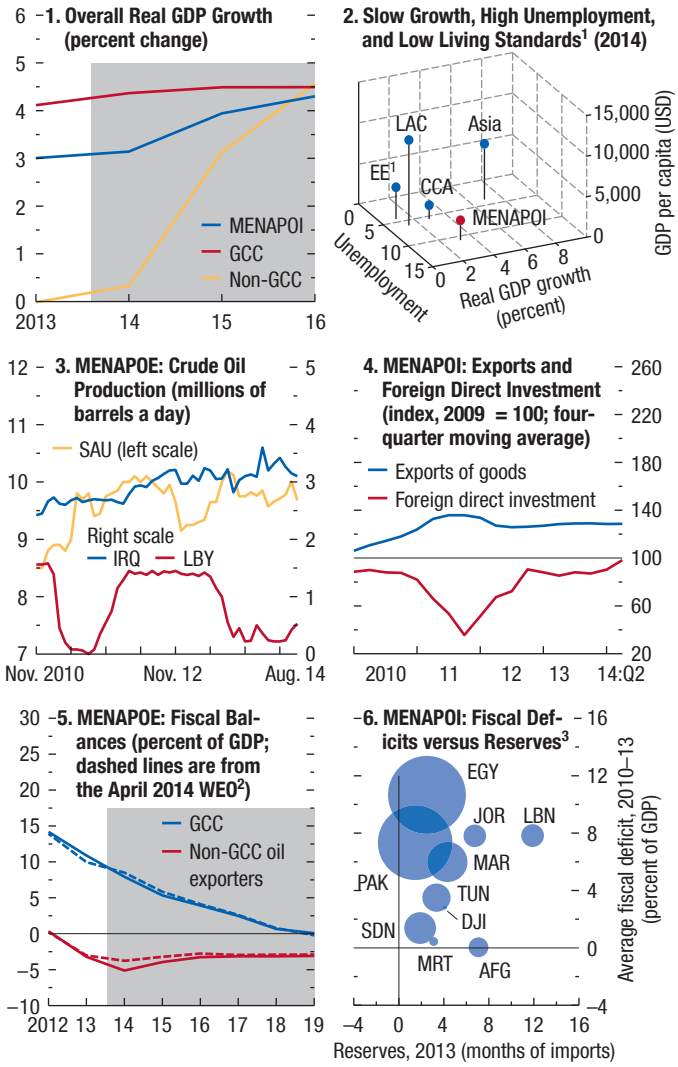
economies should materialize. Protracted stagnation in advanced economies (see Figure 2.1) would have similar effects.

A key priority for most oil-exporting economies in the region is to shore up weakening fiscal balances, which reflect stalled progress in withdrawing fiscal stimulus implemented by the GCC countries during the Great Recession and oil production shocks in the non-GCC countries. The overall fiscal balance is projected to decline from 2 percent of GDP in 2014 to 1 percent in 2015. Fiscal surpluses are too low in most GCC countries to enable them to save an equitable share of oil wealth for future generations and are expected to vanish by 2017 (Figure 2.8). All non-GCC oil exporters are running fiscal deficits despite reliance on nonrenewable resources as the main revenue source. Fiscal consolidation is thus needed in most oil-exporting countries in the region over the medium term, to build buffers against future shocks and ensure that future generations can also benefit from their oil wealth. However, in some non-GCC countries, the need for consolidation is more immediate, given weaker fiscal positions after recent oil production declines. Fiscal consolidation should importantly include phasing out costly and inefficient energy subsidies and replacing them with targeted social safety nets, as well as raising non-oil revenue. These efforts should be supported with strengthened budget processes to control spending.

Structural reforms can help diversify the region's economies away from oil, raise productivity, and encourage firms in the region to expand into the tradables sector. Continued effort is needed to promote GCC nationals' employment in the private sector. Non-GCC countries urgently need to improve security and the business environment.

Figure 2.8. The Middle East, North Africa, Afghanistan, and Pakistan: Fragile Recovery

Despite strong activity in the GCC economies, the recovery in the MENAP region as a whole has been fragile, owing to ongoing political transitions and recently intensified conflicts. Fiscal balances in oil exporters have weakened and are projected to deteriorate over the near and medium term. In oil importers, external and fiscal vulnerabilities remain significant.



Sources: Haver Analytics; International Energy Agency; national authorities; and IMF staff estimates.
Note: CCA = Caucasus and Central Asia; EE = Emerging Europe excluding Russia and Ukraine; Gulf Cooperation Council (GCC) = Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates; LAC = Latin America and the Caribbean; Middle East, North Africa, Afghanistan, and Pakistan (MENAP) oil exporters (MENAPOE) = Algeria, Bahrain, Iran, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia, United Arab Emirates, Yemen; MENAP oil importers (MENAPOI) = Afghanistan, Djibouti, Egypt, Jordan, Lebanon, Mauritania, Morocco, Pakistan, Sudan, Syria, Tunisia. Data labels in the figure use International Organization for Standardization country codes. Data from 2011 onward exclude Syria.
[1]The vertical axis shows each region's 2014 GDP per capita in U.S. dollars.
[2]April 2014 WEO data have been revised using the current purchasing-power-parity (PPP) GDP weighted according to the International Comparison Program.
[3]The size of each country's bubble is relative to its 2013 PPP GDP.

Oil-Importing Economies

Economic activity in the MENAP oil importers has remained lackluster given deep-rooted inefficiencies in economic structures, regional conflicts, and continued sociopolitical tensions. However, confidence has begun to improve, and exports are picking up with higher demand from trading partners. Some structural reforms are slowly nurturing competitiveness and foreign direct investment through lower production costs.

Growth in MENAP oil importers is projected to rise from 2.6 percent in 2014 to 3.7 percent in 2015—

broadly similar to the April 2014 WEO projections for 2014, and 0.5 percentage point weaker for 2015. Growth is expected to be driven by rising external demand from Europe and the GCC countries and some recovery in domestic demand as confidence improves and political transitions evolve. However, growth is still too weak to tackle persistently high unemployment, especially among the young, and widespread socioeconomic inequities.

- In Morocco, the ongoing implementation of structural reforms is beginning to bear fruit, and growth is expected to pick up in 2015. Private investment is expected to strengthen with increased confidence, rising tourism receipts, and stronger export performance.
- Growth is also strengthening in Pakistan, reflecting in part the positive effects of energy reforms, although large fiscal and external vulnerabilities still remain.
- In Tunisia, progress in the political transition is leading to increased donor support. However, growth remains timid, and rising external imbalances have continued to put pressure on the exchange rate. Important steps are being taken to reduce banking sector fragilities, a key constraint on stronger and more inclusive growth.
- Egypt's presidential election and substantial GCC financing have restored some confidence and stabilized growth. However, continued reforms and additional external financing are critical to securing macroeconomic stability, generating inclusive growth, and creating jobs.
- In Jordan, recent reforms have stabilized growth and macroeconomic balances, but prospects are weighed down by adverse regional spillovers. Beyond the crisis in Syria, spotty gas flows from Egypt have required expensive alternative-energy imports. An escalated conflict in Iraq could jeopardize trade and confidence.
- In Lebanon, the political impasse and spillovers from the Syrian conflict have dampened confidence and activity. The presence of a larger number of refugees (one-quarter of the population) is affecting security, fueling high unemployment and poverty, and stressing already-weak public finances.

The recovery is vulnerable to setbacks in political transitions and intensified social and security tensions, including through their effects on oil prices, refugee movements, and trade disruption. Lower-than-expected growth in emerging markets, Europe, or the GCC could slow tourism, exports, and remittances. Countries with limited exchange rate flexibility could face higher domestic interest rates when global monetary conditions tighten, although limited integration in international capital markets provides some monetary policy autonomy.

Structural reforms will help raise medium-term growth, create jobs, and improve living standards and equity. Business climate and governance reforms, better access to finance, and greater trade integration (particularly in higher-value-added products) are critical to lower firms' operating costs and increase employment opportunities. Labor market and education system reforms will help raise human capital and productivity—for example, by better aligning education and vocational training with private sector needs. Domestic reform efforts can also be bolstered by the international community through financing, access to key export markets, technical assistance, and policy advice.

Macroeconomic and financial policies should support the growth- and job-enhancing policy agenda. Fiscal consolidation is needed to instill confidence and restore public debt sustainability over the medium term. But it can be done at a measured pace, where financing allows. The ongoing reorientation of spending toward well-targeted social safety nets, infrastructure, education, and health care—all key to raising growth and jobs—could be supported through enhanced implementation capacity and restrained increases in spending on public sector wages. As growth improves, equity and business confidence can be boosted by broadening the tax base, increasing income tax progressivity, implementing subsidy reforms, and expanding targeted social safety nets.

Sub-Saharan Africa: Maintaining Speed

Economic activity in sub-Saharan Africa has continued to grow robustly—on the back of supportive external demand conditions and strong growth in public and private investment—and the outlook is expected to remain favorable for the lion's share of the region's countries. However, beyond the severe humanitarian implications, the ongoing outbreak of the Ebola virus is exacting a heavy economic toll in Guinea, Liberia, and Sierra Leone. Domestic risks also include a rapid buildup of fiscal vulnerabilities in a few countries and an intensification of security threats. Those risks could be compounded if global financing conditions were to tighten faster than anticipated and if emerging markets should slow down markedly, especially

Table 2.7. Selected Sub-Saharan African Economies: Real GDP, Consumer Prices, Current Account Balance, and Unemployment

(Annual percent change unless noted otherwise)

	Real GDP			Consumer Prices[1]			Current Account Balance[2]			Unemployment[3]		
		Projections			Projections			Projections			Projections	
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
Sub-Saharan Africa	**5.1**	**5.1**	**5.8**	**6.6**	**6.7**	**7.0**	**–2.4**	**–2.6**	**–3.2**	. . .	. . .	. . .
Oil Exporters[4]	**5.7**	**6.1**	**7.0**	**7.8**	**7.6**	**8.1**	**3.7**	**3.3**	**1.8**	. . .	. . .	. . .
Nigeria	5.4	7.0	7.3	8.5	8.3	8.7	4.0	3.7	2.2	. . .	. . .	. . .
Angola	6.8	3.9	5.9	8.8	7.3	7.3	5.5	4.1	2.0	. . .	. . .	. . .
Gabon	5.6	5.1	5.4	0.5	4.7	2.5	12.1	12.2	6.0	. . .	. . .	. . .
Chad	3.9	9.6	6.7	0.2	2.8	3.1	–9.5	–7.2	–7.1	. . .	. . .	. . .
Republic of Congo	3.3	6.0	7.5	4.6	2.2	2.3	–3.4	–3.2	–3.2	. . .	. . .	. . .
Middle-Income Countries[5]	**3.5**	**3.0**	**3.6**	**5.7**	**6.4**	**6.3**	**–5.4**	**–5.2**	**–5.0**	. . .	. . .	. . .
South Africa	1.9	1.4	2.3	5.8	6.3	5.8	–5.8	–5.7	–5.6	24.7	25.2	25.0
Ghana	7.1	4.5	4.7	11.7	15.7	16.8	–11.9	–9.9	–8.5	. . .	. . .	. . .
Côte d'Ivoire	8.7	8.5	7.9	2.6	0.6	2.6	–2.1	–3.0	–3.1	. . .	. . .	. . .
Cameroon	5.5	5.1	5.2	2.1	3.2	2.6	–3.7	–3.5	–3.4	. . .	. . .	. . .
Zambia	6.7	6.5	7.2	7.0	8.0	7.8	0.7	1.9	2.3	. . .	. . .	. . .
Senegal	3.5	4.5	4.6	0.7	–0.5	1.5	–10.4	–9.8	–9.4	. . .	. . .	. . .
Low-Income Countries[6]	**6.1**	**6.3**	**6.6**	**5.7**	**5.7**	**5.9**	**–11.7**	**–12.4**	**–12.3**	. . .	. . .	. . .
Ethiopia	9.7	8.2	8.5	8.1	7.7	9.1	–6.0	–7.1	–7.3	. . .	. . .	. . .
Kenya	4.6	5.3	6.2	5.7	7.3	6.0	–8.7	–8.0	–8.1	. . .	. . .	. . .
Tanzania	7.0	7.2	7.0	7.9	5.9	4.9	–13.8	–13.7	–13.1	. . .	. . .	. . .
Uganda	5.8	5.9	6.3	5.0	5.5	5.9	–8.5	–10.4	–10.5	. . .	. . .	. . .
Madagascar	2.4	3.0	4.0	5.8	7.3	6.6	–5.4	–4.3	–4.0	. . .	. . .	. . .
Democratic Republic of the Congo	8.5	8.6	8.5	0.8	2.4	4.1	–10.2	–9.3	–9.2	. . .	. . .	. . .
Memorandum												
Sub-Saharan Africa Excluding South Sudan	4.9	5.2	5.7	6.6	6.8	6.9	–2.5	–2.6	–3.2	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.

[1]Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Table A7 in the Statistical Appendix.

[2]Percent of GDP.

[3]Percent. National definitions of unemployment may differ.

[4]Includes Equatorial Guinea and South Sudan.

[5]Includes Botswana, Cabo Verde, Lesotho, Mauritius, Namibia, Seychelles, and Swaziland.

[6]Includes Benin, Burkina Faso, Burundi, Central African Republic, Comoros, Eritrea, The Gambia, Guinea, Guinea-Bissau, Liberia, Malawi, Mali, Mozambique, Niger, Rwanda, São Tomé and Príncipe, Sierra Leone, Togo, and Zimbabwe.

in countries that depend on private external financing or on exports of natural resources. Consequently, for the vast majority of countries, sustaining high growth to foster employment creation and inclusive growth while preserving macroeconomic stability remains the key consideration. In the few countries where macroeconomic imbalances have emerged, they need to be addressed.

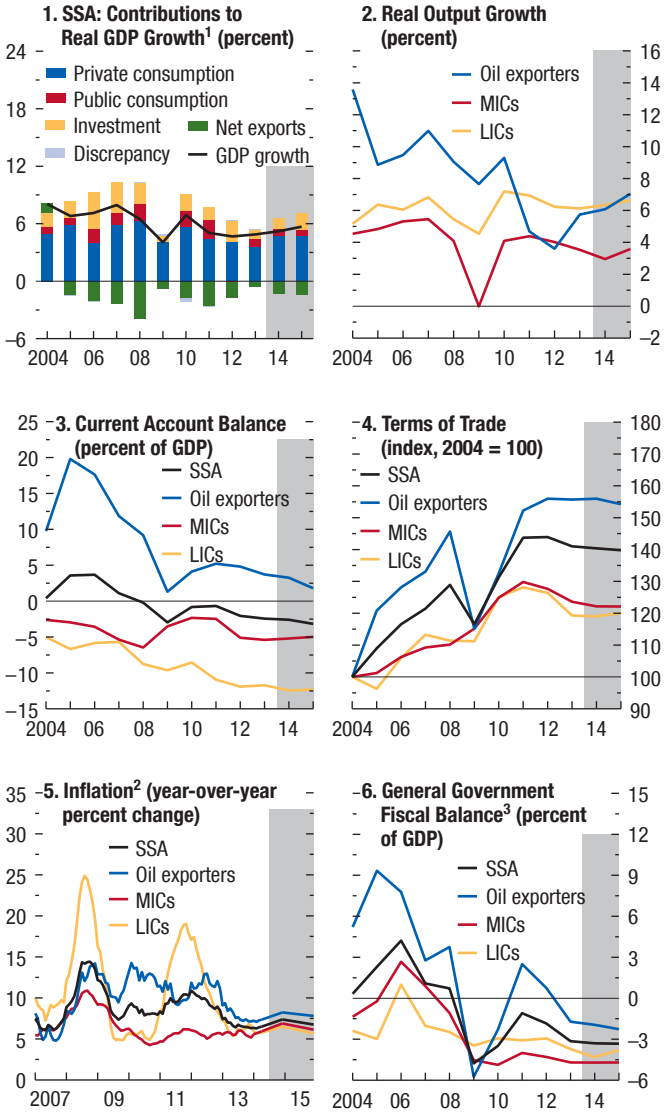
Growth in sub-Saharan Africa was buoyant at 5.1 percent in 2013, and activity remained strong in the first half of 2014. This was driven mainly by domestic demand, both from high investment outlays and strong private consumption—especially in low-income countries—but export growth has also remained strong. Continued solid public and private investment spending resulted from infrastructure projects and investment in mining and energy production in numerous countries; agricultural production recovered in some others.

Recent revisions to national accounts data suggest that some of the region's economies (Ghana, Nigeria) are far more diversified than previously thought—Nigeria's 2013 nominal GDP level has been revised upward by more than 80 percent, making it the largest economy in the region, with industry and services sectors representing a much larger share of the economy than previously estimated.

In many economies in the region, growth has also been supported by a further easing in external financial conditions since April 2014. Some economies have been able to tap capital markets at a heightened pace, and recent sovereign bond issuances in the Eurodollar market were largely oversubscribed, including maiden issuances in Kenya and Côte d'Ivoire. In fact, the "risk-

Figure 2.9. Sub-Saharan Africa: Maintaining Speed

Growth has remained strong in most economies of sub-Saharan Africa, driven by strong investment outlays and solid private consumption. However, fiscal vulnerabilities have been building up in a few countries.



Sources: Haver Analytics; IMF, International Financial Statistics database; and IMF staff estimates.
Note: LIC = low-income country (SSA); MIC = middle-income country (SSA); SSA = sub-Saharan Africa. Oil exporters refer only to SSA oil exporters. See Table 2.7 for country groupings and the Statistical Appendix for country group aggregation methodology.
[1]Liberia, South Sudan, and Zimbabwe are excluded because of data limitations.
[2]Because of data limitations, Eritrea is excluded from LICs, Zimbabwe from LICs prior to December 2009, and South Sudan from oil exporters prior to June 2012.
[3]General government includes the central government, state governments, local governments, and social security funds.

on" mode has been broad based, with little discrimination based on domestic policies. Sovereign spreads have reverted to post-global-crisis lows across the board, regardless of countries' fiscal positions—with the notable exception of those in Ghana. In this environment, currencies have generally stabilized after having weakened in 2013—except in Ghana—and some economies (in particular, Nigeria) that had used external reserves to defend the external value of their currencies in 2013 have been able to replenish these reserves. The Ghanaian cedi, however, has suffered from continued downward pressure, largely reflecting domestic policy slippages. Pressures on the Zambian kwacha were also substantial until May 2014, but the currency has since then recovered some of the lost ground.

This overall positive outlook is, however, overshadowed by the dire situation in Guinea, Liberia, and Sierra Leone, where the current Ebola outbreak is exacting a heavy human and economic toll. In addition, in contrast to robust activity in much of the region, growth in South Africa has remained lackluster, dragged down by protracted strikes, low business confidence, and tight electricity supply. The significant depreciation of the rand has so far resulted in only a limited amount of much-needed external adjustment.

The region's growth is projected to accelerate further, rising from 5.1 percent in 2014 to 5.8 percent in 2015 (Table 2.7, Figure 2.9). The forecast is slightly weaker for 2014 compared to that in the April 2014 WEO, but slightly stronger for 2015. In many countries, activity will continue to benefit from the boost generated by infrastructure projects, the expansion of productive capacity, buoyant services sectors, a rebound in agricultural production, or combinations of those factors. In some middle-income countries and oil exporters, however, the picture is more mixed. In South Africa, a muted recovery is expected to take hold only in 2015, as improving labor relations allow inventory rebuilding and gradually stronger net exports to offset the drag from financial tightening.

Homegrown factors pose risks to the outlook for the region. Should the Ebola outbreak become more protracted or spread to more countries, it would have dramatic consequences for economic activity in the west African region. The security situation in several parts of sub-Saharan Africa remains fragile, including in the Central African Republic and South Sudan. Finally, the fiscal position is weakening in a few countries on the back of rising current expenditures.

On the external front, the region has become more sensitive to external real and financial shocks, given its increasing global linkages. Thus, a sudden reversal in risk premiums and volatility compression in global financial markets could severely affect sub-Saharan African countries reliant on external market funding. Lower growth in emerging market economies—notably China—also poses a protracted risk for the region, but especially for countries heavily reliant on commodity exports. Sharply higher oil prices would benefit the region's oil exporters but negatively affect its oil importers, especially since energy constraints faced by most countries in the region are related to a high cost of electricity, as generation often relies on fuel-based power plants.

For the vast majority of the countries in the region, sustaining high growth remains the key consideration to foster employment creation and inclusive growth. Policies should continue to emphasize growth-enhancing measures, including by boosting domestic revenue mobilization, supporting much-needed infrastructure investment, and improving the business climate. But as policymakers pursue development objectives, it will be important to pay heed to macroeconomic constraints, avoid overreliance on volatile capital flows, and prevent a permanent widening of the fiscal position. In the few countries where macroeconomic imbalances have become a source of concern, adjustment is necessary but will need to avoid adverse consequences for the poor and vulnerable groups.

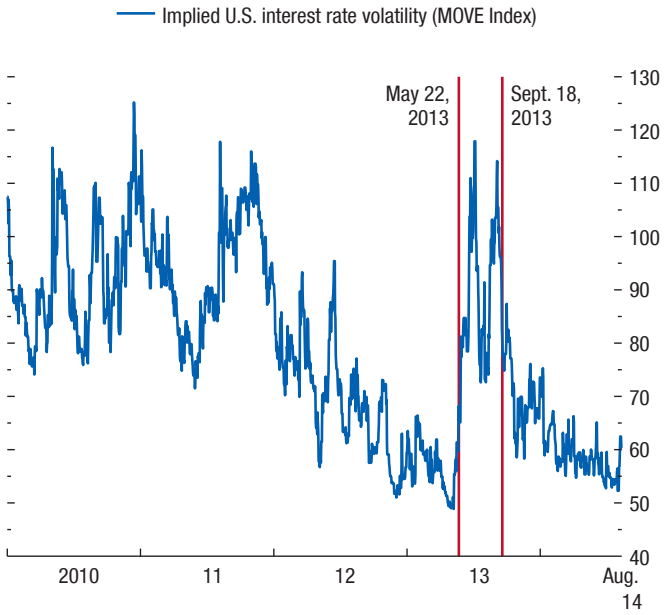
Spillover Feature: Underlying Drivers of U.S. Yields Matter for Spillovers

The U.S. tapering announcement in May 2013 triggered a sharp repricing of risk and was followed by unusually high market volatility (Figure 2.SF.1). Yields in other advanced economies increased significantly, and emerging market economies were hit hard: local bond yields increased, equity prices declined, and currencies depreciated. The market turbulence that followed the taper talk was likely the side effect of an unanticipated policy turning point amid one-sided market positioning accompanied by very low implied volatility in option prices. Such market positioning has reemerged during recent months, but in a context in which the liftoff from the zero lower bound is more imminent than a year ago.

Given the prospects for tightening financial conditions, it is important, from a spillover perspective, to know what is driving the tightening, because this determines the nature of the spillover. Thus, this Spillover Feature examines the underlying drivers of U.S. yields, their recent behavior, and potential spillovers, building on the *2014 Spillover Report* (IMF 2014).[1] The analysis proceeds in two steps: (1) it separates the key drivers of U.S. yields into "real" and "money" shocks using a vector autoregression (VAR) with sign restrictions, and (2) it explores the implications of spillovers from the two shocks for different country groupings, using panel VARs. The intuition behind the identification scheme is simple: while positive (tightening) money shocks push yields up and depress stock prices, positive real shocks (better prospects/more risk appetite) increase both yields and stock prices.

The analysis suggests that spillover effects are different depending on the drivers of U.S. yields and recipient countries' economic characteristics. Specifically, money shocks have adverse spillover effects abroad because they increase foreign yields significantly, which depresses economic activity. Spillovers to emerging market economies are stronger than those to small advanced economies. At the same time, real shocks have a generally positive spillover impact on recipient economies: higher economic activity in the United States spurs export growth, which is only partly offset by the higher yields in the recipient economies.

Figure 2.SF.1. Implied Volatility
(Basis points)



Source: Bloomberg, L.P.
Note: MOVE = Merrill Option Volatility Expectations. Data are through August 11, 2014.

Underlying Drivers of U.S. Yields

To decompose U.S. yields into real and money shocks, a bivariate VAR with sign restriction, comprising bond yields ($R_{i,t}$) and the log stock market index ($S_{i,t}$), is used. Specifically:

$$R_{i,t} = \alpha_{i,0} + \alpha_{i,1}R_{i,t-1} + \alpha_{i,2}S_{i,t-1} + \varepsilon^{R}_{i,t}, \qquad (2.SF.1)$$

$$S_{i,t} = \delta_{i,0} + \delta_{i,1}R_{i,t-1} + \delta_{i,2}S_{i,t-1} + \varepsilon^{S}_{i,t}. \qquad (2.SF.2)$$

The parameters $\alpha_{i,0}$, $\alpha_{i,1}$, $\alpha_{i,2}$, $\delta_{i,0}$, $\delta_{i,1}$ and $\delta_{i,2}$ are reduced-form coefficients, and $\varepsilon^{R}_{i,t}$ and $\varepsilon^{S}_{i,t}$ are reduced-form shocks that are a linear combination of the structural shocks $MONEY_{i,t} \sim N(0,1)$ and $REAL_{i,t} \sim N(0,1)$. Matheson and Stavrev (forthcoming) offer a more detailed description of the methodology.

The contemporaneous sign restrictions used to identify the two shocks assume that positive economic news causes both long-term yields and equity prices to

The authors of this Spillover Feature are Troy Matheson, Emil Stavrev, and Sebastian Weber, with research assistance from Ava Yeabin Hong and Chanpheng Fizzarotti.

[1]In light of the uneven recovery in advanced economies, see the *2014 Spillover Report* for a discussion of the implications of an asynchronous policy exit, with the United Kingdom and the United States exiting first, followed by the euro area and Japan.

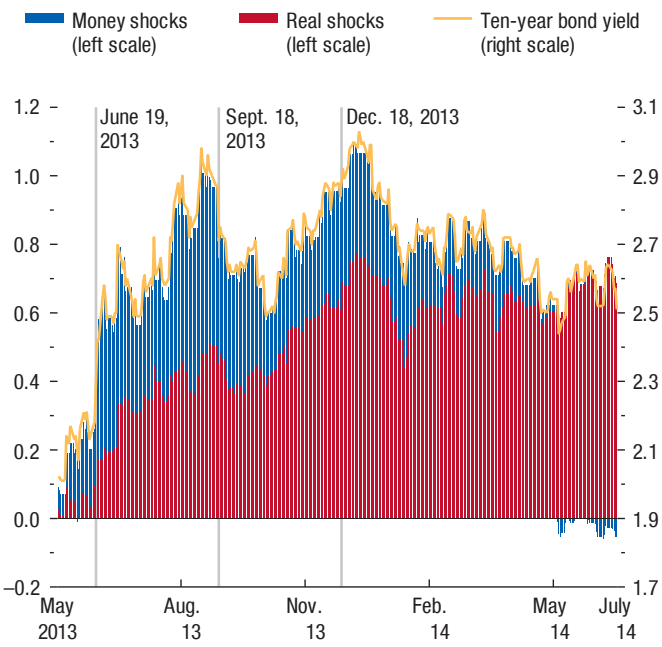
rise, whereas tighter monetary policy causes long-term yields to rise and equity prices to fall. Hence, the sign restrictions imposed on the two variables in the VAR are as follows:[2]

	R	*S*
REAL	+	+
MONEY	+	−

The data are daily over the period from January 2000 to mid-July 2014. The long-term bond yield (*R*) series is the 10-year U.S. Treasury bond yield at constant maturity, and the equity price (*S*) series is the (log) Standard & Poor's 500 index. Through the use of long-term yields instead of short-term yields in the analysis, a broader concept of money shocks that encompasses both conventional and unconventional monetary policy shocks is considered. However, the identification is also consistent with exogenous shocks to the term premium, shifts in portfolio preferences away from bonds and equities toward higher demand for cash, and potential upward surprises in inflation unrelated to increased demand. At different times, different factors will be dominant.

The results from the decomposition highlight the changing roles of money and real shocks in regard to U.S. yield developments over the period May 2013–July 2014.[3] Specifically, in the aftermath of the taper talk, higher yields were driven by money shocks, contributing about 60 percent of the total 100 basis point increase by the September "no taper" announcement. The subsequent actual taper announcement in December 2013 had little impact on yields because it was perceived by markets as confirmation of a better economic outlook. Starting in early 2014, yields declined in line with the falling contribution from the money shock, whereas the contribution from real shocks remained broadly unchanged. Since mid-May 2014, money shocks have turned negative (easing in money conditions), offsetting the positive contribution of better economic news to U.S. yields. By mid-July 2014, real shocks accounted for the entire 60 basis point increase in U.S. long-term yields since May 2013 (Figure 2.SF.2).

Figure 2.SF.2. Drivers of U.S. Yields
(Basis points)



Sources: Bloomberg, L.P.; Haver Analytics; and IMF staff calculations.
Note: Data are through July 10, 2014.

Spillover Effects from Higher U.S. Yields

To assess the international transmission of the identified real and money shocks to U.S. yields, the dynamic effect of these external shocks (X_t) on other countries' variables ($Y_{i,t}$) is obtained using a panel VAR model estimated with monthly data.[4] Specifically:[5]

[2]The money and real shock decomposition is based on the model that provides the least distance to the pointwise median impulse response of all the models that fulfill the sign restrictions (Fry and Pagan 2011).

[3]Note that the real shocks from the bivariate VAR decomposition comprise both activity and "risk-on/-off" shocks, which could have potentially different spillover implications. To disentangle risk shocks, the U.S. nominal effective exchange rate has been added to the bivariate VAR. Although activity and risk shocks have the same impact on yields and stock prices, their impact on the exchange rate is different: the U.S. dollar appreciates (depreciates) as a result of stronger activity (risk) (for elaboration on the estimation, see IMF 2014). Preliminary results from this three-way decomposition suggest qualitatively similar results for the contribution of money shocks. Regarding real shocks, the results suggest that the activity component has remained broadly stable, whereas the risk-on contribution has increased since May 2014. Further analysis is needed to assess the spillover implications of activity and risk shocks.

[4]A number of authors have assessed the role of U.S. shocks for other countries. See, for instance, Ehrmann, Fratzscher, and Rigobon 2011; Ehrmann and Fratzscher 2009; Fratzscher, Lo Duca, and Straub 2013; Chen, Mancini-Griffoli, and Sahay, forthcoming; Georgiadis, forthcoming; Kim 2001; Maćkowiak 2007; Miniane and Rogers 2007; and Mishra and others 2014.

[5]A caveat to this analysis is that coefficient estimates are held constant across the sample period. Spillovers may have been larger

$$Y_{i,t} = \sum_{l=1}^{12} A_l Y_{i,t-1} + \sum_{l=0}^{12} B_l X_{t-l} + \varepsilon_{i,t}, \quad (2.SF.3)$$

in which A_l and B_l represent reduced-form coefficient matrices. The dependent-variable vector includes the local-currency long-term sovereign bond yield ($R_{i,t}$), the annual change in the nominal effective exchange rate ($E_{i,t}$), and an activity measure ($Z_{i,t}$) alternatively described by the annual change in industrial production, the annual change in the stock price index, or the sum of equity and bond net-capital-inflow-to-GDP ratios:[6]

$$Y_{i,t} = (R_{i,t} \quad E_{i,t} \quad Z_{i,t}). \quad (2.SF.4)$$

The external shocks (X_t) are the U.S. money and real shock, respectively.[7] Because the two shocks are orthogonal to each other, they are included separately in the estimation. All regressions include 12 lags.[8] Confidence bands are based on bootstrapped standard errors.[9]

The analysis uses monthly data for the period from January 2000 to July 2014. Long-term local-currency sovereign bond yields are taken from Bloomberg, L.P., and the IMF's International Financial Statistics (IFS) database. The nominal effective exchange rate is based on data from the IMF's Information Notice System (INS), and the industrial production data are obtained from the IFS database and Haver Analytics.

The (unbalanced) panel includes a total of 29 economies: 6 small advanced economies (Australia, Canada, New Zealand, Norway, Sweden, Switzerland), 9 central and eastern European economies (Bulgaria, Croatia, Czech Republic, Hungary, Israel, Poland, Romania, Slovak Republic, Turkey), 10 Asian economies (China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Pakistan, Philippines, Singapore, Thailand), 3 Latin American economies (Brazil, Colombia, Mexico), and South Africa. To minimize endogeneity concerns, larger advanced economies, such as Japan, the United Kingdom, and the euro area, are excluded from the spillover analysis (although even for these economies, it is likely that U.S. shocks dominate; see for elaboration Ehrmann, Fratzscher, and Rigobon 2011).

The results show that spillovers associated with a 25 basis point increase in the U.S. 10-year bond yield differ notably depending on whether the underlying driver is a real or a money shock (Figure 2.SF.3). In particular, money shocks are followed by increases in bond yields, a depreciation of the currency, capital outflows, and declines in stock markets and economic activity. The same yield increase due to better growth prospects (real shock) is followed by a limited response in bond yields, an appreciation of the currency, capital inflows, and higher stock market returns and economic activity. The response of the exchange rate is not immediately intuitive, given that better economic prospects in the United States may also cause higher capital inflows and an appreciation of the U.S. dollar. The fact that the other currencies appreciate (and capital flows to them) is explained by the dual character of the real shock (see note 4). Given the nature of the identification scheme, the real shock can capture both better economic news about the U.S. economy and increased risk appetite, which leads to a reallocation of assets from safe (U.S. bonds) to more risky (stocks and emerging market bonds) assets. If risk appetite dominates, the real shock causes capital to flow to emerging markets, appreciating their currencies and depressing their yields. However, whether risk motives or U.S. economic news dominates, industrial production rises in the United States and other economies.

The results also suggest that spillovers from money shocks appear, in general, smaller than effects in the United States, whereas those from real shocks appear larger (Figures 2.SF.3 and 2.SF.4). In particular, following an adverse money shock, industrial production in recipient countries falls on average about ¾ percent, whereas U.S. industrial production declines by about 1¼ percent over the course of a year. This is in line with the panel results that interest rates in recipient economies increase by less than those in the United States after a money shock. The estimates are slightly

in the aftermath of the crisis. However, the number of available observations is insufficient to make testing this hypothesis empirically feasible.

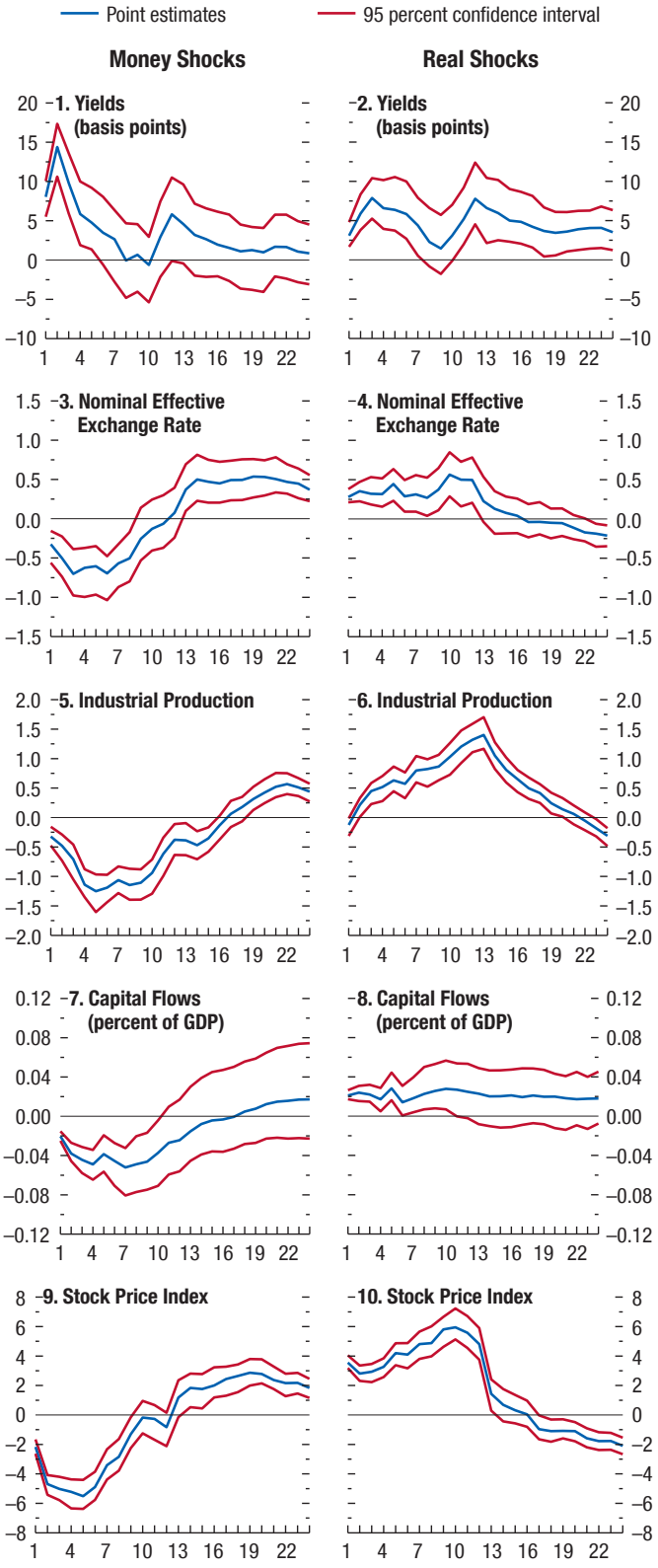
[6]This approach is preferred to a regression including all three activity measures at a time, which would severely reduce the degrees of freedom given two additional variables and 12 lags. Impulse-response functions are reported for yields, nominal effective exchange rate, and industrial production from the baseline specification and complemented by those for the annual change in the stock price index and the sum of the equity and bond net-capital-inflow-to-GDP ratios from the alternative specification. Data are taken from the IMF's International Financial Statistics database and from EPFR Global. Changing the specification to a log-level regression or a first-difference of the log-level regression affects the value of the point estimates somewhat but has no implications for the qualitative results.

[7]To convert the shocks, which are identified at daily frequency, to monthly frequency, the sum of the shocks in the respective month is taken.

[8]The optimal lag length varies depending on the test criteria (between 9 and 16 lags).

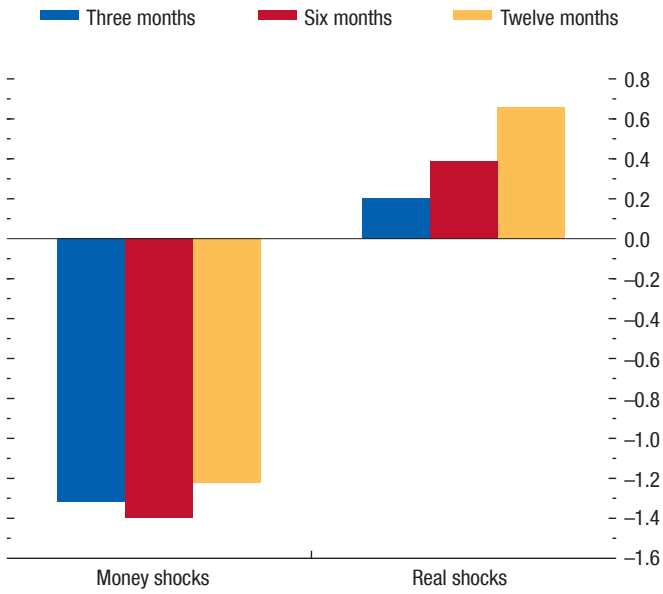
[9]Confidence bands allow for cross-equation correlation in the VAR structure. However, confidence bands are likely underestimating the uncertainty around the coefficient estimates because cross-sectional dependence across countries is not taken into account and an estimated variable is used as a regressor.

Figure 2.SF.3. Spillovers from U.S. Money and Real Shocks
(Year-over-year percent change, unless indicated otherwise; months on x-axis)



Source: IMF staff estimates.

Figure 2.SF.4. United States: Average Response of Industrial Production after Varying Intervals
(Year-over-year percent change)



Source: IMF staff estimates.

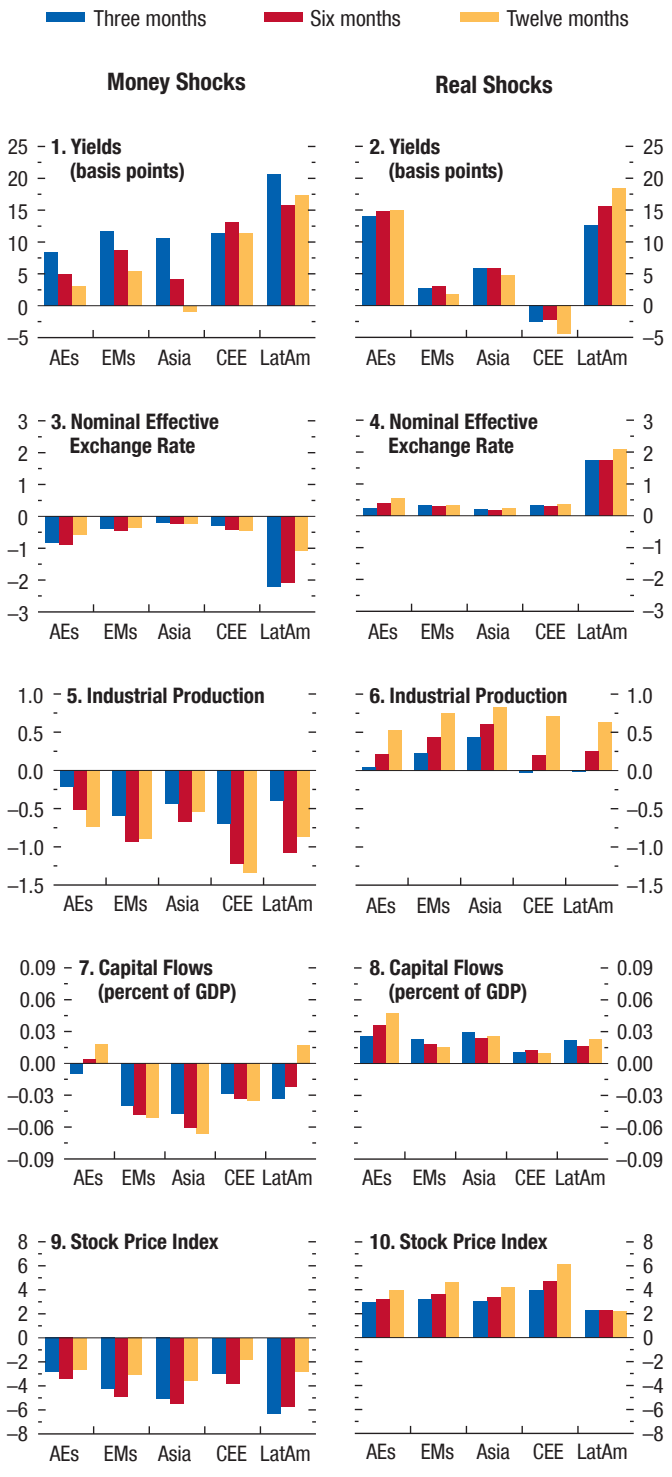
above those for conventional monetary policy spillovers, which range from a ratio of 1:3 to a ratio of 1:2 for the contraction in recipient-country output relative to U.S. output.[10] At the same time, a positive real shock in the United States boosts industrial production there by a bit less than in recipient economies, likely reflecting the additional positive impact from higher risk appetite embedded in real shocks. The VAR literature based on quarterly data finds average responses to U.S. growth surprise shocks in the range from a ratio of 1:4 to a ratio of 1:2 and for some countries above a ratio of 1:1 (see the April 2014 *World Economic Outlook*).[11] However, the identification strategy underlying these estimates differs from the one used here, which comprises both growth surprise and risk-on components. The latter are generally associated with larger effects for emerging markets and thus may account for the higher spillover estimate.

The average responses mask potential variation across countries, reflecting, for example, differing economic links with the United States or policy frameworks that can act

[10]See for instance Kim 2001, Maćkowiak 2007, and Georgiadis, forthcoming.

[11]These studies rely on sample periods extending often beyond the early 1980s. Growth correlations in the past decade have been significantly higher (see the October 2013 *World Economic Outlook*).

Figure 2.SF.5. Spillovers from U.S. Money and Real Shocks by Country Group
(Year-over-year percent change, unless indicated otherwise)



Source: IMF staff estimates.
Note: AE = advanced economy; CEE = central and eastern Europe; EM = emerging market; LatAm = Latin America.

as shock absorbers or amplifiers. This aspect is further analyzed by contrasting two cases: first, splitting the sample into small advanced economies and emerging markets, and second, comparing the results for central and eastern European, Asian, and Latin American emerging markets. Figure 2.SF.5 shows the average response of bond yields, nominal effective exchange rates, industrial production, capital flows, and stock prices for the country groups in the first 3, 6, and 12 months following money and real shocks. Results for Latin America should be interpreted with care, because they rely on a small sample of only three economies for which data are available, mainly in the latter half of the sample period.

In response to a U.S. money shock, compared with those in advanced economies, yields in emerging market economies increase by more, exchange rates depreciate by less, capital outflows are larger, and output and stock prices contract by more. The differential responses likely reflect the higher risk associated with emerging market assets and the higher exchange rate flexibility and deeper financial markets in advanced economies. The response to a U.S. real shock is less differentiated across the two groups, with the notable exception of the yield response, which reflects, among other factors, the dual nature of the real shock (comprising a risk-on component that tends to depress bond yields in emerging markets).[12]

Activity in Asian economies tends to be less affected by U.S. money shocks relative to economies in central and eastern Europe and Latin America, despite higher capital outflows and larger stock market declines. However, economies in central and eastern Europe and Latin America experience larger currency depreciations and greater increases in bond yields. The tighter financial conditions in these economies prompt a larger decline in industrial production relative to that in economies in Asia. In response to a U.S. real shock, the difference between economies in Asia and those in central and eastern Europe is less pronounced (and mostly not statistically significant), with the exception of the reaction of stock market prices, which tend to rally more in central and eastern Europe than in Asia. The different impacts on central and eastern European and Asian economies from U.S. money and real shocks likely reflect, among other things, differences in fundamentals

[12]The stronger yield response in advanced economies compared with that in emerging markets following real shocks is consistent with real shocks capturing risk-on behavior, with emerging market bonds and equities generally considered more risky, whereas advanced economy bonds are viewed as safer assets.

(for example, relatively strong current account balances in Asian economies).[13] In addition, central and eastern European economies tend to have greater participation of foreigners in local currency markets. This may explain the stronger equity price response and nonsignificant negative response of bond yields to a real shock, reflecting the risk-on aspect. Latin American economies' yields and nominal effective exchange rates are more responsive than those in economies in the other two regions, partly reflecting relatively open capital accounts and more flexible exchange rate regimes.

Conclusions

This analysis suggests that spillover effects differ depending on the underlying drivers of U.S. yields. A faster recovery (real shock) in the United States has a positive impact on global growth by strengthening external sector performance and boosting confidence in recipient economies. At the same time, an unexpected tightening of financial conditions (adverse U.S. money shock) has negative spillover effects abroad as it pushes up foreign yields significantly, depressing economic activity.

The impact across countries varies depending on the strength of their economic links with the United States, their policy frameworks (which can act as shock absorbers or amplifiers), or both. Small advanced economies are less vulnerable to adverse U.S. money shocks than emerging market economies, reflecting, among other factors, their more flexible exchange rate regimes and deeper financial markets. Across emerging market economies, tightening financial conditions have a smaller impact on activity in Asian economies than in central and eastern European and Latin American economies, partly reflecting relatively strong external balances among Asian economies.

[13]On the role of fundamentals in spillovers, see IMF 2014 and the references therein.

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CHAPTER 3

IS IT TIME FOR AN INFRASTRUCTURE PUSH? THE MACROECONOMIC EFFECTS OF PUBLIC INVESTMENT

This chapter finds that increased public infrastructure investment raises output in both the short and long term, particularly during periods of economic slack and when investment efficiency is high. This suggests that in countries with infrastructure needs, the time is right for an infrastructure push: borrowing costs are low and demand is weak in advanced economies, and there are infrastructure bottlenecks in many emerging market and developing economies. Debt-financed projects could have large output effects without increasing the debt-to-GDP ratio, if clearly identified infrastructure needs are met through efficient investment.

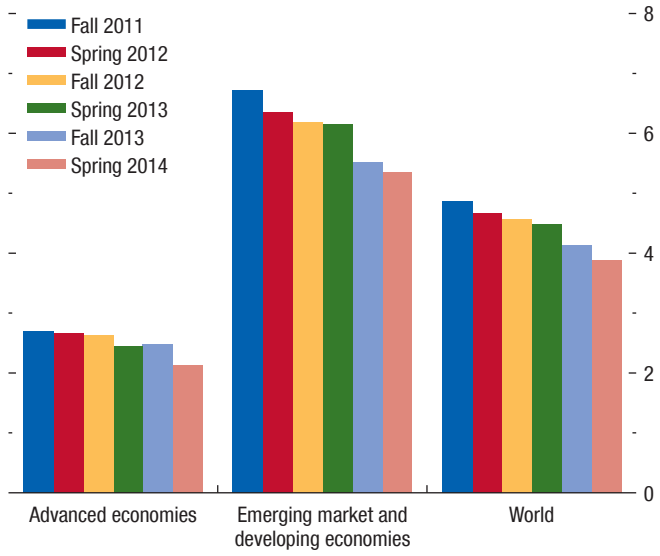
Five years after the global financial crisis, the global recovery continues but remains weak. In many advanced economies there is still substantial economic slack, and inflation remains too low in the euro area. Robust demand momentum has not yet taken hold, despite prolonged accommodative monetary policy, slowing in the pace of fiscal consolidation, and improvements in financial conditions. As noted in Chapter 1, there are now worries that demand will remain persistently weak—a possibility that has been described as "secular stagnation" (Summers 2013; Teulings and Baldwin 2014).

In emerging market economies the concerns are of a different nature. After a sharp rebound following the crisis, growth rates in the last few years have fallen not only below the postcrisis peak of 2010–11, but also below levels seen in the decade before the crisis. The persistent nature of the deceleration in output suggests that structural factors may be at work (Cubeddu and others 2014), and the serial disappointments in growth have led to a ratcheting down of medium-term growth forecasts (Figure 3.1). Although many factors are likely to be playing a role, one frequently expressed concern is inadequate infrastructure. In many emerging market economies, including Brazil, India, Russia, and South Africa, infrastructure bottlenecks are not just a medium-term worry but have been flagged as a constraint even on near-term growth. In low-income countries, deficiencies in the availability of infrastructure remain glaring and are often cited as an impediment to long-term development.[1]

Given these concerns and the current environment of low government borrowing costs—real interest rates are expected to remain lower than precrisis levels for the foreseeable future (see Chapter 3 of the April 2014 *World Economic Outlook*)—might this be a good time to increase public infrastructure investment? In

Figure 3.1. WEO Medium-Term Growth Projections
(Percent change)

Serial disappointments in emerging market growth rates have led to a ratcheting down of medium-term growth forecasts.



Source: IMF staff estimates.
Note: Economy groups are defined in Appendix 3.1. Medium-term growth projections are five-year-ahead growth forecasts.

The authors of this chapter are Abdul Abiad (team leader), Aseel Almansour, Davide Furceri, Carlos Mulas Granados, and Petia Topalova, with contributions from the Research Department's Economic Modeling and Development Macroeconomics Divisions and support from Angela Espiritu, Sinem Kilic Celik, and Olivia Ma.

[1]See for example Calderón and Servén 2008; Foster and Briceño-Garmendia 2010; Fujita 2012; G20 Development Working Group 2011; and U.S. International Trade Commission 2009.

advanced economies an increase in infrastructure investment could provide a much-needed fillip to demand, and it is one of the few remaining policy levers available to support growth, given already accommodative monetary policy. In developing economies it could help address existing and nascent infrastructure bottlenecks. And in all economies it would help boost medium-term output, as higher infrastructure capital stocks expand productive capacity. As the Group of Twenty (G20) finance ministers and central bank governors stated in their communiqué from Sydney in February, higher infrastructure investment "is crucial for the global economy's transition to stronger growth."[2]

There are also arguments against such a push. Many advanced economies have little fiscal space available given still-high debt-to-GDP ratios and the need for further consolidation. Financing risks could increase with expected normalization of some key central banks' monetary policies. There are open questions about the size of the public investment multipliers and the long-term returns on public capital, both of which play a role in determining how public-debt-to-GDP ratios will evolve in response to higher public investment. Japan in the 1990s is often cited as a cautionary tale (Box 3.1). In all economies, but in developing economies in particular, inefficiencies in the public investment process are of concern: there is no shortage of anecdotes of increased government investment that produced few measurable benefits (see World Bank 1994; Pritchett 2000; Caselli 2005; and Warner 2014).

To assess appropriately the benefits and costs of increasing public investment in infrastructure, it is critical to determine what macroeconomic impact public investment will have. This chapter examines the following questions:

- How have public capital and investment evolved over time? How does infrastructure provision vary across groups of countries and types of infrastructure?
- What are the macroeconomic effects of public investment? To what extent does it raise output, both in the short and the long term? Does it increase the public-debt-to-GDP ratio if it is debt financed? How do these effects vary with key characteristics of the economy, such as the degree of economic slack, the efficiency of public investment, and the way the investment is financed?
- What do these findings suggest for infrastructure investment? Is this a good time to raise infrastructure investment? How do fiscal institutions and rules shape the evolution of public investment?

To address these questions, this chapter presents stylized facts on the provision of public and infrastructure capital. Since measures of infrastructure investment and the stock of infrastructure capital are not available for a wide range of countries, the evolution of public investment and the stock of public capital are used as proxy measures.[3] This is supplemented by physical measures of infrastructure, such as kilometers of roads and kilowatts of power generation capacity. The chapter then examines the historical evidence on the macroeconomic effects of public investment. Using a novel empirical strategy, the chapter offers new evidence on the effects of public investment changes on output and debt in advanced economies. It also presents evidence on their effects in emerging market and developing economies. To complement the empirical analysis, the chapter employs model simulations to explore additional issues, such as the role of monetary policy and the productivity of public capital. The chapter's main findings are as follows:

- The stock of public capital (a proxy for infrastructure capital) as a share of output has declined significantly over the past three decades across advanced, emerging market, and developing economies. In emerging market economies and low-income countries, infrastructure provision per capita is still a fraction of that in advanced economies. In some advanced economies, there are signs that aging infrastructure and insufficient maintenance and investment are affecting the quality of the existing infrastructure stock.
- Increased public investment raises output, both in the short term because of demand effects and in the long term as a result of supply effects. But these effects vary with a number of mediating factors, including (1) the degree of economic slack and monetary accommodation, (2) the efficiency of public investment, and (3) how public investment is financed. When there is economic slack and monetary accommodation, demand effects are stronger, and the public-debt-to-GDP ratio may actually decline. If the efficiency of the public investment process is relatively low—so that project selection

[2]The communiqué is available on the G20 website: https://www.g20.org/official_resources/library.

[3]Public capital and infrastructure capital are closely related: a significant component of the public capital stock in most countries consists of infrastructure, and the public sector was and continues to be its main provider. The two tend to be strongly correlated; see the stylized facts presented in the chapter.

and execution are poor and only a fraction of the amount invested is converted into productive public capital stock—increased public investment leads to more limited long-term output gains.

- For economies with clearly identified infrastructure needs and efficient public investment processes and where there is economic slack and monetary accommodation, there is a strong case for increasing public infrastructure investment. Moreover, evidence from advanced economies suggests that an increase in public investment that is debt financed could have larger output effects than one that is budget neutral, with both options delivering similar declines in the public-debt-to-GDP ratio. This should not, however, be interpreted as a blanket recommendation for a debt-financed public investment increase in all advanced economies, as adverse market reactions—which might occur in some countries with already-high debt-to-GDP ratios or where returns to infrastructure investment are uncertain—could raise financing costs and further increase debt pressure.
- Many emerging market and low-income economies have a pressing need for additional infrastructure to support economic development. But increasing public investment may lead to limited output gains, if efficiency in the investment process is not improved. Historically, there has been much wider variation in the macroeconomic response to public investment in emerging market and developing economies than in advanced economies. Model-based simulations suggest that public investment raises output in emerging market and developing economies, but at the cost of higher public-debt-to-GDP ratios, because of the general absence of economic slack and the relatively low efficiency of such investment. Thus, negative fiscal consequences should be carefully weighed against the broader social gains from increased public investment. For those emerging market and developing economies where infrastructure bottlenecks are constraining growth, the gains from alleviating these bottlenecks could be large.
- Increasing investment efficiency is critical to mitigating the possible trade-off between higher output and higher public-debt-to-GDP ratios. Thus a key priority in many economies, particularly in those with relatively low efficiency of public investment, should be to raise the quality of infrastructure investment by improving the public investment process. This could involve, among other reforms, better project appraisal and selection that identifies and targets infrastructure bottlenecks, including through centralized independent reviews, rigorous cost-benefit analysis, risk costing, and zero-based budgeting principles, and improved project execution.[4]
- Improvements in fiscal institutions and some fiscal rules could help protect public investment during periods of fiscal consolidation.

For many economies, given the large expected infrastructure investment needs over the coming years, facilitating increased private financing and provision of infrastructure will be very important—it is in fact one of the G20's top priorities.[5] The analysis of public versus private infrastructure provision is beyond the scope of this chapter, but as a burgeoning literature on the subject has noted, facilitating increased private financing and provision of infrastructure could help ease fiscal constraints, generate efficiency gains, and increase investment returns (see for example Chapter 3 of the October 2014 *Regional Economic Outlook: Sub-Saharan Africa;* European Investment Bank 2010; Arezki and others, forthcoming; OECD 2014; and World Bank, forthcoming). However, public-private partnerships can also be used to bypass spending controls, and governments can end up bearing most of the risk involved and facing potentially large fiscal costs over the medium to long term. Therefore, as the April 2014 *Fiscal Monitor* emphasizes, it is critical that countries maintain maximum standards of fiscal transparency when using public-private partnerships for infrastructure provision.[6]

The Economics of Infrastructure: A Primer

This section discusses the basic economics of infrastructure in order to set the stage for the remainder of the chapter. It discusses the role of infrastructure in the economy, how it differs from other types of capital, and the channels through which stepped-up infrastructure investment can affect economic activity, both in the short and long term.

Infrastructure refers to the basic structures that facilitate and support economic activity. In this chapter the term is used to denote what economists refer to

[4]A forthcoming IMF policy paper (IMF, forthcoming) explores the extent and sources of inefficiency in the planning and management of public investment projects and discusses policy options in these areas.

[5]See https://www.g20.org/g20_priorities/g20_2014_agenda/investment_and_infrastructure. For a discussion on financing future infrastructure needs, see World Economic Forum 2010 and McKinsey Global Institute 2013.

[6]For an in-depth discussion of the considerations that can guide public investment and public-private partnerships, see Hemming and others 2006; Akitoby, Hemming, and Schwartz 2007; and the April 2014 *Fiscal Monitor*.

as "core" infrastructure—roads and other transportation facilities, power generation and other utilities, and communications systems. Transport networks connect producers and consumers to markets, utilities provide essential inputs such as power and water for both production and consumption, and communications networks facilitate the exchange and dissemination of information and knowledge. As such, infrastructure is an indispensable input in an economy's production, one that is highly complementary to other, more conventional inputs such as labor and noninfrastructure capital. Indeed, it is hard to imagine any production process in any sector of the economy that does not rely on infrastructure. Conversely, inadequacies in infrastructure are quickly felt—in some countries, power outages, insufficient water supply, and decrepit or nonexistent roads adversely affect people's quality of life and present significant barriers to the operation of firms.

A few key characteristics distinguish infrastructure from other types of capital. First, infrastructure investments are often large, capital-intensive projects that tend to be "natural monopolies"—it is often more cost-effective for services to be provided by a single entity. Second, they tend to have significant up-front costs, but the benefits or returns accrue over very long periods of time, often many decades; this longevity (and the associated difficulty of ascertaining adequate returns over such a long horizon) can pose a challenge to private financing and provision. Third, infrastructure investments have the potential to generate positive externalities, so that the social return to a project can exceed the private returns it can generate for the operator.[7] This can lead to underprovision of needed investments. For these reasons, infrastructure has historically been provided by the public sector, public-private partnerships, or regulated private entities.

In deciding which infrastructure projects to undertake, governments must carefully weigh broader social returns against funding costs and fiscal consequences, recognizing that infrastructure projects are not undertaken primarily to boost revenues. Certain infrastructure projects may have a high social return, but costs might not be recouped through user charges and prices or through increased tax revenue from higher activity. Such situations generate a trade-off between positive social benefits on the one hand and negative fiscal consequences on the other.

[7]The benefits of constructing a new bridge, for example, spill over to the rest of the road network of which it is a part, and households and firms become more productive because of the improved transport network.

Increasing the flow of infrastructure services could be achieved by stepping up investment in new infrastructure projects (such as building new roads), but also by boosting operation and maintenance spending (such as filling potholes in existing roads), which reduces the rate of capital depreciation and extends the lifetime of installed infrastructure. Despite evidence of high rates of return, operations and maintenance spending is often neglected in favor of building new infrastructure (Rioja 2013), and is sometimes one of the first budget items to be pared back in times of fiscal pressure (Adam and Bevan 2014). But reducing maintenance expenditure is not equivalent to true fiscal savings from a longer-term perspective: potholes that are not filled today will have to be filled eventually, possibly at a higher cost.

An increase in public infrastructure investment affects the economy in two ways. In the short term it boosts aggregate demand through the short-term fiscal multiplier, similar to other government spending, and also by potentially crowding in private investment, given the highly complementary nature of infrastructure services. The size of the fiscal multiplier can vary with the state of the economy. Government investment also adds to the stock of public debt if the government borrows to finance additional spending. Whether debt rises as a share of GDP in the short term depends on the size of the fiscal multiplier and the elasticity of revenues to output. GDP may rise by more than debt initially, and the resulting higher tax revenue may offset some of the increased spending on public investment.

Over time, there is also a supply-side effect of public infrastructure investment as the productive capacity of the economy increases with a higher infrastructure capital stock. The efficiency of investment is central to determining how large this supply-side effect will be (see Box 3.2). Inefficiencies in the investment process, such as poor project selection, implementation, and monitoring, can result in only a fraction of public investment translating into productive infrastructure, limiting the long-term output gains.

The extent to which increases in public capital can raise potential output is a key factor in determining the evolution of the debt-to-GDP ratio over the medium and long term. In particular, if short-term multipliers, public investment efficiency, and the elasticity of output to public capital are sufficiently high, an increase in public investment can be "self-financing" in that it leads to a reduction in the debt-to-GDP ratio.[8]

[8]See Appendix 3.2 for further elaboration on this conceptual framework.

Public and Infrastructure Capital and Investment: Where Do We Stand?

This section documents how public and infrastructure capital and investment have evolved over the past four decades. Public capital and infrastructure capital are closely related: a significant component of the public capital stock in most countries consists of infrastructure, and the public sector was and continues to be its main provider.[9] However, there are differences: public capital can include noninfrastructure components (such as machinery and equipment, inventories, valuables, and land), and infrastructure can also be provided by the private sector or government-owned enterprises. Since measures of infrastructure investment and the stock of infrastructure capital are not available for a wide range of countries, the stylized facts here use the evolution of public investment and the stock of public capital as a proxy measure (Box 3.3 discusses issues with the measurement of the public capital stock).[10] This approach is supplemented by looking at physical measures of infrastructure, such as kilometers of roads and kilowatts of power generation capacity.

The stock of public capital, which reflects to a large extent the availability of infrastructure, has declined significantly as a share of output over the past three decades across advanced, emerging market, and developing economies (Figure 3.2). In advanced economies, this reflects primarily a trend decline in public investment from about 4 percent of GDP in the 1980s to 3 percent of GDP at present.[11]

In emerging market economies and low-income countries, sharply higher public investment in the late 1970s and early 1980s significantly raised public capital stocks, but since then public capital relative to GDP has also fallen.[12] Higher public investment rates in the past decade have stemmed the decline. Public capital stocks relative to GDP tend to be higher in developing economies than in advanced economies because of the higher investment rates and lower GDP levels in the former. However, when one adjusts for the efficiency of public investment (Box 3.2), which tends to be lower in developing economies, the estimated stock of public capital is significantly reduced (dashed lines in Figure 3.2; see also Dabla-Norris and others 2012; Gupta and others 2014; and Chapter 2 of the April 2014 *Fiscal Monitor*). And in per capita terms, these economies still have only a fraction of the public capital available in advanced economies (Figure 3.2, panel 5). The large variation in public capital stocks per person is mirrored by the availability of physical infrastructure per person (Figure 3.3).[13] Power generation capacity per person in emerging market economies is one-fifth the level in advanced economies, and in low-income countries it is only one-eighth the level in emerging markets. The discrepancy in road kilometers per person is similarly large.

Even in some advanced economies, in which measures of the quantity of infrastructure appear high relative to those in the rest of the world, there are deficiencies in the quality of the existing infrastructure stock.[14] Business executives' assessment of the overall quality of infrastructure has been declining for the United States and Germany (Figure 3.4, panel 1), reflecting largely the perceived deterioration in the quality of roads and highways (panel 2). As the American Society of Civil Engineers (2013) notes, 32 percent of major roads in the United States are now in poor or mediocre condition, and the U.S. Federal Highway Administration estimates that between $124 billion and $146 billion annually in capital investment will be needed for substantial improvement in conditions and performance—considerably more than the current

[9]Over the past two decades, private participation in infrastructure via public-private partnerships has been on the rise. In the aggregate, however, public infrastructure investment still dwarfs private, as infrastructure investment via public-private partnerships is still less than a tenth of public investment in advanced economies and less than a quarter of public investment in emerging market and developing economies.

[10]Direct measures of public capital—more formally known as government nonfinancial assets—are available for a handful of economies only, and even these estimates are often based on different coverage and methods. As a result, the public capital series used here, taken from the April 2014 *Fiscal Monitor*, are constructed by cumulating government investment spending, assuming some initial value of public capital and depreciation rates (see the April 2014 *Fiscal Monitor* and Kamps 2006 for details).

[11]Although the decline in the stock of public capital in advanced economies may partially reflect an increasing role of the private sector in the provision of infrastructure (such as energy and telecommunications), the stock of private capital and the level of private investment as a share of output have also declined over the past three decades.

[12]Figure 3.12 shows the evolution of public capital stocks in emerging markets and in low-income countries separately. Both follow the same general pattern of rising in the late 1970s and early 1980s and declining thereafter, though the rise and decline have been sharper in low-income countries.

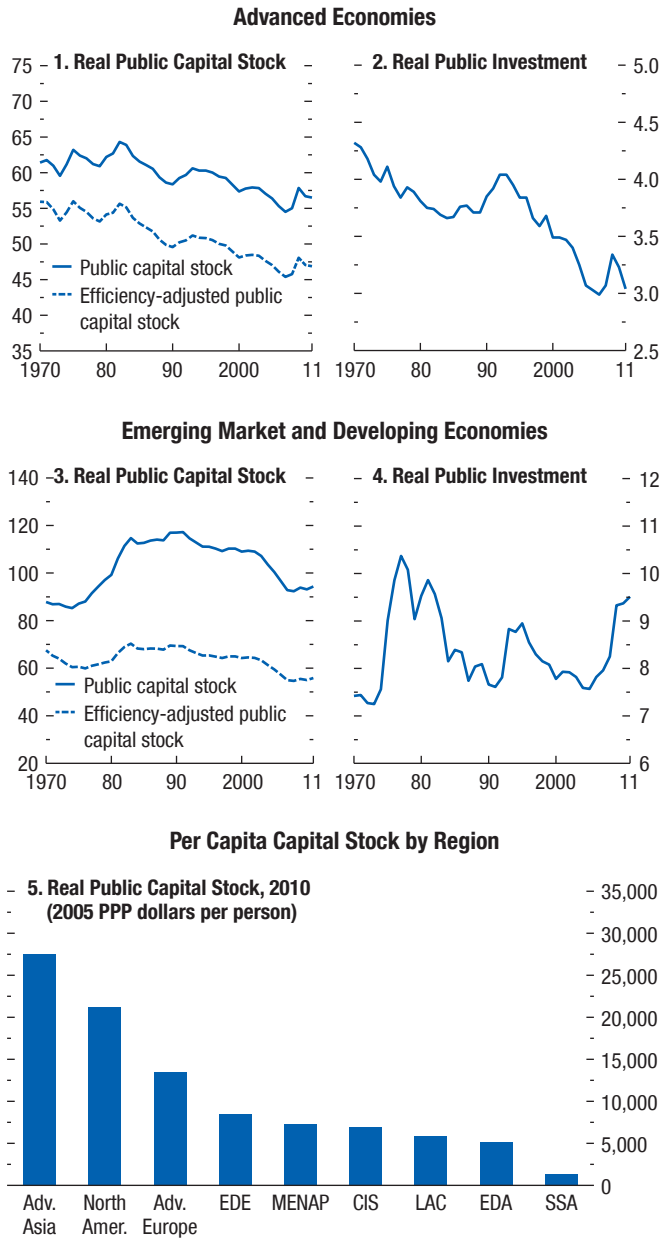
[13]Public capital stock per capita and physical infrastructure per capita (as measured by a synthetic index of power, roads, and telephones) are highly correlated. The cross-country correlation over the period 2005–11 is about 0.77, and a 1 percent higher stock of public capital per person corresponds to a 0.73 percent higher stock of infrastructure per person (Figure 3.3, panel 4).

[14]In addition, the evidence presented by Abiad and others (forthcoming) seems to suggest that the quantity of infrastructure in several advanced economies is also becoming increasingly inadequate.

Figure 3.2. Evolution of Public Capital Stock and Public Investment

(Percent of GDP, PPP weighted, unless noted otherwise)

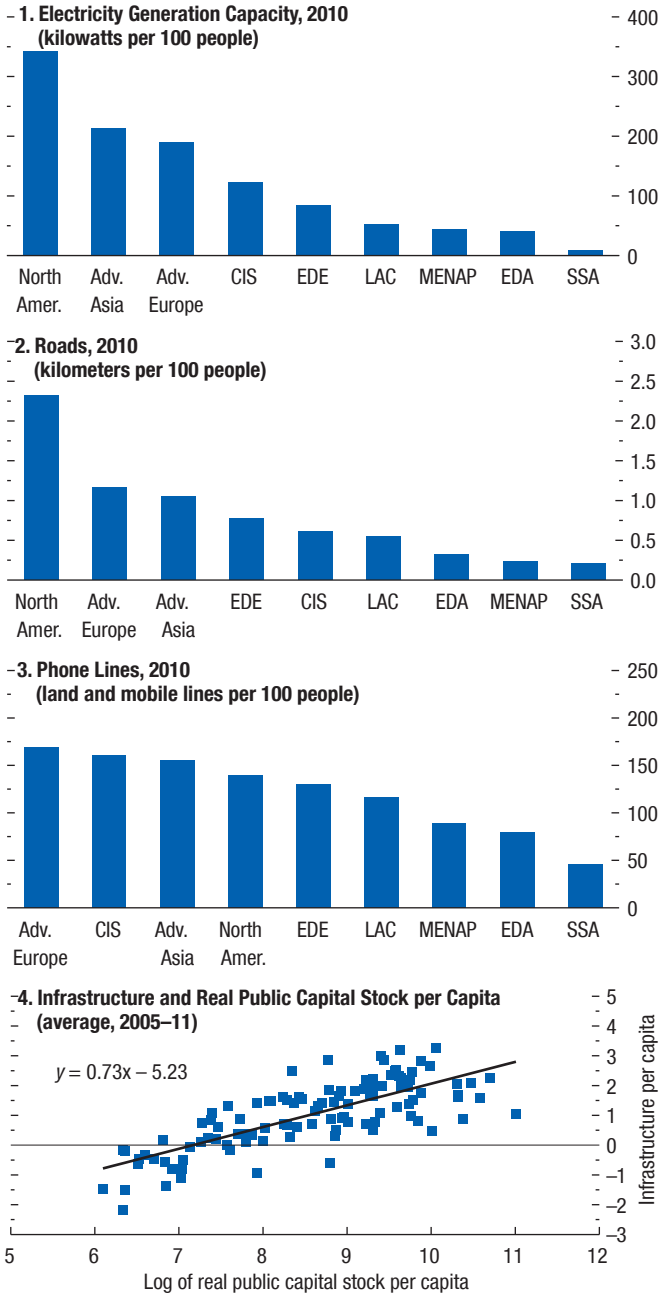
The stock of public capital has declined substantially as a share of output over the past three decades across advanced, emerging market, and developing economies. In per capita terms, non–advanced economies still have only a fraction of the public capital available in advanced economies.



Sources: IMF, Fiscal Monitor database; and IMF staff calculations.
Note: Adv. Asia = advanced Asia; Adv. Europe = advanced Europe; CIS = Commonwealth of Independent States; EDA = emerging and developing Asia; EDE = emerging and developing Europe; LAC = Latin America and the Caribbean; MENAP = Middle East; North Africa, Afghanistan, and Pakistan; North Amer. = North America; PPP = purchasing power parity; SSA = sub-Saharan Africa. Economy groups are defined in Appendix 3.1.

Figure 3.3. Physical Measures of Infrastructure

The large variation in public capital stocks per person is mirrored in the availability of physical infrastructure per person. Public capital stock per capita and physical infrastructure per capita are highly correlated.



Sources: IMF, Fiscal Monitor database; World Bank, World Development Indicators; and IMF staff calculations.
Note: Adv. Asia = advanced Asia; Adv. Europe = advanced Europe; CIS = Commonwealth of Independent States; EDA = emerging and developing Asia; EDE = emerging and developing Europe; LAC = Latin America and the Caribbean; MENAP = Middle East, North Africa, Afghanistan, and Pakistan; North Amer. = North America; SSA = sub-Saharan Africa. Economy groups are defined in Appendix 3.1. The infrastructure measure used in panel 4 is the principal component of electricity generation capacity, roads, and phone lines per capita.

$100 billion spent annually on capital improvements at all government levels.

Figure 3.4 also illustrates the heterogeneity of the state of infrastructure. Although the decline in the perceived quality of infrastructure in the United States and Germany is evident, a similar decline is not apparent in other Group of Seven economies—for example, in Canada, France, Japan, and the United Kingdom. Italy's infrastructure quality seems to be on the rise, albeit from relatively low levels. This heterogeneity should not be surprising and presents an important caveat: individual countries have differing infrastructure needs, and increased infrastructure investment should be considered only if there is a documented need and an economic payoff.

The Macroeconomic Effects of Public Investment

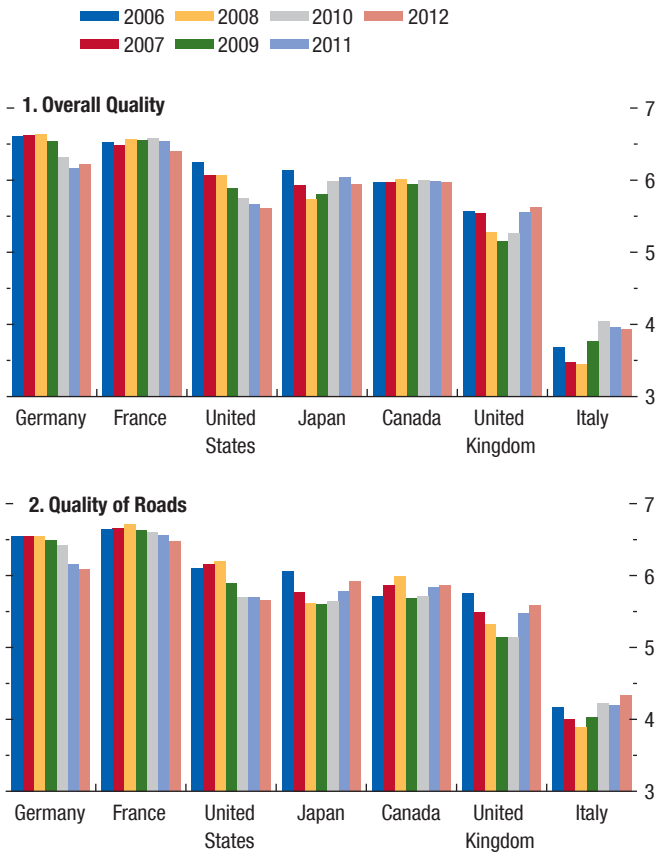
In order to assess the benefits and costs of additional public infrastructure investment properly, policymakers need a clear picture of the macroeconomic implications of such investment.

As discussed earlier in the chapter, an increase in public infrastructure investment affects output both in the short term, by boosting aggregate demand through the fiscal multiplier and potentially crowding in private investment, and in the long term, by expanding the productive capacity of the economy with a higher infrastructure stock. The macroeconomic response is shaped by various factors, including the degree of economic slack and monetary accommodation in the short term and efficiency of public investment in the long term. This section examines whether these theoretical predictions regarding the macroeconomic effects are borne out in the data. In contrast to the large body of literature that has focused on estimating the long-term elasticity of output to public and infrastructure capital using a production function approach,[15] the analysis here adopts a novel empirical strategy that allows estimation of both the short- and medium-term effects of public investment on a range of macroeconomic variables. Specifically, it isolates shocks to public investment that can plausibly be deemed exogenous to macroeconomic conditions and traces out the evolution of output, the public-debt-to-GDP ratio, and private investment in the aftermath of these shocks.

[15]See Romp and de Haan 2007; Straub 2011; and Bom and Ligthart, forthcoming, for a survey of the literature.

Figure 3.4. Quality of Infrastructure in G7 Economies
(Scale, 1–7; higher score indicates better infrastructure)

In some advanced economies, there are signs of deteriorating quality in the existing infrastructure stock.



Sources: World Economic Forum, Global Competitiveness Report survey; and IMF staff calculations.
Note: The G7 comprises Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.

Since data on public infrastructure investment are not widely available, the empirical analysis examines the macroeconomic effects of total public investment, which may include investment in noninfrastructure items. To the extent that the productivity-enhancing effects of other public investments are lower than those for core infrastructure investment (see for example Bom and Ligthart, forthcoming), the estimates in the chapter present a lower bound on the long-term effects of public infrastructure investment.

The empirical analysis is complemented by model simulations for both advanced and developing economies, which helps identify the role of additional factors, such as monetary policy, investment efficiency, and productivity of public infrastructure capital.

An Empirical Exercise for Advanced Economies

The analysis begins by assessing the macroeconomic impact of public investment shocks in advanced economies, using the approach of Auerbach and Gorodnichenko (2012, 2013). In this approach, public investment shocks are identified as the forecast error of public investment spending relative to GDP. This procedure overcomes the problem of fiscal foresight (Forni and Gambetti 2010; Leeper, Richter, and Walker 2012; Leeper, Walker, and Yang 2013; Ben Zeev and Pappa 2014), because it aligns the economic agents' and the econometrician's information sets. Two econometric specifications are used. The first establishes whether these unanticipated shocks have significant effects on macroeconomic variables such as output, public-debt-to-GDP ratios, and private investment. The second is used to analyze whether these effects vary with the state of the economy, public investment efficiency, and the way higher public investment is financed (that is, whether it is debt financed or budget neutral).[16]

The analysis shows that public investment shocks have statistically significant and long-lasting effects on output (Figure 3.5, panel 1). An unanticipated 1 percentage point of GDP increase in investment spending increases the level of output by about 0.4 percent in the same year and by 1.5 percent four years after the shock. Using the sample average of government investment as a percentage of output (about 3 percent of GDP), this implies short- and medium-term investment spending multipliers of about 0.4 and 1.4, respectively. These multipliers are consistent with other estimates reported in the literature (see Coenen and others 2012 and literature cited therein).[17] The results are also robust to different time samples and when public investment shocks are isolated from other government spending shocks, as well as from unexpected changes in output.[18]

The point estimates in panel 2 of the figure show that higher public investment spending typically reduces the debt-to-GDP ratio both in the short term (by about 0.9 percentage point of GDP) and in the medium term (by about 4 percentage points of GDP), but the decline in debt is statistically significant only in the short term. There is no statistically significant effect on private investment as a share of GDP (panel 3). The latter finding suggests the crowding in of private investment, as the level of private investment rises in tandem with the higher GDP as a result of the increase in public investment.

The macroeconomic effects of public investment shocks are very different across economic regimes (Figure 3.6, panels 1 through 4).[19] During periods of low growth, a public investment spending shock increases the level of output by about 1½ percent in the same year and by 3 percent in the medium term, but during periods of high growth the long-term effect is not statistically significantly different from zero.[20] Public investment shocks also bring about a reduction in the public-debt-to-GDP ratio during periods of low growth because of the much bigger boost in output. During periods of high growth, the point estimates suggest a rise in public debt, though the wide confidence intervals imply that these are not statistically significantly different from zero.[21]

In addition, the macroeconomic effects of public investment shocks are substantially stronger in coun-

[16]See Appendix 3.2 for details.

[17]These results are qualitatively similar if one estimates the impact of simple changes in public investment as a share of GDP instead of using forecast errors; see Appendix 3.2.

[18]A potential concern, for example, is that public investment shocks may respond to output growth surprises: public investment could be accelerated when unexpected growth provides funds, for example, or slowed when growth disappointments decrease revenues. In data from 17 advanced economies over the period 1985–2013, public investment innovations are only weakly correlated with output growth surprises (correlation –0.11). Moreover, purifying public investment shocks by removing the portion explained by growth surprises delivers results that are very similar to and not statistically significantly different from those reported in the baseline (see Appendix 3.2).

[19]Economic regimes are identified as periods of very low growth (recessions) and very high growth (significant expansions). Periods of very low (high) growth identified in this analysis correspond to periods of large negative (positive) output gaps: during periods of very low (high) growth, the output gap varies between –0.4 and –7.2 (–1.1 and 8.5) percent of potential output, with an average output gap of –3.7 (3.5) percent. Using the output gap instead of growth rates to identify economic regimes gives qualitatively similar results. In particular, during periods of large negative output gaps, the short-term multiplier is 0.6 and is statistically significant, but when output gaps are large and positive, the output effect of public investment is 0.2 and not statistically significant.

[20]This finding is consistent with a growing literature that explores the effect of fiscal policy during recessions and expansions (see Auerbach and Gorodnichenko 2012; Blanchard and Leigh 2013; and IMF 2013 and the literature cited therein).

[21]One possibility is that these results are driven by the fact that these shocks occur in periods of economic recovery. However, no statistically significant correlation is found between the measure of investment spending shocks used and the economic regime. In particular, the correlation between investment spending shocks and the economic regime (or the change in the economic regime) is –0.01 (0.01).

tries with a high degree of public investment efficiency, both in the short and in the medium term (Figure 3.6, panels 5 through 8). In countries with high efficiency of public investment, a public investment spending shock increases the level of output by about 0.8 percent in the same year and by 2.6 percent four years after the shock. But in countries with low efficiency of public investment, the output effect is about 0.2 percent in the same year and about 0.7 percent in the medium term. As a result, although public investment shocks are found to lead to a significant medium-term reduction in the debt-to-GDP ratio (about 9 percentage points four years after the shock) in countries with high public investment efficiency, they tend to increase the debt-to-GDP ratio (albeit not in a statistically significant manner) in countries with low public investment efficiency.

The output effects are larger when public investment shocks are debt financed than when they are budget neutral (Figure 3.6, panels 9 to 12).[22] In particular, although a debt-financed public investment shock of 1 percentage point of GDP increases the level of output by about 0.9 percent in the same year and by 2.9 percent four years after the shock, the short- and medium-term output effects of a budget-neutral public investment shock are not statistically significantly different from zero. The larger short- and medium-term output multipliers for debt-financed shocks imply that the reduction in the debt-to-GDP ratio is similar in the two types of shocks.

It is possible that increasing debt-financed public investment in countries with debt that is already high may increase sovereign risk and financing costs if the productivity of the investment is in doubt (possibly because of poor project selection), which in turn could lead to further debt accumulation, exacerbating debt sustainability concerns.[23] Within the sample of 17 advanced economies employed in the estimation, the empirical evidence suggests that historically, debt-financed public investment shocks have not led to increases in funding costs, as proxied by sovereign real

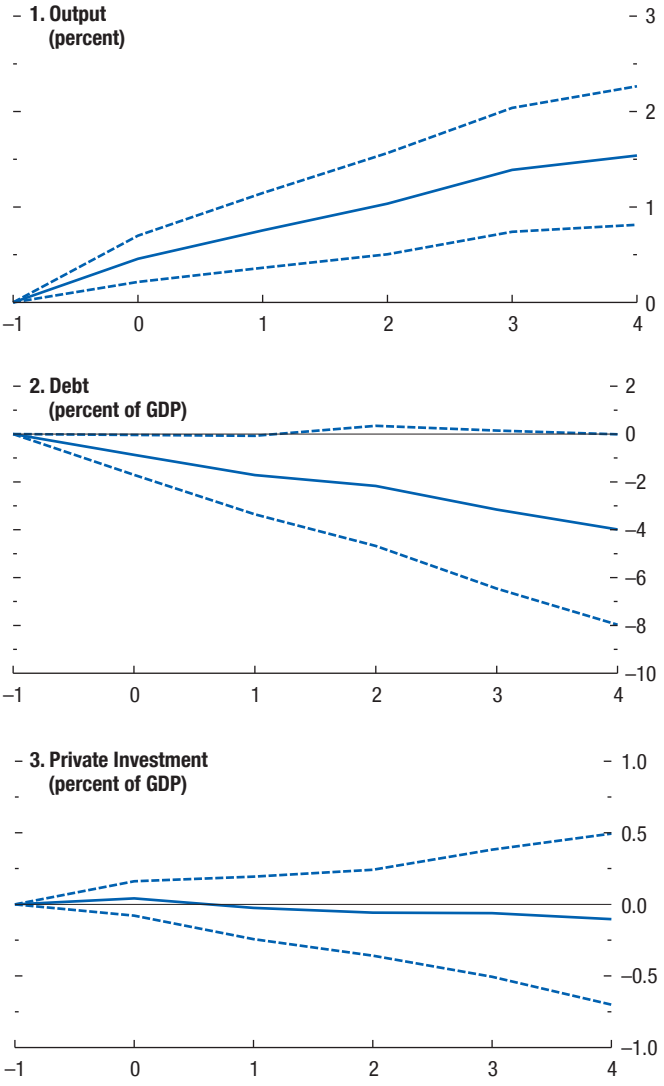
[22]Budget-neutral public investment shocks are identified as those in which the difference between the shocks to other components of the government budget and public investment shocks is greater than or equal to zero.

[23]Empirical evidence for emerging markets suggests that debt-financed public spending is associated with higher and more volatile sovereign risk spreads than tax-financed spending (Akitoby and Stratmann 2008). For further discussion of the links between public debt, public investment, and growth, see Ostry, Ghosh, and Espinoza 2014.

Figure 3.5. Effect of Public Investment in Advanced Economies

(Years on x-axis)

Public investment shocks have a statistically significant and long-lasting effect on output. They also typically reduce the debt-to-GDP ratio, though the decline in debt is statistically significant only in the short term. The level of private investment rises in tandem with GDP.

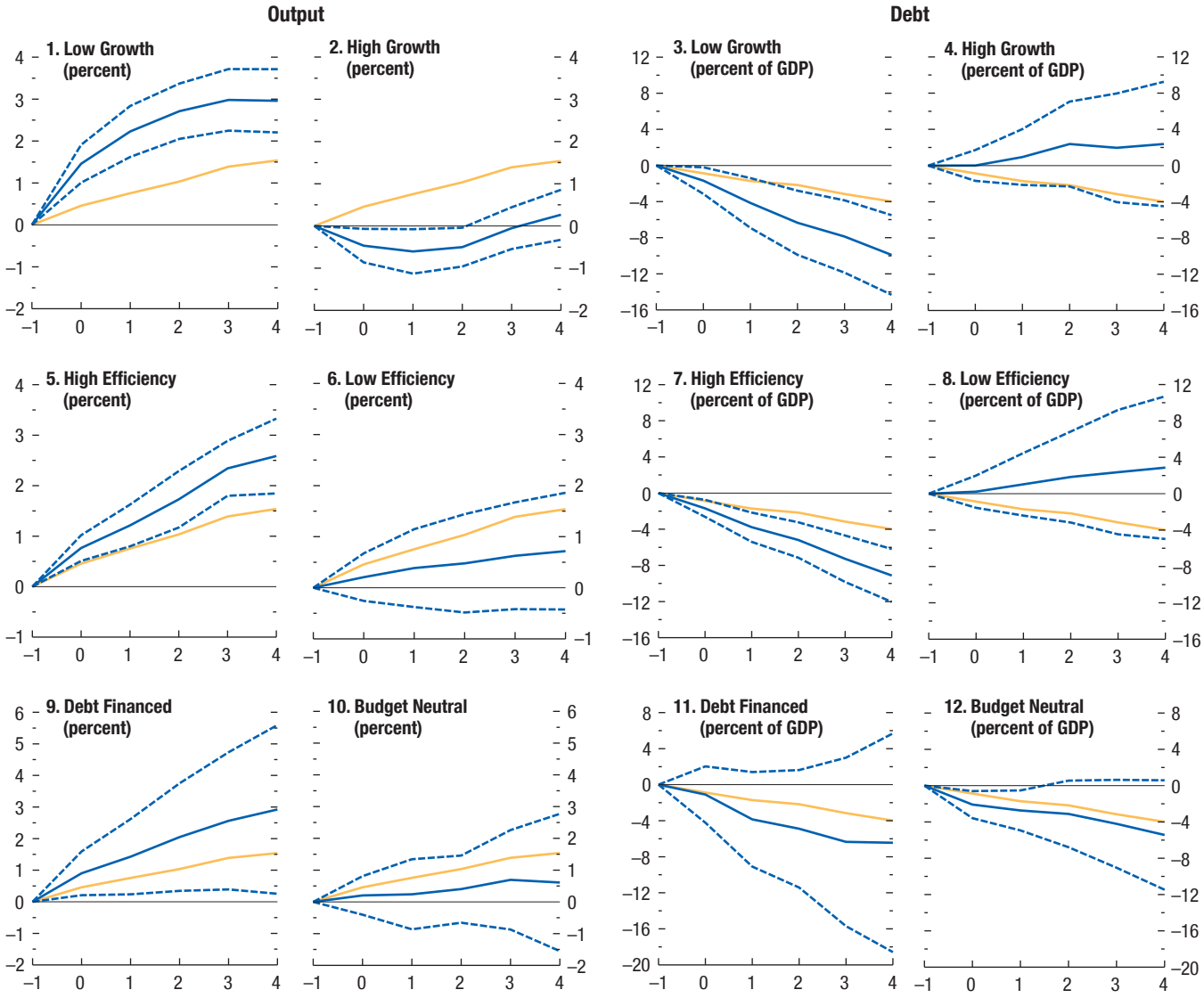


Source: IMF staff calculations.
Note: $t = 0$ is the year of the shock; dashed lines denote 90 percent confidence bands. Shock represents an exogenous 1 percentage point of GDP increase in public investment spending.

Figure 3.6. Effect of Public Investment in Advanced Economies: Role of Economic Conditions, Efficiency, and Mode of Financing

(Years on x-axis)

The effects of public investment on output and debt tend to be stronger when there is economic slack, when public investment efficiency is high, and when public investment is debt financed.



Source: IMF staff calculations.

Note: $t = 0$ is the year of the shock; dashed lines denote 90 percent confidence bands. Solid yellow lines represent the baseline result. See the text and Appendix 3.2 for the definition of high and low growth, high and low efficiency, and debt financed versus budget neutral. Shock represents an exogenous 1 percentage point of GDP increase in public investment spending.

interest rates. Moreover, an examination of whether the effects of public investment shocks on debt and output depend on the initial level of public debt yields no evidence that historically, the effects of public investment differ materially according to the initial public-debt-to-GDP ratio. This may, however, be a result of lower debt-to-GDP ratios in advanced economies during most of the sample period.

An Empirical Exercise for Developing Economies

The empirical strategy used for the sample of advanced economies requires forecasts of public investment, which are not available over a long time span for economies that are not members of the Organisation for Economic Co-operation and Development. Given this data limitation, three different approaches are used that provide complementary evidence on the macroeconomic effects of public investment in developing economies.[24]

The first approach is to examine episodes of public investment booms and trace the evolution of key macroeconomic variables in the aftermath of large and sustained increases in public investment. The goal of this exercise is simply to establish the stylized facts about the macroeconomic conditions surrounding booms, rather than to estimate the causal effect of major pushes in infrastructure investments. Estimating the causal impact of booms is confounded by the fact that whether a country undergoes an investment boom and when a boom occurs are not exogenous to the country's macroeconomic conditions. For example, a shock that raises expected growth (for example, a sustained terms-of-trade boom or discovery of natural resources) may prompt governments to invest in infrastructure now, inducing a positive correlation between output and investment. Nevertheless, examining these large investment booms is a useful exercise for two reasons. First, a number of low-income countries have considerably stepped up government investment in recent years as a way to jump-start their economies in the face of weak external demand and infrastructure bottlenecks. Second, there are various theoretical reasons for such large investment drives to have different consequences relative to the average impact of public investment shocks that is picked up by the other two strategies.[25] This analysis follows Warner (2014) in identifying investment booms as a sustained and significant increase in the government investment ratio. Once the initial year of the investment boom is identified, the evolution of key macroeconomic variables is traced in the period following the start of the public investment push.

The historical experience with public investment booms paints a similar picture to the estimated macroeconomic impacts of public investment in advanced economies (Figure 3.7). About 120 public investment booms in the sample are identified, the vast majority of them in emerging market and developing economies. These booms are characterized by large and sustained increases in government investment spending: public investment as a share of GDP rises by about 7 percentage points of GDP in the first years of the boom. During this period, the level of output continuously increases, stabilizing after the fifth year at a level about 8 percent higher than in the year before the boom. This suggests a public investment multiplier of about 1–1.3.[26]

The analysis also traces the evolution of public debt after the beginning of a boom. The estimates' standard errors are large, but there is no evidence of an increase in the debt-to-GDP ratio in the aftermath of a boom. If anything, the negative point estimates suggest a relative decline in public debt as a share of output five years after the beginning of the boom. However, as shown in Appendix 3.2, the declining public debt ratio is driven by investment booms in commodity-exporting economies, in which stepped-up government investment could well have coincided with natural resource windfalls for public revenues.

The second approach to examining the macroeconomic consequences of public investment in developing countries is inspired by Corsetti, Meier, and Müller (2012). The empirical strategy relies on the idea that significant parts of government spending (investment in particular) are likely determined by past information and cannot easily respond to current economic conditions.[27] Thus, one can estimate a fiscal policy

[24]Details of these methodologies can be found in Appendix 3.2.

[25]Complementarities between different infrastructure projects and public and private investment may lead to disproportionate gains from coordinated pushes in infrastructure—the main hypothesis behind "big push" theories of development. On the other hand, large scaling up of public investment may result in the implementation of inframarginal projects and thus have lower-than-average impact (Warner 2014).

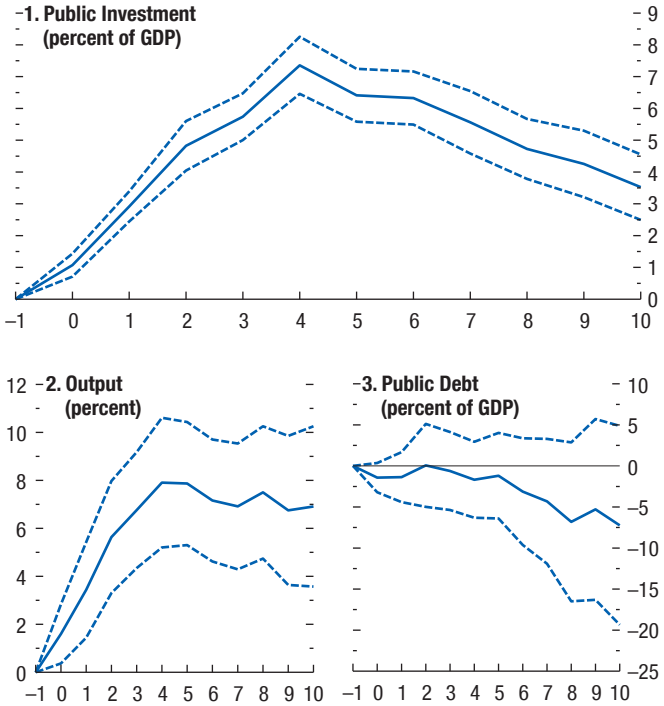
[26]These findings are somewhat different from those in the recent study by Warner (2014), who analyzes the growth impacts of public investment booms in a smaller set of low-income countries.

[27]In principle, this assumption can be violated for two reasons. First, public investment can automatically respond to cyclical conditions. This, however, should not pose a problem, because automatic stabilizers operate mostly via revenues and social spending. Second,

Figure 3.7. Output and Public Debt in the Aftermath of Public Investment Booms

(Years on x-axis)

Public investment booms in emerging market and developing economies are associated with higher output.



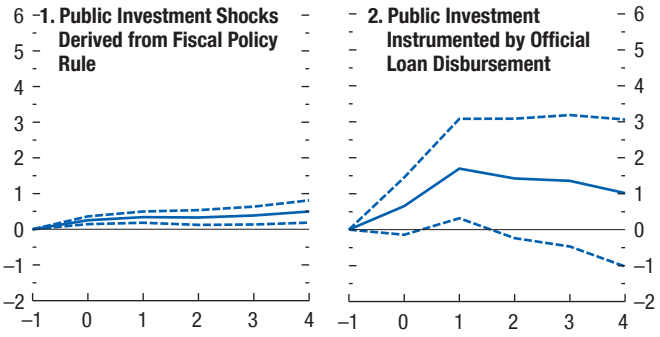
Source: IMF staff calculations.
Note: $t = 0$ is the beginning of a public investment boom; dashed lines denote 90 percent confidence bands. See Appendix 3.2 for a definition of public investment booms.

rule for public investment and from this obtain a series of exogenous shocks to public investment.[28] The estimated policy shocks are then used to trace the dynamic effects of public investment on output.

Figure 3.8. Effect of Public Investment on Output in Emerging Market and Developing Economies

(Percent; years on x-axis)

Various empirical approaches suggest that public investment shocks in emerging market and developing economies have a positive effect on output, albeit with a much wider variation in responses than in advanced economies.



Sources: IMF staff calculations, drawing on Corsetti, Meier, and Müller 2012; Kraay 2012, forthcoming; and Eden and Kraay 2014.
Note: $t = 0$ is the year of the shock; dashed lines denote 90 percent confidence bands. Shock represents an exogenous 1 percentage point of GDP increase in public investment spending.

The third approach builds on recent work by Kraay (2012, forthcoming) and Eden and Kraay (2014) and applies primarily to low-income countries. In many of these countries, loans from official creditors such as the World Bank and other multilateral and bilateral aid agencies finance a significant fraction of government spending. The disbursements of these loans and the spending they finance are spread out over many years following the approval of the loans. Hence, part of the fluctuation in government investment is predetermined, as it reflects loan approvals in previous years. If one assumes that loan approval decisions made by creditors do not anticipate future macroeconomic shocks that affect output, this predetermined component of spending can be used as an instrument for total government investment to identify the causal impact of public investment on output.

These two approaches suggest that public investment may have a positive effect on output (Figure 3.8). The estimated effects are substantially smaller using the fiscal policy rule methodology, though they are more precisely estimated (panel 1). The contemporaneous effect of a 1 percentage point of GDP increase in public investment is a 0.25 percent increase in output, which gradually increases to about 0.5 percent four years after the shock. The Eden and Kraay (2014) methodology yields larger but much more imprecisely estimated

discretionary public investment spending can occur in response to output conditions. As discussed in Corsetti, Meier, and Müller 2012, the relevance of this concern relates to the precise definition of contemporaneous feedback effects. Although it is typically assumed in the literature that government spending does not react to changes in economic activity within a given quarter (Blanchard and Perotti 2002), whether it may respond in a period longer than a quarter is an open question. Recent evidence for advanced economies (Beetsma, Giuliodori, and Klaassen 2009; Born and Müller 2012), however, suggests that the restriction that government spending not respond to economic conditions within a year cannot be rejected.

[28]This identification strategy is very similar to the structure embedded in fiscal policy vector autoregression. The fiscal policy rule links the change in government investment to its lags, lagged growth, current and lagged public indebtedness, and expectations of the next year's growth.

coefficients, with the effect of a public investment shock of about 1 percent four years after the shock (panel 2). The wide confidence bands preclude rejection of the null hypothesis that the two methodologies lead to identical estimates of the effect of public investment on output. The estimated medium-term multiplier is between 0.5 and 0.9, slightly lower than the multiplier estimated for advanced economies.

A Model-Based Approach

The empirical approaches in the preceding sections assess the short- and medium-term macroeconomic effects of public investment. But they are not well suited to estimating the effects of public investment shocks over longer periods (for example, more than 10 years), nor can they fully address issues that are relevant today but have little historical precedent, such as the zero floor on nominal interest rates in many advanced economies and the current environment of very low real interest rates (see Chapter 3 of the April 2014 *World Economic Outlook*).[29] Therefore, to complement the empirical analysis, this section looks at the macroeconomic effects of public investment shocks using dynamic general-equilibrium models. An additional advantage of relying on model simulations is that in these models, public investment shocks are strictly exogenous and no identification assumptions are needed.

Simulations for advanced and emerging market economies use the IMF's Globally Integrated Monetary and Fiscal model.[30] Simulations for low-income countries are based on the model of Buffie and others (2012), which captures aspects pertinent to low-income countries, such as low public investment efficiency, absorptive capacity issues, and limited access to international and domestic borrowing (see Box 3.4).

A critical input in the model-based analysis is the elasticity of output to public capital. There is now a substantial literature, triggered by the seminal contributions of Aschauer (1989), that estimates the long-term elasticity of output to public capital. A cursory reading of the literature reveals estimates ranging widely, from large and positive to slightly negative. However, a recent meta-analysis by Bom and Ligthart (forthcoming) of 68 of these studies shows that much of the variation in estimates can be attributed to differences in research design, including how public infrastructure capital is defined, what output measure is used, whether capital is installed at the national level or by state and local governments, the econometric specification and sample coverage, and whether endogeneity and nonstationarity are properly addressed. Controlling for these factors, Bom and Ligthart come up with a much narrower range for the estimated output elasticity of public capital (Table 3.1). In particular, they suggest that the elasticity of core infrastructure installed by a national government is 0.17. This is the estimated elasticity that is assumed in the simulations in this chapter.[31]

Table 3.1. Elasticity of Output to Public Capital

	All Public Capital	Core Infrastructure Capital
Installed by National Government	0.122	0.170
Installed by Subnational Government	0.145	0.193

Source: Bom and Ligthart, forthcoming.

Model simulations for advanced economies

Since the global financial crisis, policy rates in the largest advanced economies have been near zero and are expected to remain at this level in the near term because of still-large output gaps (see Chapter 1). The effects of public investment shocks under these conditions are examined through a simulation of the macroeconomic response of output, the public-debt-to-GDP ratio, and private investment to a 1 percent of GDP increase in public investment, assuming that monetary policy rates stay close to zero for two years.[32] The results of this simulation suggest that a 1 percent of GDP permanent increase in public investment increases output by about 2 percent in the same year. Output declines in the third year after the shock as monetary policy normalizes, then increases to 2.5 per-

[29]Japan's experience with public investment in the 1990s is perhaps the most relevant historical example; for details, see Box 3.1.

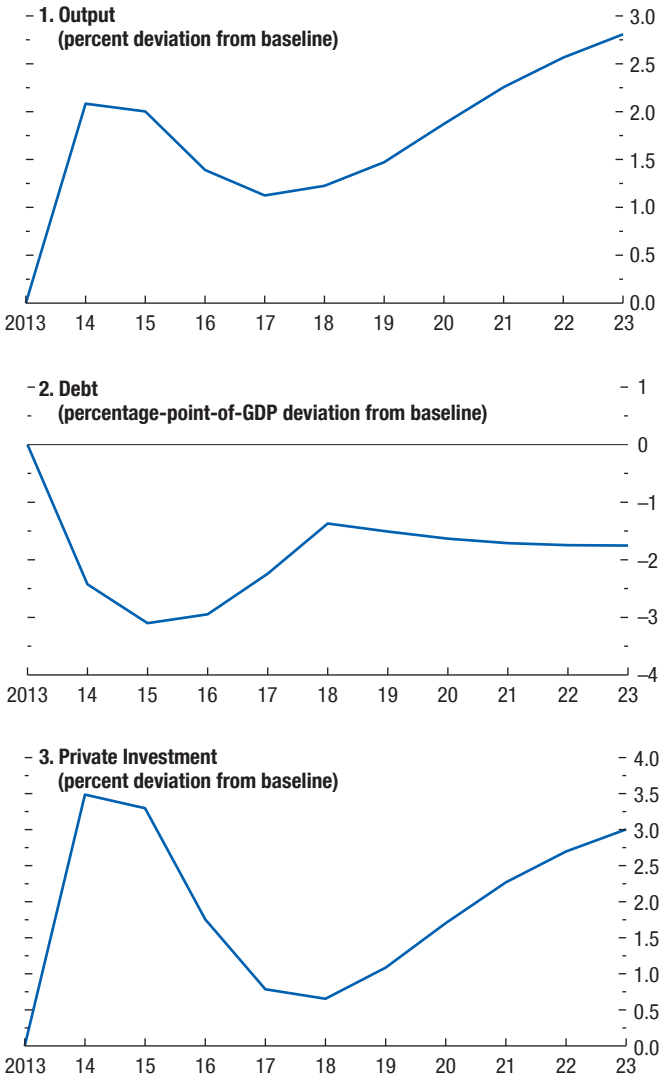
[30]For a detailed description of the model, see Kumhof and Laxton 2007 and Kumhof, Muir, and Mursula 2010.

[31]Panels 5 and 6 of Figure 3.10 illustrate how different assumptions regarding the elasticity of output to public capital affect the results.

[32]There are two main reasons to assume that policy rates stay near zero for two years. First, such an assumption is in line with market expectations about policy rates for most large advanced economies. Second, in the model, the only way the central bank can stabilize output and inflation is by cutting nominal interest rates. When the option of cutting interest rates is removed for a longer period—for example, three or more years—the model generates unstable macroeconomic dynamics, which complicates the computation of simulation results.

Figure 3.9. Model Simulations: Effect of Public Investment in Advanced Economies in the Current Scenario

When monetary policy in advanced economies is accommodative, public investment shocks have a substantial short-term effect on output, bringing about a decline in the public-debt-to-GDP ratio.



Source: IMF staff estimates.
Note: Shock represents an exogenous 1 percentage point of GDP increase in public investment spending.

cent over the long term because of the resulting higher stock of public capital (Figure 3.9, panel 1). Similarly, private investment increases both in the short and in the long term (Figure 3.9, panel 3). The large output effects imply that the debt-to-GDP ratio declines, by about 3 percentage points of GDP three years after the shock, after which it increases somewhat, stabilizing at about 1.5 percentage points of GDP below the baseline five years after the shock.[33]

How different would the results be under normal conditions of less slack and an immediate monetary policy response to the increase in public investment? In this case, the short-term output effects would be much smaller. As a result, the debt-to-GDP ratio would eventually rise, stabilizing at a level 1.5 percentage points of GDP higher than the baseline (Figure 3.10, panels 1 and 2). These results are broadly consistent with the empirical evidence in the previous subsections.

These simulations implicitly assume that public investment is fully efficient, that is, that each dollar invested translates into productive public capital. However, it is likely that in countries with a lower degree of investment efficiency, the resulting output effects are smaller. The simulations presented in Figure 3.10, panels 3 and 4, confirm and quantify these results. In countries with a lower degree of investment efficiency, a 1 percentage point of GDP increase in public investment increases output by about 2.2 percent in the long term, compared with about 2.8 percent in countries where public investment is fully efficient. As a result, in countries with a low degree of investment efficiency, the debt-to-GDP ratio would decline less than in countries with full investment efficiency.

Model simulations for developing economies

Are the macroeconomic effects of public investment in emerging market economies and low-income countries similar to those in advanced economies? As previously illustrated, a central factor currently at work in advanced economies (but currently not present in developing economies) is substantial economic slack and very accommodative monetary

[33]The public investment shock is debt financed for the first five years. The debt-to-GDP ratio is stabilized and general transfers adjust to satisfy the fiscal rule afterward. The model needs to include a fiscal rule to ensure that it generates stable macroeconomic dynamics. Note, however, that given the large output effects, general transfers end up at a level higher than what prevailed in the absence of the shock.

policy. Another important difference between these two groups is that public investment efficiency in advanced economies is typically higher than that in emerging market and low-income economies (Box 3.2). Because of these two factors, a public investment shock of similar size leads to considerably lower long-term output effects in emerging market economies and low-income countries than in advanced economies (Figure 3.11 and Box 3.4). This phenomenon also has implications for public debt dynamics. The model simulations suggest that increased public investment may be self-financing under current conditions in advanced economies (in the sense that the public-debt-to-GDP ratio does not rise), but higher public investment would mean a higher public-debt-to-GDP ratio in emerging market economies and low-income countries.

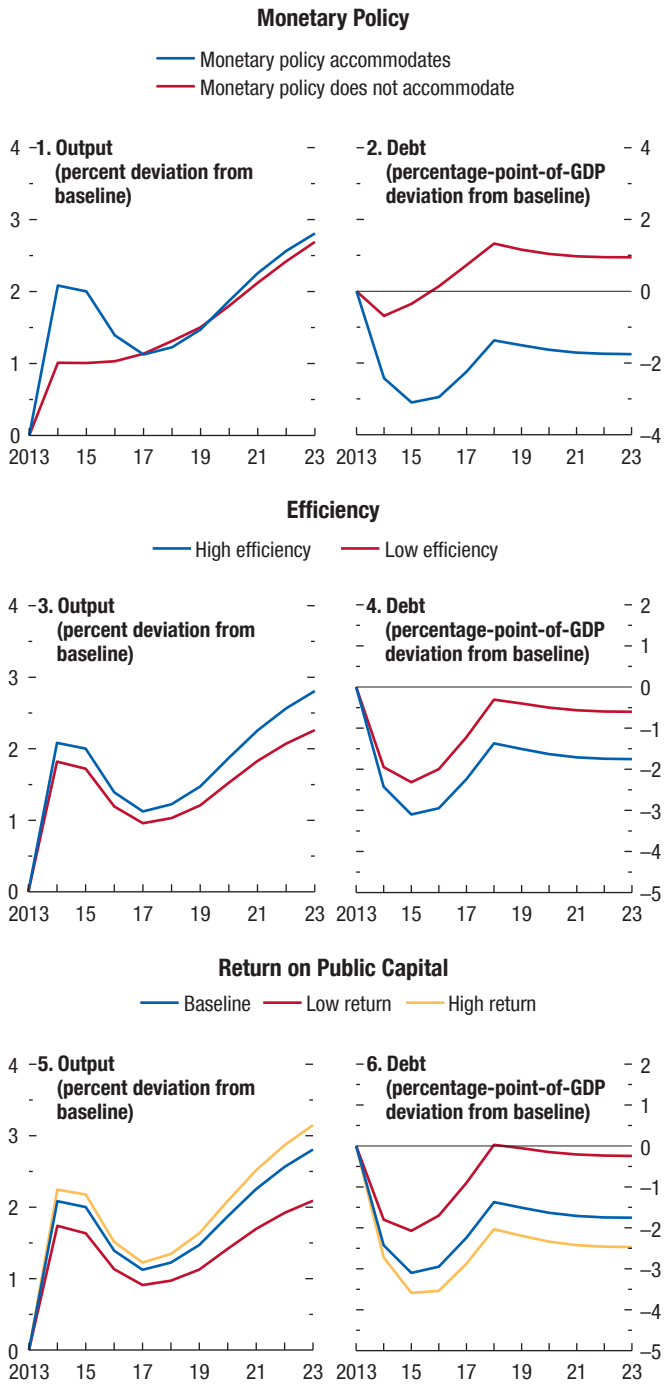
Summary and Policy Implications

Is now a good time for an infrastructure push? This chapter documents a substantial decline in public capital as a share of output over the past three decades across advanced, emerging market, and developing economies. It also notes that, in per capita terms, infrastructure provision in emerging market economies and low-income countries is still only a fraction of what it is in advanced economies. As for the macroeconomic impact of increased public investment, the chapter finds that such investment raises output in both the short and long term. It also finds that these effects vary with a number of mediating factors, and these are fundamental to teasing out the chapter's policy implications.

For economies with clearly identified infrastructure needs and efficient public investment processes and where there is economic slack and monetary accommodation, there is a strong case for increasing public infrastructure investment. Moreover, evidence from advanced economies suggests that an increase in public investment that is debt financed would have larger output effects than an increase that is budget neutral, with both options delivering similar declines in the debt-to-GDP ratio. Current conditions present an opportunity to increase public investment, for those economies where the aforementioned conditions hold. The increased public investment would provide a much-needed boost to demand in the short term and would also help raise potential output in the long term. These conclusions should not, however, be interpreted as a

Figure 3.10. Model Simulations: Effect of Public Investment in Advanced Economies—Role of Monetary Policy, Efficiency, and Return on Public Capital

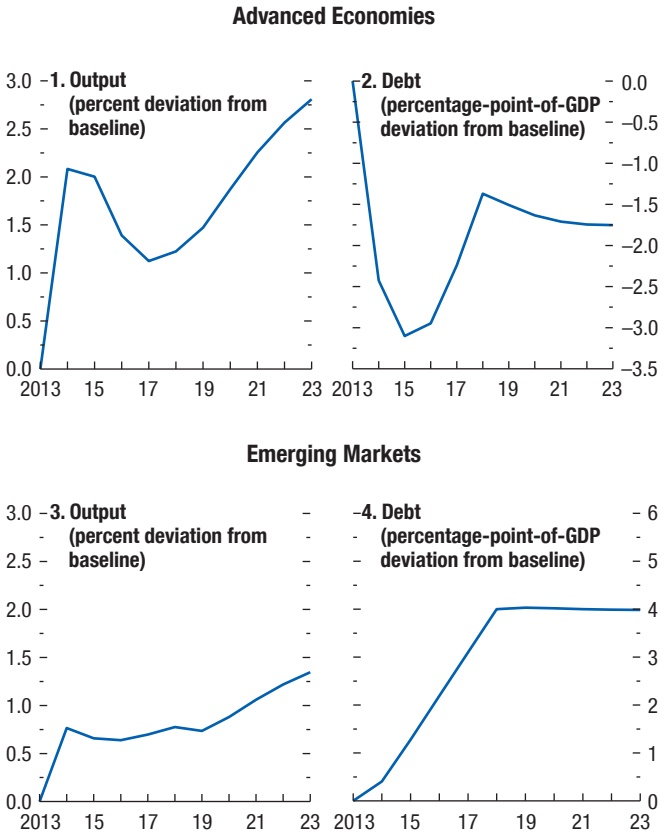
If monetary policy is not accommodative, the short-run output impact of public investment shocks is smaller. Differences in public investment efficiency and return on public capital will also shape the macroeconomic response.



Source: IMF staff estimates.
Note: Shock represents an exogenous 1 percentage point of GDP increase in public investment spending.

Figure 3.11. Model Simulations: Effect of Public Investment in Advanced Economies and Emerging Markets

The response of output to public investment shocks is smaller in emerging market economies, because the lack of slack implies an immediate monetary policy response, and because public investment efficiency is relatively lower.



Source: IMF staff estimates.
Note: Economy groups are defined in Appendix 3.1. Shock represents an exogenous 1 percentage point of GDP increase in public investment spending.

blanket recommendation for a debt-financed public investment increase across all economies. Adverse market reactions—which could occur in some countries with already-high debt-to-GDP ratios or where returns to infrastructure investment are uncertain—could raise financing costs and further increase debt pressure.

But if infrastructure needs are indeed pressing and investment may be self-financing for some economies—in the sense that the public-debt-to-GDP ratio may not rise as a result of investment—why is public investment in advanced economies at a three-decade low? The reason is that in practice, public investment decisions frequently are not guided by economic rationale. This can cut both ways—inefficient and unproductive projects are often pursued by politicians and line ministries when they should not be, and some productive projects (and importantly, maintenance) are forgone when they should be given priority. Regarding the latter, Box 3.5 illustrates how improvements in fiscal institutions and some fiscal rules seem to help preserve public investment during periods of fiscal consolidation.

For many emerging market economies and low-income countries, there is a pressing need for additional infrastructure to support economic development. But increasing public investment may lead to limited output gains, if efficiency in the investment process is not improved. Historically, there has been much wider variation in the macroeconomic effects of public investment, and the empirical estimates of the macroeconomic effects of public investment are as a result much less precise. Model-based simulations suggest that public investment does raise output in both the short and long term, but at the cost of rising public-debt-to-GDP ratios because of the general absence of economic slack and the relatively low efficiency of such investment. Thus, negative fiscal consequences should be carefully weighed against the broader social gains from increased public investment. For those emerging market and developing economies where infrastructure bottlenecks are constraining growth, the gains from alleviating these bottlenecks could be large.

Increasing investment efficiency is critical to mitigating the possible trade-off between higher output and higher public debt. Thus a key priority in many economies, particularly in those with relatively low efficiency of public investment, should be to raise the quality of infrastructure investment by improving the public investment process (Box 3.2). Improvement could involve, among other reforms, better project appraisal and selection that identifies and targets infrastructure bottlenecks, including through centralized independent reviews, rigorous cost-benefit analysis, risk costing, and zero-based budgeting principles. As the April 2014 *Fiscal Monitor* notes, only half of the increase in government investment in emerging market and developing economies during 1980–2012 translated into productive capital; it also finds that reducing all inefficiencies in public investment by 2030 would provide the same boost to the capital stock as increasing government investment by 5 percentage points of GDP in emerging market economies and by 14 percentage points of GDP in low-income countries.

Appendix 3.1. Data Sources and Country Groupings

Country Groups

The members of the economy groupings used in the chapter's analyses are shown in Table 3.2. These include 36 advanced economies, as listed in Table B of the Statistical Appendix, 94 emerging market economies, and 59 low-income developing countries. The latter two groups comprise the 153 economies categorized as a single group under the term "emerging market and developing economies" in Table E of the Statistical Appendix.

Data Sources

The primary data sources for this chapter are the *World Economic Outlook* (WEO), the Organisation for Economic Co-operation and Development (OECD), and the April 2014 *Fiscal Monitor*. All data sources used in the analysis are listed in Table 3.3. For indicators with multiple sources, the sources are listed in the order in which they are spliced (which entails extending the level of a primary series using the growth rate of a secondary series).

Appendix 3.2. The Macroeconomic Effects of Public Investment

Conceptual Framework

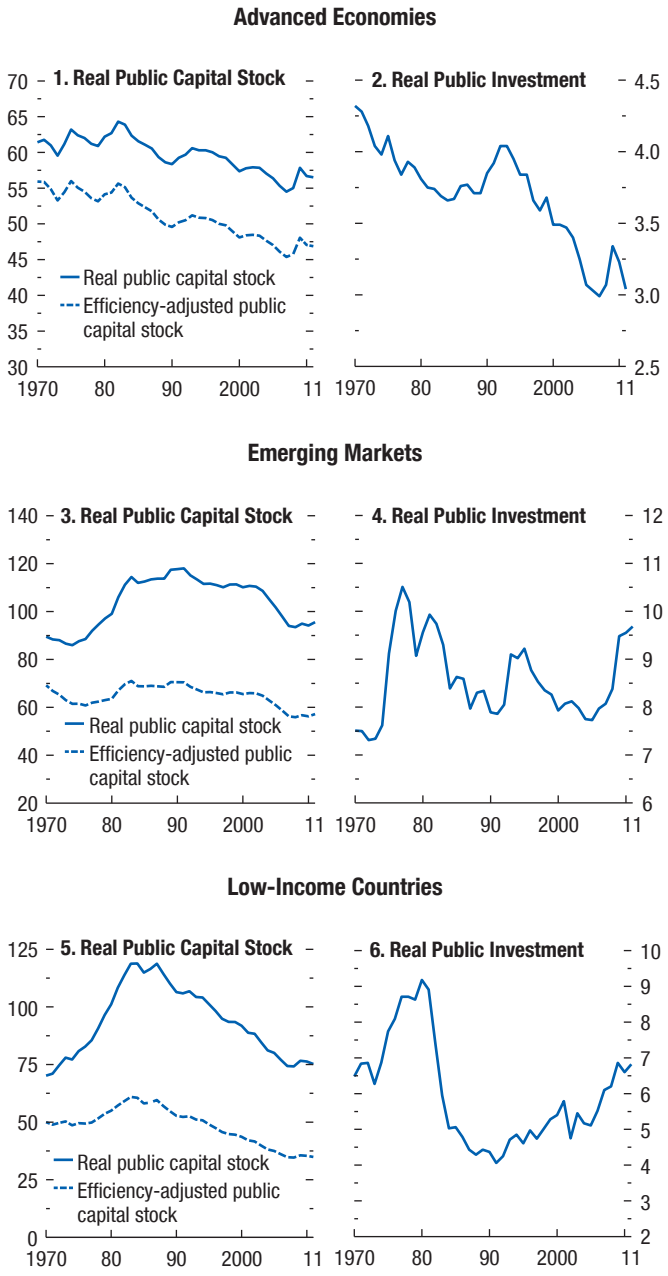
What are the effects of public investment on output and the debt-to-GDP ratio? Following Delong and Summers (2012), this section presents a highly stylized framework for assessing the effect of public investment on output and the debt-to-GDP ratio and for evaluating under which conditions an increase in public investment is self-financing.

In the short term, an increase in public investment boosts aggregate demand through the short-term fiscal multiplier. This increase in government spending will also affect the debt-to-GDP ratio, which may increase or decrease depending on the size of the fiscal multiplier and on the elasticity of revenues to output. More formally, in the short term (one year), an increase in public investment as a share of potential GDP (Δi) leads to a change in the debt-to-potential-GDP ratio (Δd) given by

$$\Delta d = (1 - \mu\tau)\Delta i, \qquad (3.1)$$

in which μ is the fiscal multiplier and τ is the marginal tax rate.

Figure 3.12. Evolution of Public Capital Stock and Public Investment
(Percent of GDP, purchasing-power-parity weighted)



Sources: IMF, Fiscal Monitor database; and IMF staff calculations.
Note: Economy groups are defined in the text.

Table 3.2. Economy Group Composition

Advanced Economies		
Australia	Hong Kong SAR	Norway
Austria	Iceland	Portugal
Belgium	Ireland	San Marino
Canada	Israel	Singapore
Cyprus	Italy	Slovak Republic
Czech Republic	Japan	Slovenia
Denmark	Korea	Spain
Estonia	Latvia	Sweden
Finland	Luxembourg	Switzerland
France	Malta	Taiwan Province of China
Germany	Netherlands	United Kingdom
Greece	New Zealand	United States
Emerging Market Economies		
Albania	Grenada	Philippines
Algeria	Guatemala	Poland
Angola	Guyana	Qatar
Antigua and Barbuda	Hungary	Romania
Argentina	India	Russia
Armenia	Indonesia	Samoa
Azerbaijan	Iran	Saudi Arabia
The Bahamas	Iraq	Serbia
Bahrain	Jamaica	Seychelles
Barbados	Jordan	South Africa
Belarus	Kazakhstan	Sri Lanka
Belize	Kosovo	St. Kitts and Nevis
Bosnia and Herzegovina	Kuwait	St. Lucia
Botswana	Lebanon	St. Vincent and the Grenadines
Brazil	Libya	Suriname
Brunei Darussalam	Lithuania	Swaziland
Bulgaria	FYR Macedonia	Syria
Cabo Verde	Malaysia	Thailand
Chile	Maldives	Timor-Leste
China	Marshall Islands	Tonga
Colombia	Mauritius	Trinidad and Tobago
Costa Rica	Mexico	Tunisia
Croatia	Micronesia	Turkey
Dominica	Montenegro	Turkmenistan
Dominican Republic	Morocco	Tuvalu
Ecuador	Namibia	Ukraine
Egypt	Oman	United Arab Emirates
El Salvador	Pakistan	Uruguay
Equatorial Guinea	Palau	Vanuatu
Fiji	Panama	Venezuela
Gabon	Paraguay	
Georgia	Peru	
Low-Income Developing Countries		
Afghanistan	Guinea	Niger
Bangladesh	Guinea-Bissau	Nigeria
Benin	Haiti	Papua New Guinea
Bhutan	Honduras	Rwanda
Bolivia	Kenya	São Tomé and Príncipe
Burkina Faso	Kiribati	Senegal
Burundi	Kyrgyz Republic	Sierra Leone
Cambodia	Lao P.D.R.	Solomon Islands
Cameroon	Lesotho	South Sudan
Central African Republic	Liberia	Sudan
Chad	Madagascar	Tajikistan
Comoros	Malawi	Tanzania
Democratic Republic of the Congo	Mali	Togo
Republic of Congo	Mauritania	Uganda
Côte d'Ivoire	Moldova	Uzbekistan
Djibouti	Mongolia	Vietnam
Eritrea	Mozambique	Yemen
Ethiopia	Myanmar	Zambia
The Gambia	Nepal	Zimbabwe
Ghana	Nicaragua	

Table 3.3. Data Sources

Indicator	Source
Electricity Generation Capacity	Calderón, Moral-Benito, and Servén 2014; Canning 2007; World Bank, World Development Indicators Database
General Government Gross Debt	Abbas and others 2010; IMF, World Economic Outlook Database
Gross Domestic Product (constant prices)	IMF, World Economic Outlook Database; World Bank, World Development Indicators Database
Gross Domestic Product (current prices)	IMF, World Economic Outlook Database; World Bank, World Development Indicators Database
Gross Domestic Product Forecast (constant prices)	IMF, World Economic Outlook Database
Overall Quality of Infrastructure	World Economic Forum, *Global Competitiveness Report*
Population	IMF, World Economic Outlook Database; World Bank, World Development Indicators Database
Predicted Disbursement of Loans	Kraay, forthcoming
Private Gross Fixed Capital Formation (PPP-adjusted, 2005 U.S. dollars)	IMF, Fiscal Monitor Database (April 2014)
Public Gross Fixed Capital Formation (PPP-adjusted, 2005 U.S. dollars)	IMF, Fiscal Monitor Database (April 2014)
Quality of Roads	World Economic Forum, *Global Competitiveness Report*
Real Public Capital Stock (PPP-adjusted, 2005 U.S. dollars)	IMF, Fiscal Monitor Database (April 2014)
Roads	Calderón, Moral-Benito, and Servén 2014; World Bank, World Development Indicators Database; International Road Federation, World Road Statistics
Telephone Lines	Calderón, Moral-Benito, and Servén 2014; World Bank, World Development Indicators Database
Trade-Weighted Terms of Trade	April 2013 *World Economic Outlook,* Chapter 4
OECD countries	
Gross Domestic Product (constant prices)	OECD Statistics and Projections Database
Gross Domestic Product Forecast (constant prices)	OECD Statistics and Projections Database
Government Spending (constant prices)	OECD Statistics and Projections Database
Government Spending Forecast (constant prices)	OECD Statistics and Projections Database
Government Fiscal Balance	OECD Statistics and Projections Database
Government Fiscal Balance Forecast	OECD Statistics and Projections Database
Private Consumption (constant prices)	OECD Statistics and Projections Database
Private Consumption Forecast (constant prices)	OECD Statistics and Projections Database
Private Gross Fixed Capital Formation (constant prices)	OECD Statistics and Projections Database
Private Gross Fixed Capital Formation Forecast (constant prices)	OECD Statistics and Projections Database
Public Gross Fixed Capital Formation (constant prices)	OECD Statistics and Projections Database
Public Gross Fixed Capital Formation Forecast (constant prices)	OECD Statistics and Projections Database
General Government Gross Debt	IMF, World Economic Outlook Database

Note: OECD = Organisation for Economic Co-operation and Development; PPP = purchasing power parity.

Over time, the short-term increase in public investment will affect the debt-to-GDP ratio by affecting its annual debt-financing burden, which is equal to the difference between the real government borrowing rate (r) and the GDP growth rate (g) times the initial change in the debt-to-GDP ratio:

$$(r - g)\Delta d = (r - g)(1 - \mu\tau)\Delta i. \quad (3.2)$$

Whether this additional financing burden will lead to an increase in the debt-to-GDP ratio in the long term will depend on the parameters of equation (3.2) but also crucially on the elasticity of output to public capital. In particular, in the long term, an increase in public investment will lead to an increase in potential output (Y), which will generate long-term future tax dividends:

$$\tau\Delta Y = \tau\varepsilon y_0\Delta i, \quad (3.3)$$

in which ε is the long-term elasticity of output to public capital and y_0 is the initial output-to-public-capital

ratio.[34] Equations (3.2) and (3.3) imply together that if short-term multipliers and the elasticity of output to public capital are sufficiently large, such that

$$(r - g)(1 - \mu\tau) - \tau\varepsilon y_o \leq 0,$$

then at the margin, an increase in public investment will be self-financing.

Empirical Analysis for Advanced Economies

Baseline approach

The analysis in this section assesses the macroeconomic impact of public investment shocks, applying the statistical approach used by Auerbach and Gorodnichenko (2012, 2013). In this approach, shocks are identified as unanticipated changes in public investment; public investment forecasts are used to compute unanticipated innovations. This procedure overcomes the problem of fiscal foresight (see Forni and Gambetti 2010; Leeper, Richter, and Walker 2012; Leeper, Walker, and Yang 2013; and Ben Zeev and Pappa 2014), because it aligns the economic agents' and the econometrician's information sets.[35]

Two econometric specifications are used, first to establish the macroeconomic impact of public investment shocks and then to determine whether the effects vary with the state of the economy and with the degree of public investment efficiency. In the first specification, the *average* response of real GDP, the debt-to-GDP ratio, and private investment as a share of GDP are estimated. The statistical method follows the approach proposed by Jordà (2005) to estimate impulse-response functions. This approach has been advocated by Stock and Watson (2007) and Auerbach and Gorodnichencko (2013), among others, as a flexible alternative that does not impose the dynamic restrictions embedded in vector autoregression (autoregressive distributed-lag) specifications and is particularly suited to estimating nonlinearities in the dynamic response. The first regression specification is estimated as follows:

$$y_{i,t+k} - y_{i,t} = \alpha_i^k + \gamma_t^k + \beta^k FE_{i,t} + \varepsilon_{i,t}^k, \qquad (3.4)$$

in which y is the log of output (debt-to-GDP ratio and private-investment-to-output ratio); α_i are country fixed effects, included to take account of differences in countries' growth rates; γ_t are time fixed effects, included to take account of global shocks such as shifts in oil prices or the global business cycle; and FE is the forecast error of public investment as a share of GDP, computed as the difference between actual and forecast series.

In the second specification, the response is allowed to vary with the state of the economy and with the degree of public investment efficiency. The second regression specification is estimated as follows:

$$y_{i,t+k} - y_{i,t} = \alpha_i^k + \gamma_t^k + \beta_1^k G(z_{it}) FE_{i,t} + \beta_2^k (1 - G(z_{it})) FE_{i,t} + \varepsilon_{i,t}^k, \qquad (3.5)$$

with

$$G(z_{it}) = \frac{\exp(-\gamma z_{it})}{1 + \exp(-\gamma z_{it})}, \ \gamma > 0,$$

in which z is an indicator of the state of the economy (or degree of public investment efficiency) normalized to have zero mean and unit variance. The indicator of the state of the economy considered in the analysis is GDP growth,[36] and the measure of investment efficiency is from the World Economic Forum's *Global Competitiveness Report* and was also used in the April 2014 *Fiscal Monitor*.

Equations (3.4) and (3.5) are estimated for each k = 0, . . . , 4. Impulse-response functions are computed using the estimated coefficients β^k, and the confidence bands associated with the estimated impulse-response functions are obtained using the estimated standard errors of the coefficients β^k, based on clustered robust standard errors.

The macroeconomic series used in the analysis come from the OECD's Statistics and Projections database, which covers an unbalanced sample of 17 OECD economies (Australia, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Japan, Korea, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom, United States) over the period

[34]For simplicity of formulation, the depreciation rate is assumed to be zero.

[35]Leeper, Richter, and Walker (2012) demonstrate the potentially serious econometric problems that result from fiscal foresight. They show that when agents foresee changes in fiscal policy, the resulting time series have nonfundamental representations.

[36]As in Auerbach and Gorodnichenko 2013, γ = 1.5 is used for the analysis of recessions and expansions, γ = 1.0 for the role of public investment efficiency. The results do not qualitatively change for different values of gamma greater than zero. Similar results are obtained when the output gap is used to identify the state of the economy. The main reasons for identifying the state of economy using GDP growth instead of the output gap are that the latter is unobservable and its estimates are highly uncertain and subject to substantial and frequent revisions.

1985–2013. The forecasts of investment spending used in the analysis are those reported in the fall issue of the OECD's *Economic Outlook* for the same year.[37] As a robustness check, the forecasts of the spring issue of the same year and the fall issue of the previous year are alternatively used. The results show that the response functions are almost identical and not statistically significantly different from that reported in the baseline (Table 3.4, columns 2 and 3).

A problem in the identification of public investment shocks is that they may be endogenous to output growth surprises. Indeed, whereas automatic stabilizers operate mostly via revenues and social spending, discretionary public investment spending can occur in response to output conditions. Inspection of the data, however, shows that the public investment innovations identified are only weakly correlated (about –0.11) with output growth surprises. Moreover, the results obtained by separating public investment shocks from output growth innovations are almost identical and not statistically significantly different from those reported in the baseline (Table 3.4, column 4).

[37]The macroeconomic series from the OECD's Statistics and Projections database are available for a much longer period relative to *World Economic Outlook* forecasts. See Vogel 2007 and Lenain 2002 for an assessment of OECD forecasts and a comparison with forecasts prepared by the private sector. The size of the shock varies between –4.6 and 1.2 percentage points of GDP, with an average (median) of about –0.3 (–0.1) percentage point of GDP.

Another possible problem in identifying public investment shocks is a potential systematic bias in the forecasts concerning economic variables other than public investment, with the result that the forecast errors for public investment are correlated with those for other macroeconomic variables. To address this concern, the measure of public investment shocks has been regressed on the forecast errors of other components of government spending, private investment, and private consumption. The results, presented in column (5) of Table 3.4, show that the response functions are almost identical and not statistically significantly different from that reported in the baseline.

Whether public investment has a different macroeconomic impact depending on whether the public investment shocks are positive or negative is also assessed, using the following econometric specification:

$$y_{i,t+k} - y_{i,t} = \alpha_i^k + \gamma_t^k + \beta^{k+} D_{it} FE_{i,t} + \beta^{k-}(1 - D_{it}) FE_{i,t} + \varepsilon_{i,t}^k, \quad (3.6)$$

with

$D_{it} = 1$ if $FE_{it} > 0$, and 0 otherwise.

The results of this exercise show that although the output effect is typically larger for positive investment shocks than for negative ones, the difference is not statistically significant (Table 3.4, columns 6 and 7).

Table 3.4. Effect of Public Investment on Output in Advanced Economies: Robustness Checks

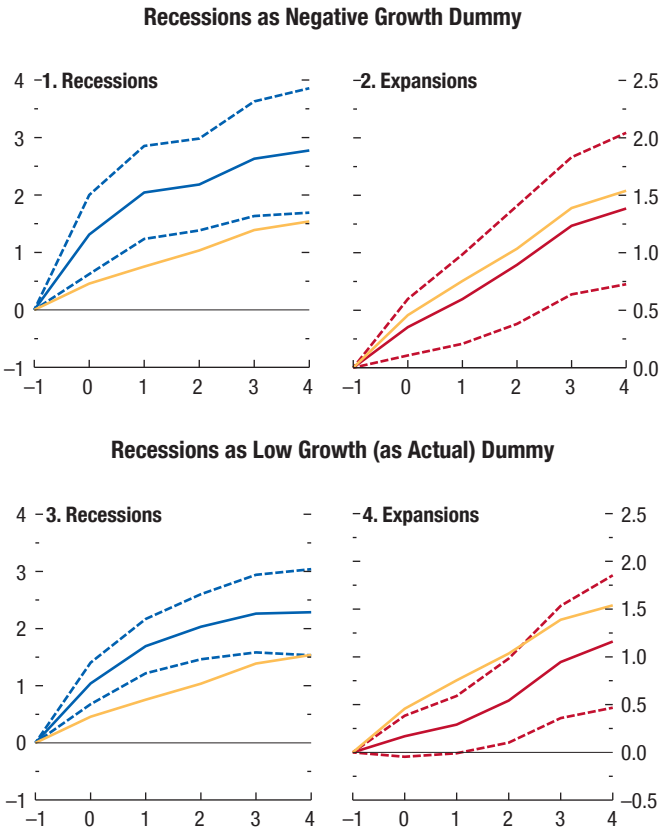
	Baseline	April Forecast	Previous October Forecast	Purging Public Investment Forecast Errors of Forecast Errors in: Growth	Purging Public Investment Forecast Errors of Forecast Errors in: Demand Components[1]	Positive Shocks	Negative Shocks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Impact of Public Investment Shock on Output at k =							
0	0.457	0.264	0.332	0.418	0.502	1.013	0.316
	(0.147)	(0.160)	(0.118)	(0.147)	(0.143)	(0.447)	(0.181)
1	0.755	0.581	0.697	0.702	0.844	1.240	0.584
	(0.238)	(0.216)	(0.216)	(0.241)	(0.264)	(0.619)	(0.309)
2	1.035	0.966	1.004	0.993	1.241	1.576	0.888
	(0.322)	(0.270)	(0.288)	(0.323)	(0.339)	(0.763)	(0.431)
3	1.389	1.099	1.124	1.354	1.625	1.706	1.242
	(0.394)	(0.349)	(0.330)	(0.393)	(0.405)	(0.754)	(0.547)
4	1.539	1.318	1.219	1.507	1.864	1.459	1.393
	(0.441)	(0.402)	(0.383)	(0.439)	(0.489)	(0.715)	(0.617)

Source: IMF staff calculations.

Note: $k = 0$ is the year of the public investment shock, measured by the public investment forecast error. Standard errors (in parentheses) are corrected for heteroscedasticity and clustered at the country level. The sample includes 17 Organisation for Economic Co-operation and Development economies for the 1985–2013 period. All regressions include a full set of country and year fixed effects.

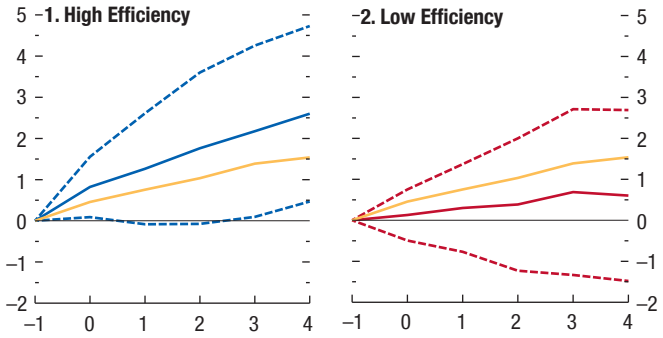
[1]Demand components include private consumption, investment, and government consumption.

Figure 3.13. Effect of Public Investment Shocks on Output, Recessions versus Expansions: Robustness Checks
(Percent; years on x-axis)



Source: IMF staff calculations.
Note: $t = 0$ is the year of the shock; dashed lines denote 90 percent confidence bands. Blue lines represent recessions; red lines represent expansions; yellow lines represent the baseline. Shock represents an exogenous 1 percentage point of GDP increase in public investment spending.

Figure 3.14. Effect of Public Investment Shocks on Output, High versus Low Efficiency: Robustness Checks
(Percent; years on x-axis)



Source: IMF staff calculations.
Note: $t = 0$ is the year of the shock; dashed lines denote 90 percent confidence bands. Blue lines represent high efficiency; red lines represent low efficiency; yellow lines represent the baseline. Shock represents an exogenous 1 percentage point of GDP increase in public investment spending.

The results presented in this section show that the short-term effects of investment spending shocks are larger in recessions than in expansions. This finding is robust to different specifications (interacting the shock with a recession dummy instead of a transition function of the state of the economy) and definitions of recessions (recessions defined as periods of negative growth or when growth is below the 2013 OECD average GDP growth) (Figure 3.13). Although these results may be driven simply by the fact that these shocks occur in periods of economic recovery, no statistically significant correlation is found between the measure of investment spending shocks used in this study and the state of the economy. In particular, the correlation between investment spending shocks and the state of the economy (change in the state of economy) is –0.01 (0.01). Similarly, no statistically significant correlation is found between the measure of investment spending shocks used here and the degree of investment efficiency. This suggests that the result that macroeconomic effects are larger in countries with higher investment efficiency is not driven by the fact that investment spending shocks tend to occur more frequently and to be larger in countries with higher degrees of public investment efficiency.[38] Finally, these results are also robust to different measures of public investment efficiency, such as the one presented in Box 3.3 (Figure 3.14).

Alternative approach

As an alternative approach, the dynamic macroeconomic impact of changes in public investment (as a share of GDP) is estimated. The results, depicted in panel 1 of Figure 3.15, show that changes in public investment have statistically significant and long-lasting effects on output. In particular, a 1 percentage point of GDP increase in investment spending increases the level of output by about 1.2 percent in the same year and by 1.3 percent after four years. If the sample period average response of government spending to output (about 3 percentage points of GDP) is used,

[38]In particular, the correlation between investment spending shocks and the degree of efficiency is –0.11.

the short- and medium-term investment spending multipliers are about 1.2 and 1.3, respectively.

A 1 percentage point of GDP increase in investment spending is found to reduce the debt-to-GDP ratio in the short term (by about 1.2 percentage points of GDP), but the medium-term effect is surrounded by large uncertainty and not statistically significantly different from zero (Figure 3.15, panel 2). There is no statistically significant effect on private investment as a share of GDP (Figure 3.15, panel 3).

The results are qualitatively similar when changes in public investment are instrumented with fiscal-spending-based consolidations and expansions identified using the narrative approach (Chapter 3 of the April 2011 *World Economic Outlook*).[39]

Empirical Analysis for Developing Economies

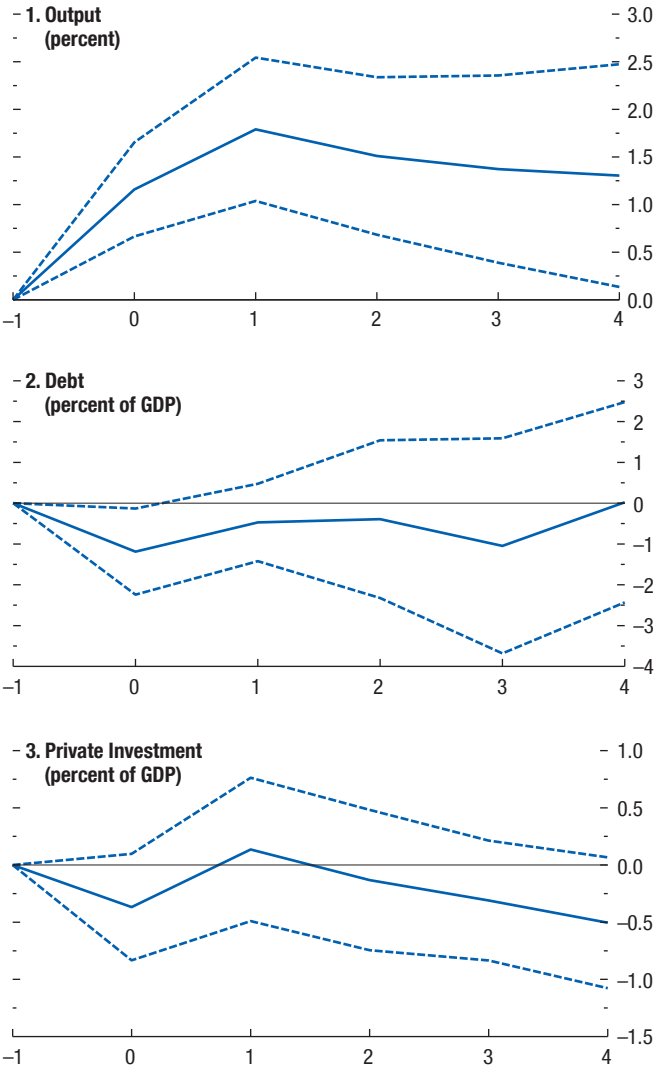
The empirical strategy that is applied for the sample of advanced economies requires forecasts of public investment, which are not available over a long time span for non-OECD economies. Given these data limitations, three different approaches are undertaken that provide complementary evidence on the macroeconomic effects of public investment in developing economies.

First approach: Investment booms

The first approach employed here is to examine episodes of public investment booms and trace the evolution of key macroeconomic variables in the aftermath of large and sustained increases in public investment. Investment booms are identified, following Warner (2014), as a sustained and significant increase in the government investment ratio. Using historical series of real public investment as a share of GDP from the April 2014 *Fiscal Monitor,* the beginning of a boom is identified as the point at which

- The difference between the five-year-forward average public-investment-to-GDP ratio and the five-year-backward average public-investment-to-GDP ratio exceeds the 80th percentile of such differences for a particular country for at least three consecutive years. This ensures that (1) this is a relatively large change in investment for the specific country and (2) the increase in investment is sustained over a period of time.
- The difference between the five-year-forward average public-investment-to-GDP ratio and five-year-backward average public-investment-to-GDP ratio exceeds a certain absolute threshold, which is set

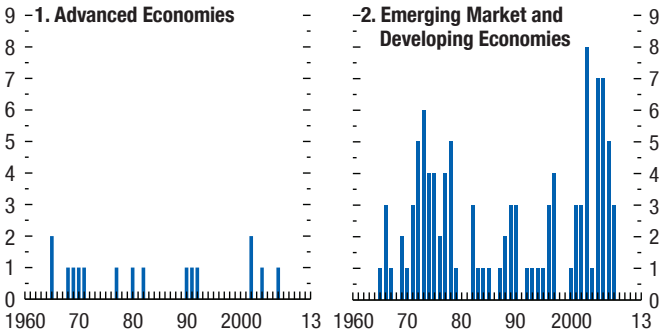
Figure 3.15. Effect of Changes in Public Investment in Advanced Economies
(Years on x-axis)



Source: IMF staff estimates.
Note: $t = 0$ is the year of the shock; dashed lines denote 90 percent confidence bands. Shock represents a 1 percentage point of GDP increase in public investment spending.

[39]These narrative measures are identified as those motivated by reasons unrelated to economic activity and are found to have statistically significant effects on public investment. Compared with the approach described in the previous section, this approach has one major shortcoming, in that the vast majority of the identified exogenous shocks are positive (that is, fiscal consolidations) and are motivated by debt reduction and therefore may be endogenous to debt-to-GDP ratios. In particular, out of 206 episodes, 161 are fiscal consolidations, and only 45 are fiscal expansions.

Figure 3.16. Distribution of Public Investment Booms over Time
(Number of countries)



Source: IMF staff calculations.

at 3 percentage points of GDP for non–advanced economies and 1 percentage point of GDP for advanced economies, where public investment ratios are significantly lower (see Figure 3.2).

Figure 3.16 presents the distribution of the beginning of public investment booms identified by this statistical procedure across time and for advanced and emerging market and developing economies. The vast majority of booms studied took place in emerging market and developing economies, with only a handful in advanced economies. Public investment booms are concentrated in the 1970s, when there was also a substantial buildup in the public capital stock in emerging market and developing economies, as well as in the mid-2000s, when public investment rates picked up again in this group of countries (see Figure 3.2).

Once the initial year of the investment boom has been identified, the evolution of key macroeconomic variables in the period following the public investment push is traced, using the estimation equation

$$y_{i,t+k} - y_{i,t} = \alpha_i^k + \gamma_t^k + \beta^k \, Boom_{i,t} + \varepsilon_{i,t}^k, \qquad (3.7)$$

in which y is the log of real output (the evolution of public investment as a share of GDP is also examined, as well as the debt-to-GDP ratio); α_i are country fixed effects, to account for different growth rates and levels of public investment across countries; γ_t are time fixed effects that control for global shocks such as shifts in commodity prices and global recessions; and $Boom_{i,t}$ is an indicator variable that equals one in the year the boom begins and zero otherwise. Separate regressions are estimated for each $k = \{0,9\}$. The coefficients β^k trace the impulse-response function of the level of the dependent variable of interest at time $t + k$ to a public investment boom that began at time t.

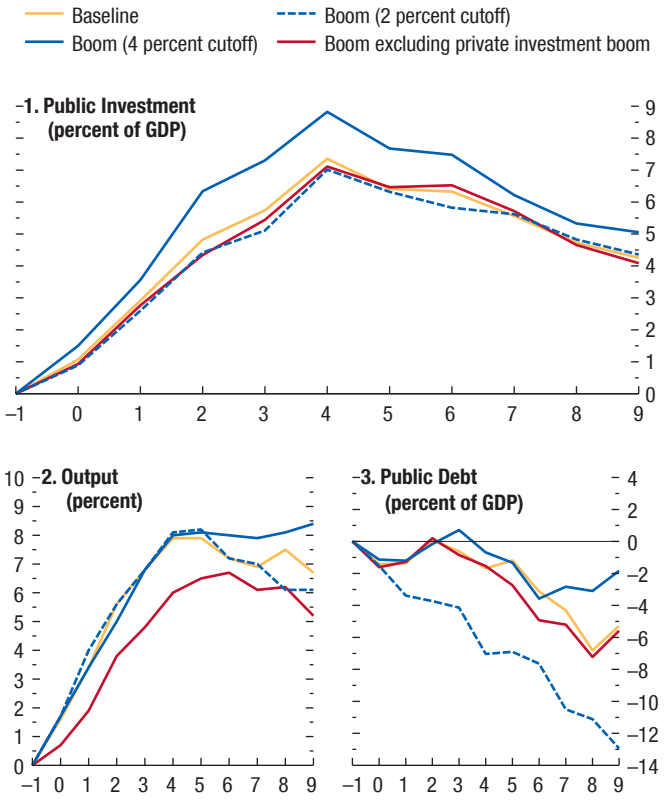
Estimating the causal impact of booms is confounded by the fact that whether a country undergoes an investment boom and when a boom occurs are not exogenous to the country's macroeconomic conditions. For example, anticipation of high growth in the future (such as from a sustained terms-of-trade boom or discovery of natural resources) may prompt governments to invest in infrastructure now, leading to overestimation of the causal impact of investment. Alternatively, public investment may be ratcheted up during times of economic slack in the hope of providing a boost to growth, which could potentially bias the estimated impact downward. The goal of this exercise is simply to establish the stylized facts around public investment booms, without claiming that the patterns observed are caused by the boom.

Figure 3.17 depicts the evolution of public investment, output, and public debt in the 10 years following the beginning of a boom using the study's baseline definition of a boom (as described earlier and presented in Figure 3.7), as well as several robustness checks. Namely, the sensitivity of the patterns to using alternative cutoffs for the absolute change in public investment in identifying the booms is examined. Although the baseline is built on an absolute difference between the five-year-forward and five-year-backward moving average of at least 3 percent for emerging market and developing economies and 1 percent for advanced economies, uniform cutoffs of 2 percent and 4 percent are also considered. Using a 2 percent cutoff for defining a boom increases the number of booms identified to 134; with the 4 percent cutoff, 89 booms are identified.

Given the poor availability of data on the breakdown of total investment into public and private, some of the data on real government investment that are used are imputed from the total investment series, potentially conflating the roles of the public and private sectors. As an additional robustness check, the series on public and private investment for each of the 122 booms identified in the baseline are examined, and booms prior to and during which there is a high degree of comovement between the public and private investment series are excluded.[40] This procedure

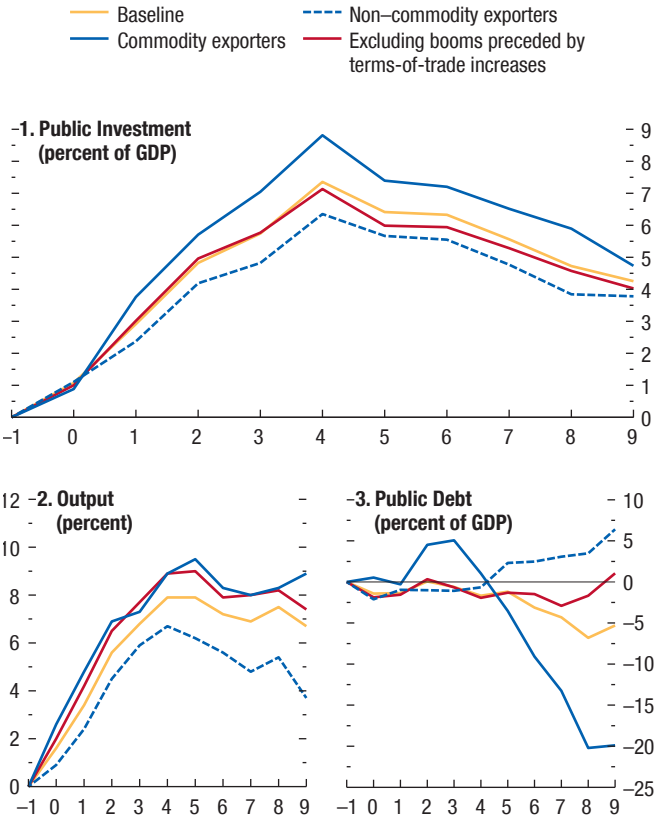
[40] This methodology constitutes a rather conservative method of defining public investment booms, as it likely excludes cases in which the patterns in total investment reflect primarily the behavior of public investment and cases in which there is strong complemen-

Figure 3.17. Output and Public Debt in the Aftermath of Public Investment Booms: Robustness Checks
(Years on x-axis)



Source: IMF staff calculations.
Note: $t = 0$ is the beginning of a public investment boom. See text for a definition of public investment booms.

Figure 3.18. Output and Public Debt in the Aftermath of Public Investment Booms: Role of Natural Resources
(Years on x-axis)



Source: IMF staff calculations.
Note: $t = 0$ is the beginning of a public investment boom. See text for a definition of public investment booms.

reduces the number of booms to 101. The red lines in Figure 3.17 depict the evolution of the macroeconomic variables following the 101 booms identified in this manner. Across all these alternative definitions of a boom, the same patterns are observed: there is a sustained increase in the level of output in the years following the beginning of a public investment boom, with no evidence of a rise in public indebtedness.

Finally, the extent to which these findings might simply reflect the experience of economies that benefit from favorable terms-of-trade shocks or natural resource discoveries and ratchet up public investment in response to these growth-enhancing events is examined. The sample of economies is split into commodity (including fuel) exporters and non–commodity exporters. The investment booms identified in the sample of commodity exporters are clearly larger in magnitude and are associated with a larger increase in output (Figure 3.18). Perhaps not surprisingly, this is precisely the set of countries that drive the negative point estimates on the evolution of the public-debt-to-GDP ratio following booms. In the non–commodity exporters, public investment booms are followed by a small and statistically nonsignificant increase in public debt. Finally, zeroing in on booms that are not coincidental to or preceded by favorable terms of trade yields results very similar to the baseline (red lines in Figure 3.18). Booms associated with favorable terms of trade are defined as those for which the five-year average (that is, from $t - 4$ to t, in which t is the beginning of the boom) of the deviation of the trade-weighted terms of trade from their long-term historical average exceeds the 80th percentile.

tarity between public and private investment. On the latter, see Eden and Kraay 2014.

Second approach: Exogenous public investment shocks

The second approach is inspired by Perotti (1999) and Corsetti, Meier, and Müller (2012). The empirical strategy relies on the idea that significant portions of government spending (and especially investment) are likely determined by past information and cannot easily respond to current economic conditions. Thus, a fiscal policy rule can be estimated for public investment and a series of exogenous shocks to public investment obtained from the residuals of this estimation. The policy shocks are then used to trace the dynamic effects of public investment on output.

The first step of this approach consists of estimating an annual time series of public investment innovations. The change in public investment (as a share of GDP) is assumed to follow a simple rule that relates it to its own lag, current and past debt-to-GDP ratios, past output growth, and expectations about current economic activity (proxied by the *World Economic Outlook* growth forecasts):[41]

$$\Delta i_{i,t} = \alpha_i + \gamma_t + \beta \Delta i_{i,t-1} + \delta_0 d_{i,t} + \delta_1 d_{i,t-1} + \theta g_{i,t-1} + \mu E_{i,t-1}(g_{i,t}) + \varepsilon_{i,t}, \quad (3.8)$$

in which $i_{i,t}$ denotes public investment as a share of GDP; α_i and γ_t indicate country and time fixed effects, respectively; d is the debt-to-GDP ratio; g denotes output growth; $E(g)$ denotes expectation about current economic activity; and ε represents the measure of public investment shocks.

The identifying assumption is that there is no two-way contemporaneous interdependence between change in investment and output growth. In principle, this assumption can be violated in two ways. First, public investment can *automatically* respond to cyclical conditions. This, however, should not pose a problem, because automatic stabilizers operate mostly through revenues and social spending. Second, discretionary public investment spending can occur in response to output conditions. As Corsetti, Meier, and Müller (2012) discuss, the relevance of this concern relates to the precise definition of contemporaneous feedback effects. Although it is typically assumed in the literature that government spending does not react to changes in economic activity within a given quarter (Blanchard and Perotti 2002), whether it might respond in a period longer than a quarter is an open question. Recent evidence for advanced economies (Beetsma, Giuliodori, and Klaassen 2009; Born and Müller 2012), however, suggests that the restriction that government spending not respond to economic conditions within one year cannot be rejected.

The second step consists of estimating the impact of these innovations ($\hat{e}_{i,t}$) on macroeconomic outcomes, as described in equation (3.4). Since estimating the public investment rule requires forecasts of the next year's growth, the estimation sample is restricted to the post-1990 period, when such forecasts become available for emerging market and developing economies. The results are based on a sample of 77 emerging market economies and 51 low-income countries.

In the baseline specification, the top and bottom 1 percent of shocks are trimmed from the public investment shock series. Including the entire sample leads to smaller and statistically nonsignificant point estimates of the effect of public investment on output. Trimming the top and bottom 5 percent of shocks yields larger and more statistically significant point estimates (Table 3.5).

Third approach: Instrumental variables

The third strategy builds on recent work by Kraay (2012, forthcoming) and Eden and Kraay (2014). In many low-income countries, loans from official creditors (such as the World Bank and other multilateral and bilateral aid agencies) finance a significant fraction of government spending. The disbursements of these loans and the spending they finance are spread out over many years following the approval of the loans. Hence, part of the fluctuation in government investment is predetermined, because the fluctuation reflects loan approval decisions made in previous years. If it is assumed that loan approval decisions by creditors do not anticipate future macroeconomic shocks that matter for output, this predetermined component of spending can be used as an instrument for total government investment to identify the causal impact of public investment on output.

Kraay's (forthcoming) series on predicted disbursements of loans (excluding loans approved in the current year) is employed as the instrument for public investment.[42] Using loan-level data from the Debtor

[41]The growth forecasts used in the analysis are those reported in the spring issue of the *World Economic Outlook* for the same year. As a robustness check, the forecasts of the fall issue of the same year and the spring issue of the previous year are alternatively used.

[42]Kraay (forthcoming) employs the predicted disbursements of official loans as an instrument for total government spending, whereas Eden and Kraay (2014) use it as an instrument for public investment, to tease out the short-term multiplier of public investment in a set of 52 low-income countries. The work discussed in this appendix builds on these studies by examining both the short- and

Table 3.5. Effect of Public Investment on Output in Emerging Market and Developing Economies: Public Investment Shocks Derived from a Fiscal Policy Rule

	Baseline[1]		Full Sample		Top and Bottom 5 Percent of Shocks Trimmed	
k	Coefficient	SE	Coefficient	SE	Coefficient	SE
	(1)	(2)	(3)	(4)	(5)	(6)
–1	0	0	0	0	0	0
0	0.252	(0.066)	0.144	(0.074)	0.324	(0.100)
1	0.340	(0.096)	0.193	(0.086)	0.571	(0.142)
2	0.331	(0.126)	0.187	(0.100)	0.567	(0.191)
3	0.384	(0.152)	0.225	(0.119)	0.728	(0.238)
4	0.497	(0.189)	0.239	(0.174)	1.010	(0.313)

Note: Columns (1), (3), and (5) present the estimated coefficients on the public investment shock from a series of regression estimates for each k in {0,4}. Standard errors (SEs) of the estimated coefficients, which are shown in columns (2), (4), and (6), are corrected for heteroscedasticity and clustered at the country level. There are 128 economies in the sample, with data from 1990–2013. All regressions include a full set of country and year fixed effects. $k = 0$ is the year of the shock.

[1]In the baseline specification, the top and bottom 1 percent of public investment shocks are trimmed.

Reporting System database maintained by the World Bank, Kraay (forthcoming) constructs loan-level predicted disbursements by applying to each initial loan commitment the average disbursement profile across all other loans issued by the same creditor in the same decade to all countries in the same geographical region as the actual borrower. These predicted loan-level disbursements of previously approved loans are then aggregated at the country-year level.[43] These series are available for the 1970–2010 period.

Because the identification strategy requires a strong correlation between public investment and predicted disbursements of loans, the sample is restricted to countries where disbursements from official creditors constitute an important source of financing. Namely, following Kraay (forthcoming), only countries whose disbursements of loans from official creditors equal on average at least 1 percent of GDP over 1970–2010 are included. This results in a regression sample covering 95 countries for which data on both public investment and official creditors' loan disbursements are available.

The following series of regressions is then estimated using two-stage least squares:

$$y_{i,t+k} - y_{i,t} = \alpha_i^k + \gamma_t^k + \beta^k X_{i,t} + \varepsilon_{i,t}^k, \qquad (3.9)$$

in which y is the log of real output; α_i are country fixed effects; γ_t are time fixed effects; and $X_{i,t}$ is the change in public investment as a share of GDP, instrumented with the change in predicted disbursements of previously approved loans. Equations are estimated for each $k = \{0,4\}$. The coefficients β^k trace the impulse-response function of the level of output at time $t + k$ to a change in public investment at time t.

Table 3.6 reports the estimated coefficients β^k based on equation (3.9). Panel 1 presents the first-stage regression results, and panel 2 reports the two-stage least-squares estimates of the response of output to change in public investment instrumented by the change in predicted loan disbursements. The results from three different samples are presented: all economies for which there are data, in column (1); only countries in which disbursements of loans from official creditors average at least 10 percent of total government spending, in column (2); and only countries eligible for support from the World Bank's International Development Agency, in column (3).

Across all three samples of economies, the effects of public investment on output are rather imprecisely estimated. The estimated coefficient is statistically significant at conventional levels only for the year following the change in investment. This could be a result of the rather weak first stage—the *F*-statistics are smaller than 10 in all three samples (Staiger and Stock 1997)—or could simply reflect the wide variety of experiences with public investment in developing economies.

medium-term effects of public investment on output and studying these effects in a larger sample of countries.

[43]See Kraay, forthcoming, for details on the data and construction of the instrument.

Table 3.6. Effect of Public Investment on Output in Emerging Market and Developing Economies: Public Investment Instrumented by Predicted Official Loan Disbursement

	Baseline	High-Disbursement Countries	IDA
	(1)	(2)	(3)
1. First Stage: Dependent Variable—Change in Public Investment as Percent of GDP			
Change in Predicted Disbursements	0.146	0.170	0.122
	(0.063)	(0.070)	(0.063)
First-Stage *F*-Statistic	3.705	5.344	7.217
Number of Observations	3,245	2,294	1,864
Number of Countries	95	66	58
2. Two-Stage Least Squares: Dependent Variable—Output Growth			
Impact of Change in Public Investment on Output at k =			
0	0.655	0.716	0.765
	(0.484)	(0.418)	(0.641)
1	1.700	1.691	1.801
	(0.841)	(0.748)	(1.146)
2	1.425	1.570	1.396
	(1.009)	(0.912)	(1.329)
3	1.359	1.700	1.156
	(1.112)	(1.017)	(1.534)
4	1.018	1.548	0.438
	(1.243)	(1.112)	(1.675)

Source: IMF staff calculations.

Note: $k = 0$ is the year of the change in public investment instrumented by the change in predicted loan disbursement. Panel (1) reports ordinary least-squares estimates of the first-stage regression of change in public investment on change in predicted loan disbursements. Panel (2) shows the two-stage least-squares estimates of the effect of change in public investment on real output from a series of regressions estimated for each k in {0,4}. Standard errors (in parentheses) are corrected for heteroscedasticity and clustered at the country level. Data are from 1970–2010. All regressions include a full set of country and year fixed effects. Results from three different samples are presented in columns (1), (2), and (3)—respectively, the full set of countries, only countries where disbursements of loans from official creditors average at least 10 percent of total government spending, and only countries eligible for International Development Association (IDA) support.

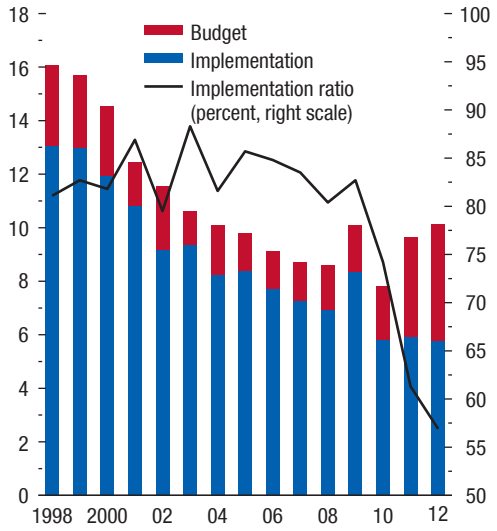
Box 3.1. Public Investment in Japan during the Lost Decade

Public investment in Japan is sometimes criticized as having contributed to the country's large debt increase and for failing to stimulate growth during the so-called Lost Decade. But there is reason for skepticism about such claims. To shed light on this debate, this box revisits Japan's experience with public investment.

It is true that Japan briskly increased public investment in the early 1990s, but the increase was unwound after just a few years to finance higher social security spending for a rapidly aging population. In particular, after the bursting of the bubble economy in the early 1990s, the government increased public investment spending by 1½ percent of GDP, with such spending reaching a peak of 8.6 percent in 1996. After that, the ratio of public investment to GDP steadily declined, picking up only recently in the aftermath of the global financial crisis, the 2011 earthquake, and the start of Abenomics (Figure 3.1.1). In the 20 years after 1992, the last year in which Japan recorded a fiscal surplus, social spending increased by 10.6 percent of GDP, and public investment declined by 2.3 percent of GDP.

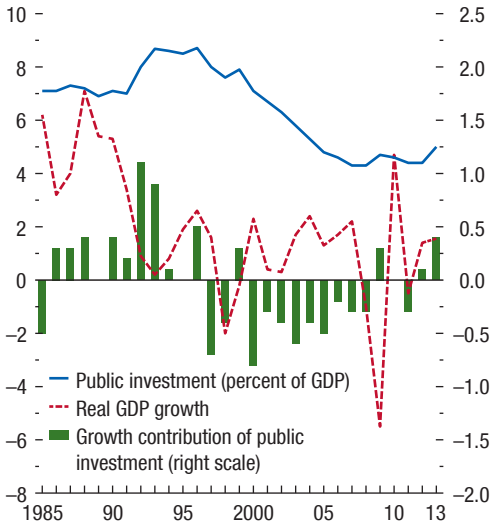
The author of this box is Ikuo Saito.

Figure 3.1.2. Japan: Budget and Implementation of Public Investment
(Trillions of yen)



Source: Ministry of Finance, Japan.
Note: Budgeted amounts include carryover from previous years.

Figure 3.1.1. Japan: Public Investment and Growth
(Percent, unless noted otherwise)



Source: Economic and Social Research Institute, Japan.

Not only was there this decline in investment throughout the late 1990s and the first decade of the 2000s, which has perhaps been less well remembered than the fast rise in the early 1990s, but announcements of investment plans have regularly exceeded their implementation. The ratio of public investment plans to actual implementation was 80–85 percent between 1998 and 2009, after which it dropped as resources for many planned projects shifted to recovery from a series of earthquakes that culminated with the historic 2011 event (Figure 3.1.2). This partial implementation may also help explain the gap between the perceived and actual growth of public investment.

However, the perception that the ability of public investment to stimulate activity has been on a declining trend is more accurate (see, for example, Auerbach and Gorodnichenko 2014). According to a macroeconomic model of the Japanese economy produced by the Economic and Social Research Institute—an arm of Japan's Cabinet Office—the short-term public investment multiplier declined from 1.31 in 1998 to

Box 3.1 *(continued)*

1.14 in 2011. Potential reasons for this decline include balance sheet adjustments (in the wake of the global financial crisis) that may have reduced the public investment multiplier, a lack of coordination between fiscal and monetary policies, reduced availability of highly productive projects, and cross subsidization among projects (Syed, Kang, and Tokuoka 2009).[1]

In sum, the frequent claim that Japan's public investment has been wasted does not fully withstand careful examination. It is true that Japan's public investment has recently faced greater challenges, as indicated by a lower multiplier effect since 1998. But given the great burst of activity in the early 1990s, the actual decline in the volume of public investment relative to GDP since the late 1990s, combined with the sharply reduced implementation of projects after 2009, may have combined to produce a misleadingly heightened perception that Japan's investment has been ineffective.

[1]Because projects with different profitability rates are tracked within the same account, a less productive infrastructure project can sometimes be cross subsidized by a more lucrative project.

Box 3.2. Improving the Efficiency of Public Investment

To be efficient, public investment must meet two conditions: it must be allocated to projects with the highest ratio of benefits to costs, and its aggregate level must align with fiscal sustainability. Efficiency entails not only the proper allocation of investment to sectors, but also the production of public assets at the lowest possible cost. When public investment is inefficient, higher levels of spending may simply lead to larger budget deficits, without increasing the quantity or quality of roads, schools, and other public assets that can help support economic growth.

One method for assessing the efficiency of public investment is to estimate "efficiency frontiers."[1] If a country has higher-quality infrastructure than other countries with a similar or greater level of capital stock, it is on the efficiency frontier. The further a country is from the efficiency frontier, the lower its efficiency score. Applying this approach, Albino-War and others (forthcoming) find that, on average, emerging market and developing economies are 10–20 percent less efficient than advanced economies (Figure 3.2.1).[2] The averages mask substantial differences within each group, however, indicating a global potential for improvement.

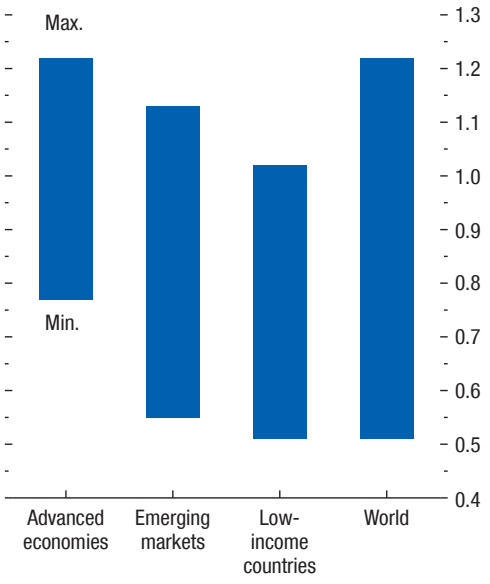
Examining the quality of public investment management can help identify the underlying causes of these inefficiencies. For example, the Public Investment Management Index assigns country scores for the four phases of public investment management: project appraisal, selection and budgeting, implementation, and ex post evaluation (Dabla-Norris and others 2012). These scores indicate that emerging market economies generally perform better than low-income countries (Figure 3.2.2).

But problems are evident in advanced economies as well. Common challenges include weak strategic guidance, budget planning, and project appraisal (including a failure to undertake cost-benefit analysis systematically); poor project selection and budgeting because of rigidities in the sectoral allocation of investment and fragmented decision making regarding capital and current budgets and investment; completion delays and cost overruns from overly optimistic cost estimates and inadequate cost controls; and a lack of interim and ex post project evaluation.

Well-designed institutional arrangements for public investment decision making and management can help improve the efficiency of public investment (IMF, forthcoming). For example, project appraisal can be strengthened by instituting a centralized, independent review process to ensure robust estimates of the costs, benefits, and risks of potential projects, as has been done in Australia, Chile, Korea, and Norway.

Both project appraisal and project selection can be strengthened by preparing investment budgets from a zero base, as in the United Kingdom, to ensure that

Figure 3.2.1. Public Efficiency Measured by Efficiency Frontiers
(Efficiency scores, infrastructure quality)



Sources: Albino-War and others, forthcoming; Dabla-Norris and others 2012; and IMF staff calculations.

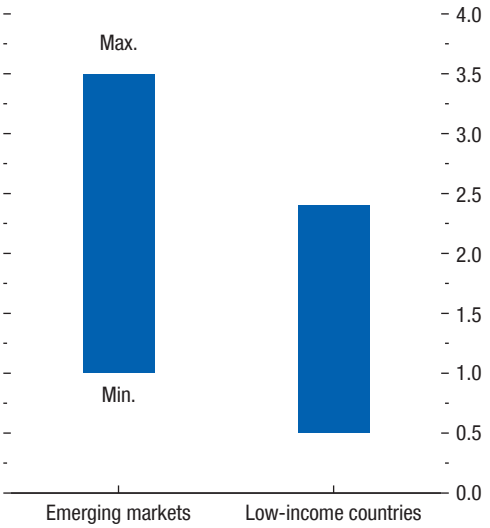
The authors of this box are Carlos Mulas Granados, Bahrom Shukurov, and SeokHyun Yoon.

[1]Estimation of the efficiency frontier involves comparing an indicator of public infrastructure quantity (the input) to an indicator of public infrastructure quality (the output). Quantity is the sum of past public investment, adjusted for depreciation, per capita. Quality is the "overall quality of infrastructure" indicator from the World Economic Forum's *Global Competitiveness Report*.

[2]As a proxy for the private sector's provision of infrastructure, the estimates include GDP per capita as an input. The results are not greatly affected by adding this control (the correlation coefficient of the efficiency scores with and without GDP per capita as an input is 0.89).

Box 3.2 *(continued)*

Figure 3.2.2. Public Investment Management Index Scores in Emerging Markets and Low-Income Countries



Sources: Albino-War and others, forthcoming; Dabla-Norris and others 2012; and IMF staff calculations.
Note: The Public Investment Management Index is an index of public investment efficiency composed of 17 indicators grouped into four stages of the public investment management cycle: project appraisal, selection, implementation, and evaluation. See Dabla- Norris and others 2012 for details.

new capital expenditure targets those sectors with the highest returns rather than those that have previously benefited from substantial investment. Planning current and capital expenditure within a medium-term budget framework can also ensure that investments are sustainable and that maintenance spending is fully taken into account, as is done, for example, in Australia, Chile, Ethiopia, Ireland, and Korea.

Project implementation can be improved by providing for explicit contingencies within the budget in anticipation of cost overruns and to avoid overcommitting the budget to new projects, as in Denmark and the United Kingdom. Finally, project evaluation can be strengthened by undertaking more systematic assessments of whether projects are on time, are within budget, and deliver their expected outputs, as is done, for example, in Chile and Korea.

Box 3.3. Fiscal Balance Sheets: The Significance of Nonfinancial Assets and Their Measurement

What assets constitute the stock of public capital in various economies? Answering this question requires data on the stock of nonfinancial assets within the framework of a balance sheet that covers all levels of government or the public sector.[1]

In a macroeconomic statistics balance sheet, a distinction is made between nonfinancial assets, financial assets, liabilities, and net worth. The standard breakdown of nonfinancial assets as applied in the analytical framework for government finance statistics is shown in Table 3.3.1.

A recent IMF working paper (Bova and others 2013) looks at the size, composition, and management of government-owned nonfinancial assets across 32 advanced and emerging market economies. It finds that nonfinancial assets comprise mainly structures (such as roads and buildings) and, when valued, land and subsoil assets. These assets have increased in value over time, primarily because of higher property and commodity prices, and in large part are owned by subnational governments. However, their levels as a percentage of GDP differ widely across countries (Figure 3.3.1).

Although data compilation is often a first step toward more effective asset management, the availability of internationally comparable data on nonfinancial assets is limited, and some countries report only subcategories. Moreover, some countries report data only for the central government rather than for general government or the public sector. Achieving a full, global picture of governments' balance sheets will require broader data coverage and the resolution of differences in accounting methods.

The authors of this box are Rob Dippelsman, Gary Jones, Kara Rideout, and Florina Tanase.

[1]The IMF's *Government Finance Statistics Manual 2001* (GFSM 2001) and its update, the *Government Finance Statistics Manual 2014* (GFSM 2014), provide guidance on compiling such information.

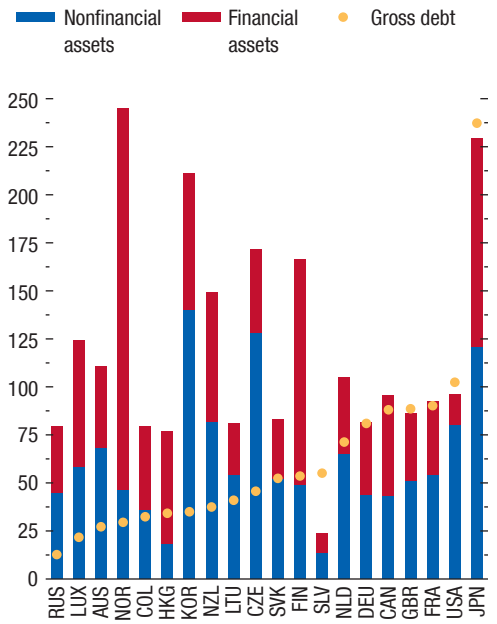
Table 3.3.1. Summary Classification of Nonfinancial Assets

61	Nonfinancial assets		
611	Fixed assets	612	Inventories
6111	Buildings and structures	613	Valuables
61111	Dwellings	614	Nonproduced assets
61112	Buildings other than dwellings	6141	Land
61113	Other structures	6142	Mineral and energy resources
61114	Land improvements	6143	Other naturally occurring assets
6112	Machinery and equipment	61431	Noncultivated biological resources
61121	Transport equipment	61432	Water resources
61122	Machinery and equipment other than transport equipment	61433	Other natural resources
6113	Other fixed assets	6144	Intangible nonproduced assets
61131	Cultivated biological resources	61441	Contracts, leases, and licenses
61132	Intellectual property products	61442	Goodwill and marketing assets
6114	Weapons systems		

Source: IMF, *Government Finance Statistics Manual 2001*.

Figure 3.3.1. General Government Assets and Liabilities, 2012

(Percent of GDP)



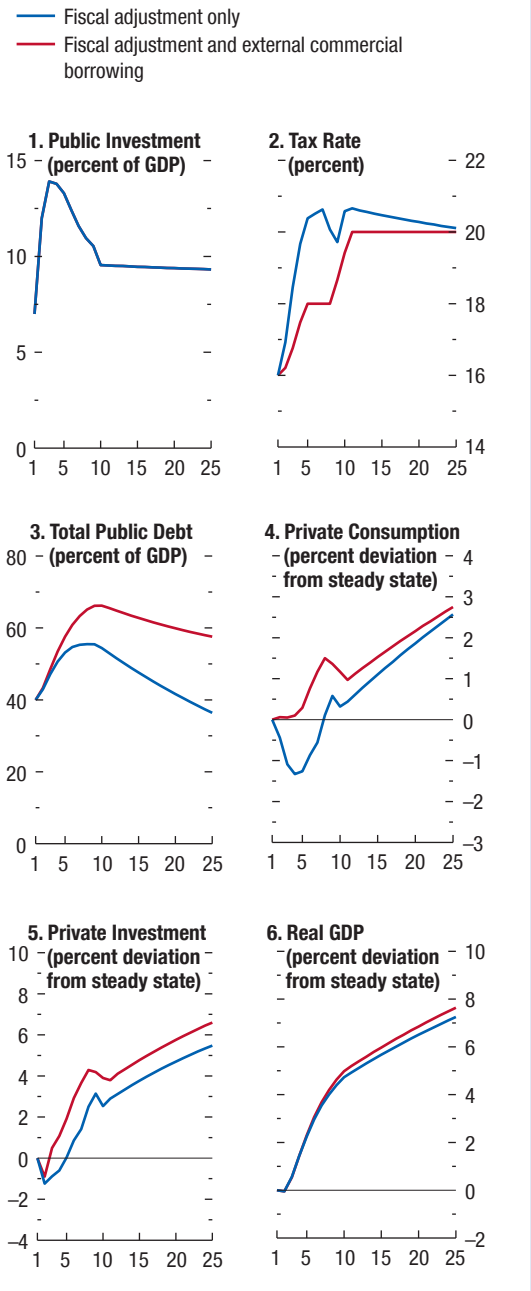
Sources: IMF, *Government Finance Statistics Yearbook;* Organisation for Economic Co-operation and Development; and IMF staff calculations.
Note: Data labels in the figure use International Organization for Standardization country codes.

Box 3.4. The Macroeconomic Effects of Scaling Up Public Investment in Developing Economies

Scaling up public investment can spur economic advancement in developing economies, but it can also involve some major macroeconomic challenges and trade-offs regarding growth and debt sustainability. This box discusses some of these benefits and challenges, paying particular attention to some factors that shape the effects on growth and debt sustainability. The effects of investment depend not only on the rate of return of public capital (relative to the cost of funding), but also on the type of financing, the efficiency of public investment, the response of the private sector, and the authorities' ability to implement fiscal adjustment and manage debt. To illustrate the discussion, the box uses the Debt, Investment, and Growth model developed by Buffie and others (2012), which is calibrated to capture aspects pertinent to low-income countries, such as low public investment efficiency, limited absorptive capacity, and limited access to international and domestic borrowing.[1]

Figure 3.4.1 presents the macroeconomic effect of scaling up public investment in low-income countries. In particular, it assumes that the public-investment-to-GDP ratio increases from the current level of about 7 percent of GDP to 14 percent of GDP in about three years and then stabilizes at about 9 percent of GDP. The results of the simulation show that such an increase can generate substantially greater output over the long term (by about 7 percent after 25 years), but it can also raise the debt-to-GDP ratio in the short to medium term, even though part of the scaling up is financed with concessional loans and grants (blue lines in the figure). In the absence of nonconcessional external borrowing, taxes must increase sharply in the short to medium term, leading to a crowding out of private investment and consumption. The more ambitious and front-loaded the increase in public investment, the larger the increase in taxes and its associated effects tend to be.

Figure 3.4.1. Role of Type of Financing in Scaling Up Public Investment in Low-Income Countries
(Years on x-axis)



Source: IMF staff estimates.

The author of this box is Felipe Zanna.

[1]The Debt, Investment, and Growth model is a real, dynamic, open economy framework with several production sectors that use public capital as an input; it allows for different financing strategies (external concessional, external commercial, domestic) and various fiscal rules that respond to debt paths. In the model, efficiency is set to 0.5—that is, 1 dollar of public investment can translate into 0.5 dollar of public capital—a ratio in line with estimates in Pritchett 2000. See also Dabla-Norris and others 2012. The return to public capital is calibrated to 25 percent, which is close to values provided by Foster and Briceño-Garmendia (2010) and Dalgaard and Hansen (2005).

Box 3.4 *(continued)*

Nonconcessional external borrowing can help bridge financing gaps and smooth difficult macroeconomic adjustments in the short to medium term. With more borrowing, debt-to-GDP ratios can be expected to increase for some time, but this additional financing can help ease the fiscal adjustment and prevent the crowding out of private consumption and investment (Figure 3.4.1). These gains from additional nonconcessional debt should, however, be balanced against the risks associated with this type of financing. Policymakers may put off necessary tax increases and expenditure cuts while continuing to borrow on nonconcessional terms, thus potentially saddling the country with a high ratio of debt to GDP.

Resource-rich developing economies may have additional resources to finance investment increases, but they also face additional challenges. Natural resources provide a valuable opportunity to invest those resources domestically to speed up development (see Collier and others 2010 and van der Ploeg and Venables 2011). Resource-rich economies should design mechanisms to prevent boom-bust cycles. They can do so by incorporating in their plans the implications of the volatility of resource prices and the exhaustibility of reserves, as well as by establishing a resource fund.[2] Such economies should also be cautious about borrowing in advance (before resource revenues materialize) to start investment programs.[3]

The macroeconomic effect of increasing public investment hinges on countries' structural characteristics, especially the efficiency of such investment. In particular, in countries with high investment efficiency, more public investment may lead to significant growth effects and a decline in the debt-to-GDP ratio in the long term (after 25 years). In countries with low investment efficiency, however, it may lead to low growth dividends and unsustainable debt dynamics (Figure 3.4.2).

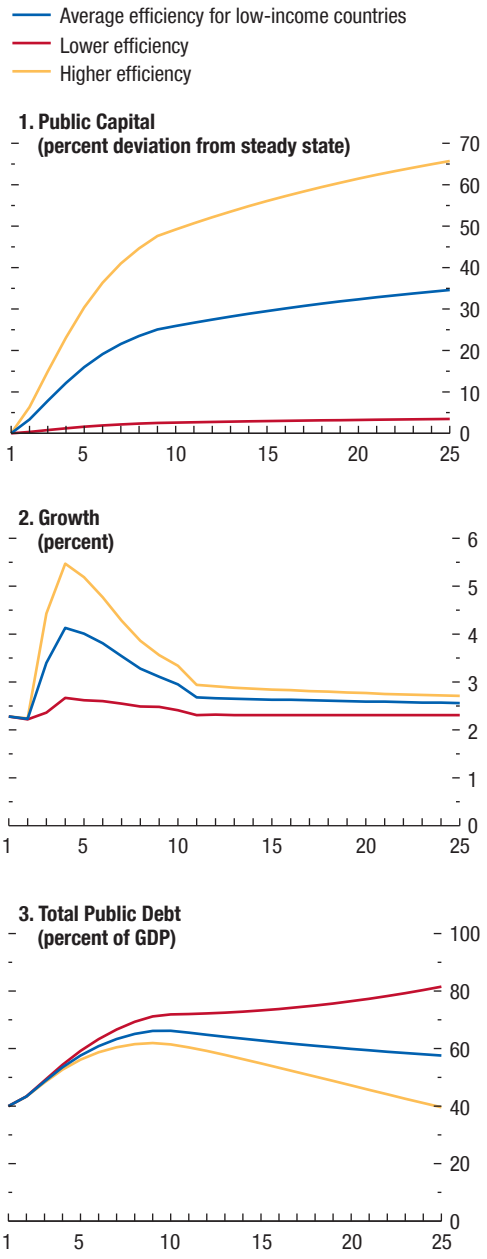
Overall, reaping the growth and development benefits of greater public investment while minimizing the risks to debt sustainability in developing economies will require policymakers to improve public investment efficiency, debt management capacity, and fiscal flexibility.

[2]A resource fund works as a fiscal buffer mechanism that saves resource revenues in boom times that can be drawn down to support investment spending during periods of low resource revenues. See Berg and others 2013 and Melina, Yang, and Zanna 2014.

[3]In the 1970s era of soaring commodity prices, many developing economies used their natural resources as collateral for loans to undertake ambitious projects. When prices plummeted in the 1980s, these economies suffered debt crises (Gelb 1988; Manzano and Rigobón 2007).

Figure 3.4.2. Role of Improving Public Investment Efficiency in Low-Income Countries

(Years on x-axis)



Source: IMF staff estimates.

Box 3.5. Fiscal Institutions, Rules, and Public Investment

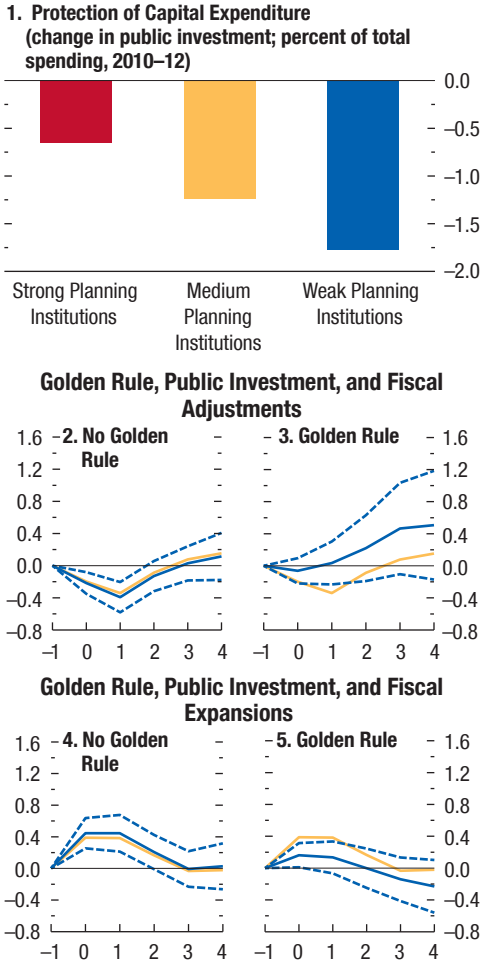
Budget institutions affect fiscal policy outcomes and shape the composition of the budget, including the share of resources devoted to investment spending. For example, stronger planning institutions have been associated with smaller cuts in public investment over the past four years (Figure 3.5.1, panel 1, and IMF 2014).

Budget rules also affect public investment spending, especially in the case of the so-called golden rule of public finance. This rule calls for excluding net investment spending from the budget balance against which implicit or explicit fiscal discipline targets are applied. The idea behind the rule is that a government, like a private company, should not attribute to one year the full cost of projects expected to generate gains over several years.

Several arguments have been advanced in favor of the golden rule.[1] First, financing investment out of current revenue may conflict with other spending objectives of policy authorities or with institutional or political constraints. Under such conditions, amending the budget constraint with a golden rule may allow a rise in productive investment, which adds to the stock of public capital and raises output. Second, the golden rule takes into account that borrowing to finance productive public investment could pay for itself over the longer term, both through user fees and through higher tax revenues resulting from higher output. Third, spreading the costs of public investment over time promotes intergenerational equity, shifting part of the cost of investment to future beneficiaries. Finally, if public investment is productive, a balanced current budget is consistent with a positive, steady-state ratio of public debt to GDP and with optimal fiscal policy.

The golden rule can also entail significant budgetary and economic development risks (see for example Balassone and Franco 2000 and Buiter 2001). First, in the presence of excess demand, public investment should be part of the fiscal adjustment required to bring domestic absorption into line with resource availability. Second, investments carry no guarantee of success, and even public investments that significantly boost economic growth may not reduce budgetary pressures if the tax base is limited or tax enforcement is weak. Third, freeing public investment from fiscal constraints may

Figure 3.5.1. Fiscal Policies and Public Investment



Source: IMF staff calculations.
Note: Panel 1 presents averages of scores on four dimensions: clear and transparent medium-term fiscal objectives, medium-term budget frameworks, performance orientation of the budget, and intergovernmental fiscal arrangements. Countries are categorized into one of three groups (strong, medium, weak) based on their average score in each of these four subgroups. Countries that scored in the top third overall are categorized as "strong," those in the middle third "medium," and those in the bottom third "weak." See IMF 2014. For panels 2 through 5, $t = 0$ is the year of the shock, dashed lines denote 90 percent confidence bands, and solid yellow lines represent the baseline result. See note 2 in the text for a list of countries that had or currently have a golden rule.

The authors of this box are Davide Furceri and Carlos Mulas Granados.

[1]See for example Fitoussi and Creel 2002 and Blanchard and Giavazzi 2004.

Box 3.5 *(continued)*

discriminate against desirable forms of private involvement in infrastructure, such as when it brings efficiency to the investment, and it may bias spending toward physical capital and sacrifice current expenditure on human capital such as health and education spending. Finally and importantly, the golden rule may induce creative accounting that excludes some current spending from fiscal targets by classifying it as investment. Strong institutional capacity is therefore needed to ensure that adopting the golden rule achieves its objective without raising fiscal risks. Moreover, in countries with serious concerns about debt sustainability, implementing the golden rule may simply not be feasible because there are few alternatives to focusing on the overall balance.

Has the golden rule been effective in protecting public investment from fiscal contractions? A novel database, the IMF's Fiscal Rules Dataset, facilitates an empirical investigation of this question for a set of 56 economies, including 6 with the golden rule in place at some point during 1985–2013.[2]

The way the golden rule shapes how fiscal adjustments affect public investment as a share of GDP is estimated using the following empirical specification:

$$y_{i,t+k} - y_{i,t} = \alpha_i^k + \gamma_t^k + \beta_1^K GR_{i,t} FA_{i,t} + \beta_2^K (1 - GR_{i,t}) FA_{i,t} + \delta GR_{i,t} + \vartheta X_{i,t} + \varepsilon_{i,t}^k, \quad (3.5.1)$$

in which y is public investment as share of GDP; α_i are country fixed effects; γ_t are time fixed effects; $GR_{i,t}$ is a dummy variable that equals one when country i has in place a golden rule in year t; X is a vector of control variables, including lags of output growth and debt-to-GDP ratio; and FA is a dummy that equals one for the starting year t of the fiscal adjustment in each country i and zero otherwise. Fiscal consolidation (expansion) episodes are identified as two-year periods in which the cyclically adjusted primary-balance-to-GDP ratio improves (deteriorates) in each year and the cumulative improvement (deterioration) is equivalent to at least 2 percent of GDP (Alesina and Ardagna 2012).

The results (Figure 3.5.1) show that the golden rule has helped preserve public investment following periods of fiscal contraction (while having no statistically significant effect following periods of fiscal expansion). In particular, although public investment declined by about 0.4 percentage point of GDP on average one year after a consolidation episode in countries with no golden rule in place, the decline in investment was significantly smaller in countries with a golden rule. These results have to be interpreted with caution, however, because causality is difficult to establish. The results are robust to the inclusion of a broader sample of 18 countries with rules that fully or partially exclude public investment from the ceiling.

In recent years, a number of advanced economies have improved the design of their fiscal rules by adopting so-called second-generation fiscal rules, which allow for greater flexibility to accommodate shocks while maintaining the government's commitment to medium- and long-term fiscal sustainability (IMF 2014). The European countries with the largest economies (France, Germany, Italy, United Kingdom) have taken steps to enshrine their fiscal rules in law. Other advanced economies, including Australia, Canada, Japan, and Korea, have more clearly specified their fiscal policy objectives and rules without embedding them in law.

Fiscal rules are also increasingly supported by more comprehensive and binding medium-term expenditure frameworks. Since 2010, Germany, Italy, and the United Kingdom have strengthened their medium-term budget frameworks by either improving their institutional coverage or tightening multiyear expenditure limits.

[2]The database covers 56 advanced, emerging market, and developing economies, of which 9 had a golden rule in place at some point between 1985 and 2013 (Brazil, Costa Rica, Germany, Japan, Kosovo, Liberia, Malaysia, Pakistan, United Kingdom). Database limitations for Kosovo, Liberia, and Malaysia restrict the present analysis of golden-rule countries to the remaining 6.

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CHAPTER 4

ARE GLOBAL IMBALANCES AT A TURNING POINT?

Global current account ("flow") imbalances have narrowed significantly since their peak in 2006, and their configuration has changed markedly in the process. The imbalances that used to be the main concern—the large deficit in the United States and surpluses in China and Japan—have more than halved. But some surpluses, especially those in some European economies and oil exporters, remain large, and those in some advanced commodity exporters and major emerging market economies have since moved to deficit. This chapter argues that the reduction of large flow imbalances has diminished systemic risks to the global economy. Nevertheless, two concerns remain. First, the nature of the flow adjustment—mostly driven by demand compression in deficit economies or growth differentials related to the faster recovery of emerging market economies and commodity exporters after the Great Recession—has meant that in many economies, narrower external imbalances have come at the cost of increased internal imbalances (high unemployment and large output gaps). The contraction in these external imbalances is expected to last as the decrease in output due to lowered demand has likely been matched by a decrease in potential output. However, there is some uncertainty about the latter, and there is the risk that flow imbalances will widen again. Second, since flow imbalances have shrunk but not reversed, net creditor and debtor positions ("stock imbalances") have widened further. In addition, weak growth has contributed to increases in the ratio of net external liabilities to GDP in some debtor economies. These two factors make some of these economies more vulnerable to changes in market sentiment. To mitigate these risks, debtor economies will ultimately need to improve their current account balances and strengthen growth performance. Stronger external demand and more expenditure switching (from foreign to domestic goods and services) would help on both accounts. Policy measures to achieve both stronger and more balanced growth in the major economies, including in surplus economies with available policy space, would also be beneficial.

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Introduction

A worrying trend in the run-up to the global financial crisis was the widening of current account imbalances in some of the world's largest economies. The concerns were fourfold: first, that some of the imbalances reflected domestic distortions, from large public deficits in some economies to excessive private saving in others, correction of which was in individual economies' self-interest; second, that some of the imbalances might be reflecting intentional distortions, such as unfair trade practices or exchange rate policies, with adverse implications for trade partners; third, that a reduction in the U.S. current account deficit would likely require a slowdown in U.S. domestic demand growth, which—absent stronger demand elsewhere—would weaken global growth; and fourth, that the economies with large deficits and growing external liabilities, most notably the United States, might suffer an abrupt loss of confidence and financing, leading to massive disruptions of the international monetary and financial systems.[1]

A decade later, where do we stand?

Flow imbalances—current account surpluses and deficits—have narrowed markedly, and inasmuch as they reflected domestic distortions, this narrowing has benefited both the economies suffering from them and the system as a whole. In addition, imbalances—especially deficits—have become less concentrated, so the risks of a sudden reversal (or the consequences thereof) are likely to have diminished. Two issues remain, however. How much of the narrowing is temporary and how much is permanent? And how worried should we be that net foreign asset positions have continued to diverge because flow imbalances have only narrowed rather than reversed?

Consensus on these issues has yet to emerge. Some view the large global imbalances of the mid-2000s as a past phenomenon, unlikely to return; others, how-

[1]See, for example, the September 2006 *World Economic Outlook,* as well as IMF 2007 and its discussion by the IMF Executive Board (https://www.imf.org/external/np/sec/pn/2007/pn0797.htm).

ever, are more skeptical that the adjustment that has taken place will prove durable, and they urge greater policy action to address the remaining imbalances.[2] These opposing perspectives (and their accompanying policy prescriptions) suggest that there is a need to better understand the mechanics of adjustment and the extent to which the domestic and international distortions that underlay the precrisis imbalances have been addressed.

This chapter thus assesses whether global imbalances remain—or might again become—a matter of concern. To do so, it traces the evolution of global imbalances before and after the global financial crisis and seeks to answer the following key questions:

- How has the distribution of flow imbalances changed over time as they have narrowed? Has the narrowing been due more to expenditure changing or to expenditure switching from foreign to domestic goods and services? Will imbalances widen again as output gaps are closed?
- How have stock imbalances evolved? What are the underlying forces, and what are the likely future dynamics?

The main findings are as follows:

- With the narrowing of systemic current account balances, the configuration of global imbalances has shifted markedly since their peak in 2006. The imbalances that were the main concern at the time—the large deficit of the United States and the large surpluses of China and Japan—have all decreased by at least half relative to world GDP. At the same time, though not the original focus of concerns about global imbalances, the unsustainability of some large European deficits became apparent, and these economies have been undergoing often painful external adjustment.
- Beyond these major changes, the pattern of surpluses and deficits has changed in other ways. Some major emerging market economies and a few advanced commodity exporters have moved from surplus to deficit. The surpluses of oil exporters and those of European surplus economies, however, remain quite large.
- Corrective movements in real effective exchange rates (currency depreciations for deficit economies, appreciations for surplus economies) have played a surprisingly limited role overall, and hence so has expenditure switching.[3] Much of the recent adjustment in flow imbalances has therefore been driven by the reduction in demand in deficit economies after the global financial crisis or by growth differentials related to the faster recovery of emerging market economies and commodity exporters after the Great Recession. Factors that may have worked against anticipated exchange rate realignment include changes in investor sentiment (for example, safe haven flows after the crisis) and the fact that the euro area includes economies with both large precrisis deficits and large precrisis surpluses. Also, other shocks (such as increased energy production in the United States and the decline of energy production in Japan following the 2011 earthquake) would have implied reductions in the absolute size of current account balances for given exchange rates.
- The decrease in output due to lowered demand has been largely matched by a decrease in potential output. Thus, even without expenditure switching, much of the narrowing of the imbalances in deficit economies should be seen as permanent. However, the size of output gaps is highly uncertain, including in some euro area deficit economies, and therefore so is the future path of current account balances.
- Stock imbalances have not decreased—on the contrary, they have widened—mainly because of continued flow imbalances, coupled with low growth in several advanced economies. Some large debtor economies thus remain vulnerable to changes in market sentiment, highlighting continued possible systemic risks, though the status of the U.S. dollar as a reserve currency seems, if anything, more secure now than in 2006.

The chapter proceeds by first documenting the reduction in global imbalances since 2006 and examin-

[2]Eichengreen (2014) argues that global imbalances are over because neither the United States (the largest deficit economy in 2006) nor China (the largest surplus economy in 2006) will return to precrisis growth and spending patterns. Lane and Milesi-Ferretti (2012) find that although current account imbalances have been corrected, the external adjustment has been unbalanced, relying mostly on a reduction in demand in deficit economies. El-Erian (2012) warns of complacency, arguing that although global imbalances have narrowed, there remains a need to implement policy changes to address the remaining domestic and international distortions that underlie global imbalances.

[3]The September 2006 *World Economic Outlook*, for instance, argued that a "gradual and orderly unwinding of imbalances" was the most likely outcome, with a sustained depreciation of the U.S. dollar in real terms and a real effective exchange rate appreciation in surplus economies. Obstfeld and Rogoff (2005) noted that any significant improvement in the U.S. trade balance would typically involve a large depreciation of the U.S. dollar in real terms.

ing their changing constellation during that period. It then examines the mechanics of the adjustments that took place and considers whether global imbalances could widen again with a pickup in global growth. Finally, the chapter addresses the dynamics of stock imbalances, considers how both stock and flow imbalances are likely to evolve, and offers conclusions.

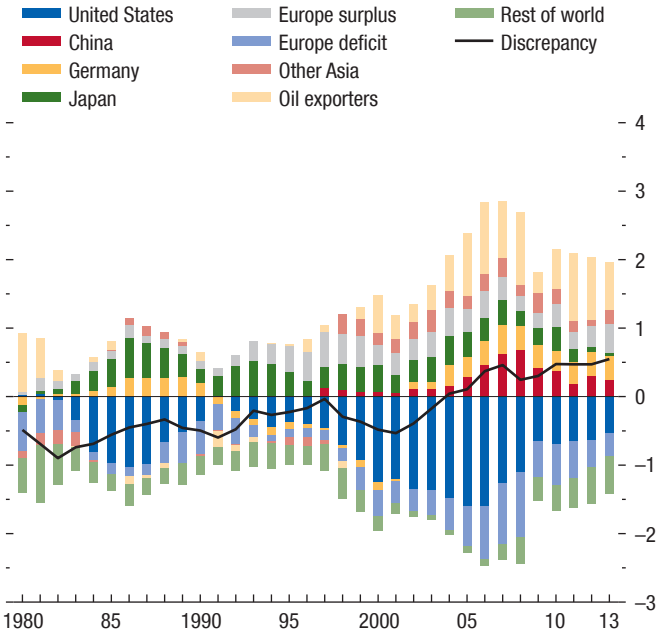
Narrowing the Bulge: The Evolution of Flow Imbalances

At the level of an individual country, there is no presumption that the current account should be balanced, and there may be good economic reasons to run current account surpluses or deficits. Large deficits—and associated large net foreign financial liabilities—however, expose the country to the risks of a sudden cessation in financing or the rolling over of those liabilities. If the economy is systemically important, a "sudden stop" of such financing could have wider repercussions. Large surpluses present fewer risks, but they can be problematic from a multilateral perspective if they are driven by export-led growth strategies or if they arise in a world of deficient aggregate demand—as has been the case since the global financial crisis. Indeed, distortions may be transmitted globally through surpluses and deficits if they occur in large economies, undermining the efficient operation of the international monetary system. And the more concentrated the imbalances, the greater the risks to the global economy. The configuration of current account imbalances in the mid-2000s, with large deficits for the United States and large surpluses for China and Japan, is widely understood to have met those criteria for systemic risk. This section documents the evolution of global imbalances since 2006, without passing judgment (yet) on the desirability of their dynamics.

Current account imbalances have narrowed substantially since their peak eight years ago, shortly before the global financial crisis (Figure 4.1). At that time, the sum of the absolute values of current account balances across all economies peaked at 5.6 percent of world GDP. Global imbalances subsequently shrank by almost one-third in 2009 at the height of the global recession. They rebounded somewhat in 2010 but have narrowed again since, declining to about 3.6 percent in 2013. Likewise, from 2006 through 2013, the aggregate imbalance of the top 10 deficit economies dropped by nearly half as a percentage of world GDP, from 2.3 percent to 1.2 percent (Table 4.1), and the corresponding value for the top 10 surplus economies dropped by one-fourth, from 2.1 percent to 1.5 percent.

Figure 4.1. Global Current Account ("Flow") Imbalances
(Percent of world GDP)

Current account imbalances have narrowed substantially since their peak eight years ago, and their configuration has changed markedly.



Source: IMF staff calculations.
Note: Oil exporters = Algeria, Angola, Azerbaijan, Bahrain, Bolivia, Brunei Darussalam, Chad, Republic of Congo, Ecuador, Equatorial Guinea, Gabon, Iran, Iraq, Kazakhstan, Kuwait, Libya, Nigeria, Norway, Oman, Qatar, Russia, Saudi Arabia, South Sudan, Timor-Leste, Trinidad and Tobago, Turkmenistan, United Arab Emirates, Venezuela, Yemen; Other Asia = Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, Thailand. European economies (excluding Germany and Norway) are sorted into surplus or deficit each year by the signs (positive or negative, respectively) of their current account balances.

The constellation of deficits and surpluses also changed by 2013 (Table 4.1; Figures 4.2 and 4.3). On the deficit side, the large U.S. deficit shrank by half in dollar terms and by almost two-thirds as a percentage of world GDP. European economies with large deficits—though not the focus of initial concerns about imbalances—moved as a whole to a small surplus (Greece, Italy, Poland, Portugal, and Spain). Deficits in some advanced commodity exporters (Australia and Canada) rose, and those of some major emerging market economies (Brazil, India, Indonesia, Mexico, and Turkey), some of which had run surpluses in 2006,

Table 4.1. Largest Deficit and Surplus Economies, 2006 and 2013

2006				2013			
	Billions of U.S. Dollars	Percent of GDP	Percent of World GDP		Billions of U.S. Dollars	Percent of GDP	Percent of World GDP
1. Largest Deficit Economies							
United States	–807	–5.8	–1.60	United States	–400	–2.4	–0.54
Spain	–111	–9.0	–0.22	United Kingdom	–114	–4.5	–0.15
United Kingdom	–71	–2.8	–0.14	Brazil	–81	–3.6	–0.11
Australia	–45	–5.8	–0.09	Turkey	–65	–7.9	–0.09
Turkey	–32	–6.0	–0.06	Canada	–59	–3.2	–0.08
Greece	–30	–11.3	–0.06	Australia	–49	–3.2	–0.07
Italy	–28	–1.5	–0.06	France	–37	–1.3	–0.05
Portugal	–22	–10.7	–0.04	India	–32	–1.7	–0.04
South Africa	–14	–5.3	–0.03	Indonesia	–28	–3.3	–0.04
Poland	–13	–3.8	–0.03	Mexico	–26	–2.1	–0.03
Total	**–1,172**		**–2.3**	**Total**	**–891**		**–1.2**
2. Largest Surplus Economies							
China	232	8.3	0.46	Germany	274	7.5	0.37
Germany	182	6.3	0.36	China	183	1.9	0.25
Japan	175	4.0	0.35	Saudi Arabia	133	17.7	0.18
Saudi Arabia	99	26.3	0.20	Switzerland	104	16.0	0.14
Russia	92	9.3	0.18	Netherlands	83	10.4	0.11
Netherlands	63	9.3	0.13	Korea	80	6.1	0.11
Switzerland	58	14.2	0.11	Kuwait	72	38.9	0.10
Norway	56	16.4	0.11	United Arab Emirates	65	16.1	0.09
Kuwait	45	44.6	0.09	Qatar	63	30.9	0.08
Singapore	37	25.0	0.07	Taiwan Province of China	58	11.8	0.08
Total	**1,039**		**2.1**	**Total**	**1,113**		**1.5**

Source: IMF, World Economic Outlook database.

moved up to occupy the remaining top 10 spots.[4] Overall, the concentration of deficits also fell dramatically: in dollar terms, the top 5 economies in 2006 accounted for 80 percent of the global deficit; in 2013, the top 5 accounted for less than 65 percent of the (reduced) total.

On the other side, China's surplus almost halved in relation to world GDP, putting it second to that of Germany. Also especially notable is Japan, nearly tied for second place in 2006 but absent from the top 10 in 2013. Major factors behind the decline of China's surplus were sharply higher investment, expansionary fiscal policy in response to the global financial crisis, booms in credit and asset prices, and lower external demand—all of which were reflected in substantial nominal and real effective exchange rate appreciation. Japan's trade balance moved into deficit for the first time since 1980, in part because of higher energy imports after the Great East Japan earthquake, the disruption to exports after the earthquake as well as the Thai floods, and increased public spending since the crisis. The surpluses of some European economies (Germany, Netherlands, Switzerland), by contrast, together with those of oil exporters, remained large.[5] Although Norway and Russia (and Singapore) dropped out of the top 10, Qatar and the United Arab Emirates joined that group, along with the Republic of Korea and Taiwan Province of China. The share of the top 5 economies in the global dollar surplus barely changed, with those economies accounting for about half the total.

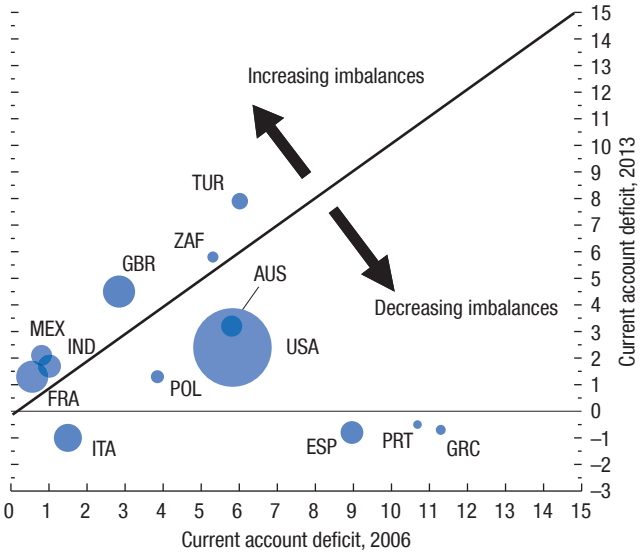
Therefore, in the most recent picture, the overall constellation of global imbalances looks quite different than that in 2006. What brought about this change and whether the narrowing of the imbalances is likely to persist are the subjects of the next two sections.

[4]See Chapter 1 of the October 2014 *Global Financial Stability Report,* which focuses on the growth of U.S. dollar corporate liabilities and private sector leverage in these emerging market economies, underlining that in most cases, the larger debtor positions have not been accompanied by larger fixed investments and higher growth.

[5]For at least some oil exporters, current account surpluses are insufficient from an intergenerational equity perspective.

Figure 4.2. Largest Deficit Economies, 2006 and 2013
(Percent of GDP)

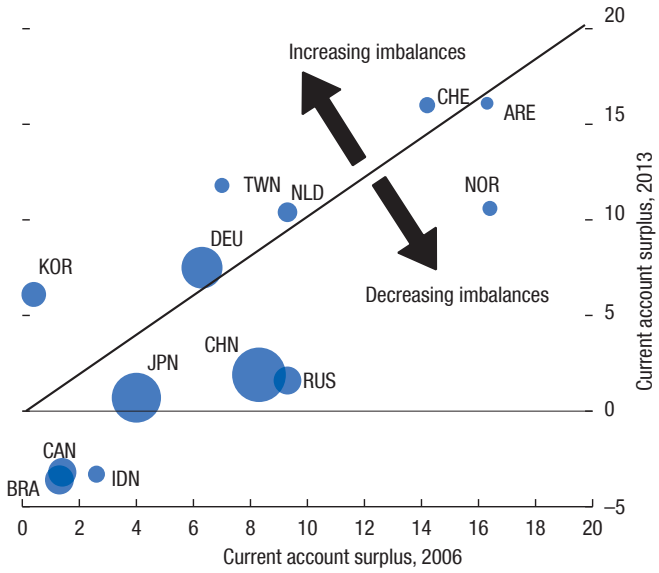
The large U.S. deficit shrank by more than half as a percent of its own GDP between 2006 and 2013. The largest European deficit economies also moved as a whole to a small surplus.



Source: IMF staff estimates.
Note: Size of bubble is proportional to the share of the economy in world GDP. Data labels in the figure use International Organization for Standardization country codes.

Figure 4.3. Largest Surplus Economies, 2006 and 2013
(Percent of GDP)

The large current account surpluses in China and Japan fell substantially as a percentage of national GDP between 2006 and 2013. A number of northern European and advanced Asian economies were running even greater surpluses by 2013, while some major emerging market economies moved from surpluses to deficits.



Source: IMF staff estimates.
Note: Size of bubble is proportional to the share of the economy in world GDP. Data labels in the figure use International Organization for Standardization country codes. Kuwait, Qatar, and Saudi Arabia are outliers and are not shown.

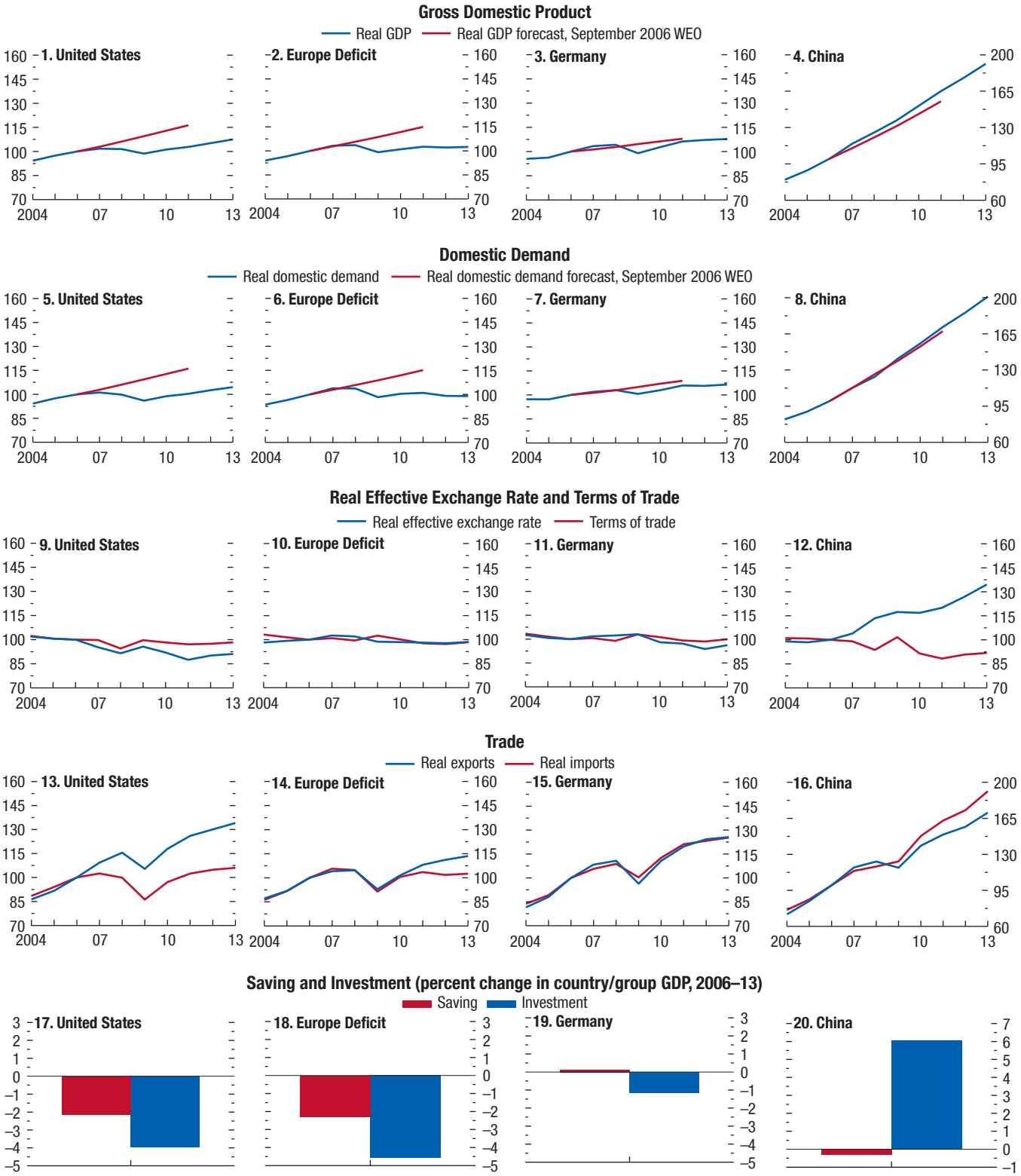
The Mechanics of the Adjustment

In principle, external adjustment can take place through changes in aggregate expenditure or changes in its composition. In practice, adjustment in deficit economies often takes place through expenditure reduction. That is certainly the case for the 2006–13 period (see, for example, Lane and Milesi-Ferretti 2014). This has meant that the squeeze in external (flow) imbalances was accompanied by a substantial widening of internal imbalances, that is, greater economic slack (to the extent that the declines in output in deficit economies have been cyclical, driven only by temporarily low demand). In a number of deficit economies, mostly advanced, the adjustment took place amid the typical legacy of financial crisis: a downshift in the path of output relative to precrisis trends (approximated by the medium-term output forecasts from the October 2006 *World Economic Outlook*).

The panels in Figure 4.4—which show a number of key variables for the main individual deficit and surplus economies established in Table 4.1, as well as for various groups of economies—highlight the downshift in output for the United States and European deficit economies. The output contractions were highly synchronized across advanced economies, in deficit and surplus economies alike, as were the declines in output paths. Nevertheless, the output contractions and downshifts were typically smaller, relatively speaking, in surplus economies, which experienced only mild financial crises, if any, and were mostly hit by spillovers. In China and other emerging market economies, output remained close to precrisis trends.

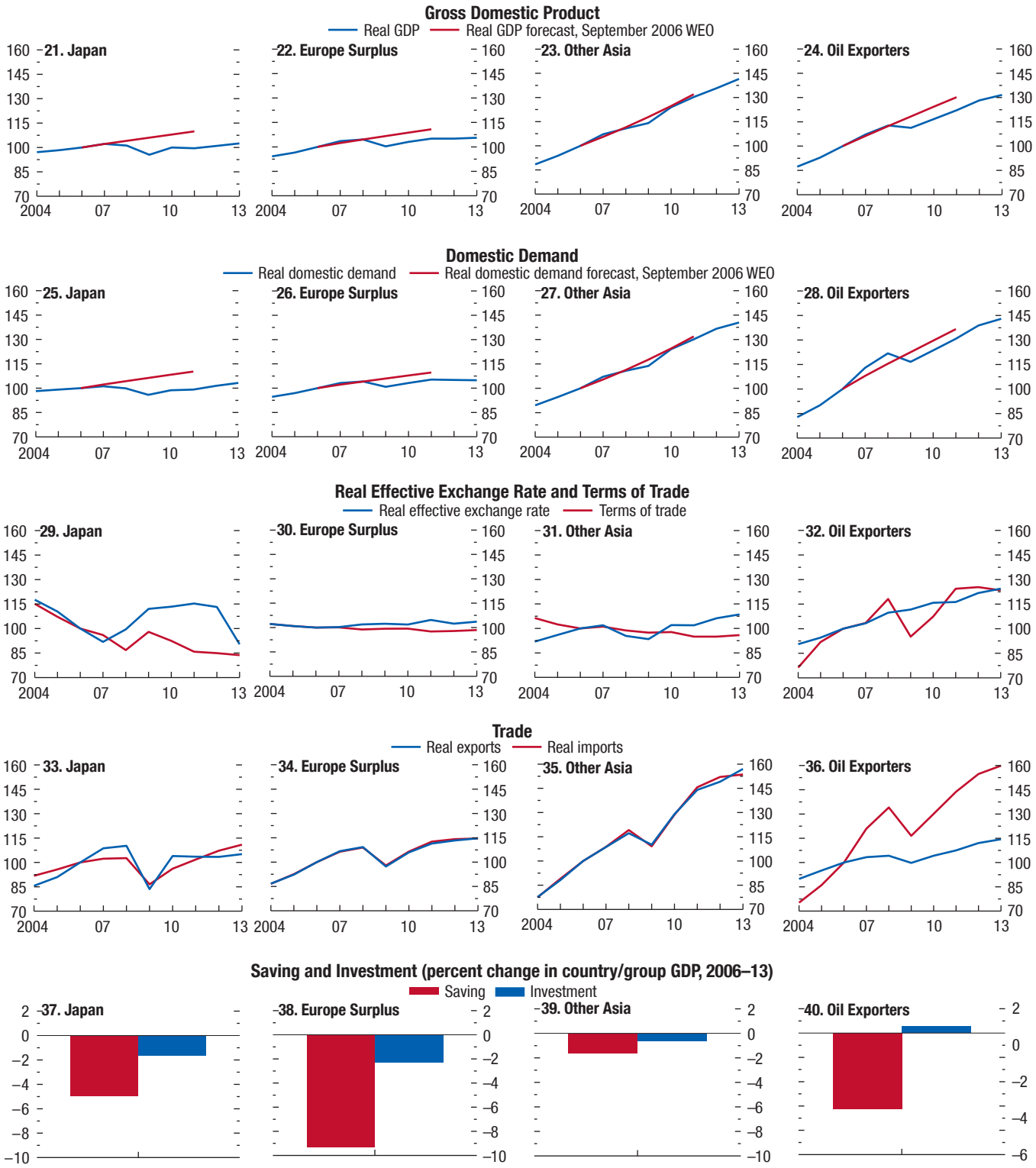
If the reduction in demand and output in deficit economies was the main mechanism for the post-2006 adjustment in global imbalances (and trade spillovers one of the transmission mechanisms), one would expect to see a relatively stronger export contraction in major surplus economies. This was indeed the case in China and oil exporters, and to a lesser extent in Japan, where exports contracted more than imports. The relatively stronger economic conditions in surplus

Figure 4.4. Key Indicators of External Adjustment, 2006 Episode
(Index, 2006 = 100 unless noted otherwise)



Source: IMF staff calculations.
Note: Europe deficit = Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, France, Greece, Hungary, Iceland, Ireland, Italy, Kosovo, Latvia, Lithuania, FYR Macedonia, Malta, Montenegro, Poland, Portugal, Romania, Serbia, Slovak Republic, Slovenia, Spain, Turkey, United Kingdom; Europe surplus = Austria, Belgium,

Figure 4.4. Key Indicators of External Adjustment, 2006 Episode *(continued)*
(Index, 2006 = 100 unless noted otherwise)



Denmark, Finland, Luxembourg, Netherlands, Sweden, Switzerland; Other Asia = Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, Thailand; Oil exporters = Algeria, Angola, Azerbaijan, Bahrain, Bolivia, Brunei Darussalam, Chad, Republic of Congo, Ecuador, Equatorial Guinea, Gabon, Iran, Iraq, Kazakhstan, Kuwait, Libya, Nigeria, Norway, Oman, Qatar, Russia, Saudi Arabia, South Sudan, Timor-Leste, Trinidad and Tobago, Turkmenistan, United Arab Emirates, Venezuela, Yemen.

economies thus broadly led to some demand rebalancing between deficit and surplus economies.

Weak domestic demand mainly reflected a sharp contraction in investment expenditure in most economies, but more so for deficit economies than for those in surplus. This, in turn, helped narrow the current account imbalances of advanced deficit economies (for example, the United States and a number of European deficit economies) and at the same time improved the financial net lending and borrowing positions of households and nonfinancial corporations. Although aggregate investment also fell in advanced surplus economies (for example, Japan and several northern European economies), this decline was more than offset by a reduction in aggregate saving, which led to an overall narrowing of their surpluses.[6] In contrast, China, the largest surplus economy in 2006, experienced a significant increase in investment, which, compounded by a small decline in national saving, resulted in a substantial narrowing of its current account surplus.[7]

Such rebalancing continued because many surplus economies, emerging market economies in particular, recovered faster from the global financial crisis than advanced economies in deficit. The sources of the differential reflected not only macroeconomic policy stimulus, notably in China, but also strong capital inflows, the rebound in commodity markets, and gains in terms of trade, which also boosted domestic demand.

These growth differentials supported further demand rebalancing, leading to relatively faster growth of import volumes and a rising divergence of the path for export volume from that for import volume. Current account surpluses declined, with some major emerging market economies experiencing current account reversals. Oil exporters were the main exception; their current account balances improved with higher oil prices, notwithstanding rapid import growth. The flip side to the rising terms of trade for commodity exporters was terms-of-trade losses in commodity importers, including in deficit economies; all else equal, the terms-of-trade losses lowered the improvements in external current accounts in nominal terms or as a percentage of GDP.

Real currency appreciation in some surplus economies and depreciation in some deficit economies suggest that some expenditure switching has taken place in the recent narrowing of imbalances. Currency appreciation in China, commodity exporters, and emerging market economies stands out on the surplus side; dollar depreciation has helped in the United States. In contrast, there has been little real appreciation in Japan or depreciation in European deficit and European surplus economies. This underscores how pegged currencies and downward nominal rigidities in a number of stressed deficit economies, notably in the euro area, have constrained the relative price adjustment needed for the reallocation of resources between tradables and nontradables. The CPI-based real effective exchange rate measure used in the analysis may, however, understate the impact of changes in relative prices on the current account relative to other measures, such as relative unit labor costs. Unfortunately, unit-labor-cost-based real effective exchange rates are available only for a relatively limited set of (mostly advanced) economies.

The relationship between a country's 2006 current account balance and the subsequent growth in domestic demand relative to that of its trading partners is positive and statistically significant (Figure 4.5). That is, economies with surpluses (deficits) experienced faster (slower) demand growth compared with their partners. The same is true of the subsequent change in the value of currencies (Figure 4.6): economies with surpluses (deficits) experienced real appreciations (depreciations) relative to their trading partners.

Although both expenditure reduction and expenditure switching have been at play, the subsequent adjustment in current account balances has been more strongly related to changes in relative domestic demand (Figure 4.7) than to changes in the real effective exchange rate (Figure 4.8). More formal analysis is afforded by a panel regression of the annual change in the current account (as a share of GDP) on the change in aggregate demand relative to that in trading partners, changes in the real effective exchange rate, and changes in the terms of trade. The regression yields statistically significant coefficients with the expected sign for all explanatory variables.[8] The R^2 of

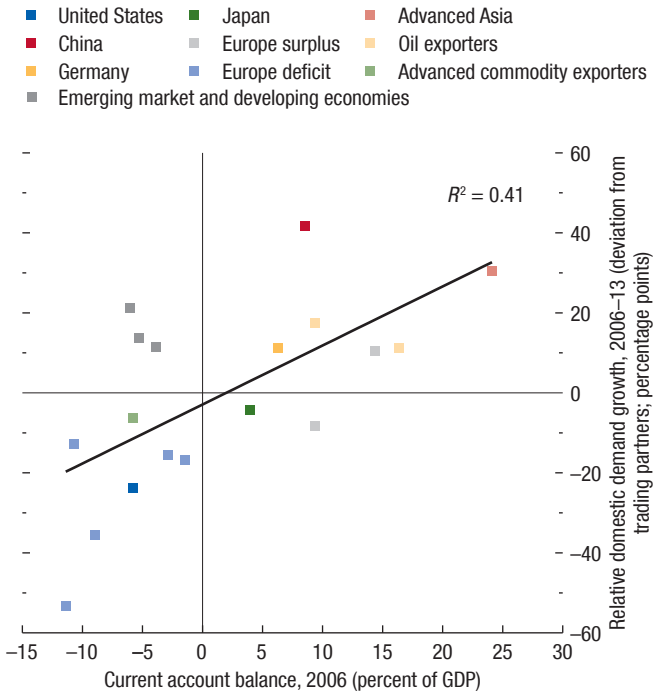
[6]Germany was the exception, with a relatively larger decrease in overall investment relative to saving, leaving it as the only large surplus economy to experience a widening of its surplus.

[7]Much of the increase in the investment-to-GDP ratio (5.5 percentage points) took place during the period 2006–09. The saving rate also increased during this period, partly offsetting the impact on the current account surplus, which fell by 3.5 percentage points. Since 2009 the saving rate has declined and the investment-to-GDP ratio has increased modestly, with a further 2.8 percentage point adjustment in the current account.

[8]The panel consists of 64 economies for the period 1970–2013; see Appendix 4.2 for details. The real effective exchange rate is potentially endogenous to the current account, which tends to bias the coefficient downward, so the finding of a statistically significant negative coefficient is despite, not because of, any endogeneity bias.

Figure 4.5. Growth of Domestic Demand Relative to Trading Partners versus 2006 Current Account

Economies with surpluses (deficits) in 2006 typically experienced faster (slower) domestic demand growth relative to that of their trading partners between 2006 and 2013.

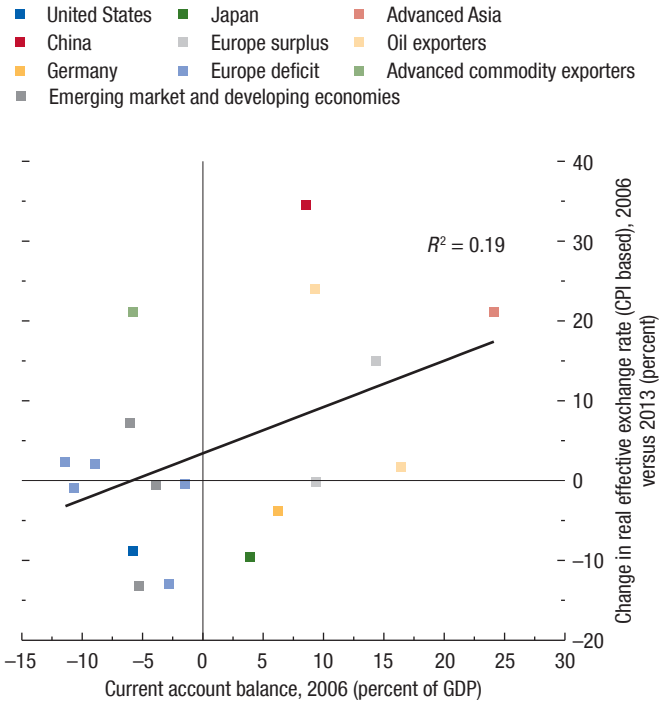


Source: IMF staff calculations.
Note: The deviation of domestic demand growth from that of trading partners is calculated as the difference between the deviation of real domestic demand growth (2006–13) from its preadjustment trend (1996–2003) and the deviation of domestic demand growth in trading partners (2006–13) from its preadjustment trend (1996–2003). Advanced commodity exporters = Australia; Advanced Asia = Singapore; Emerging market and developing economies = Poland, South Africa, Turkey; Europe deficit = Greece, Italy, Portugal, Spain, United Kingdom; Europe surplus = Netherlands, Switzerland; Oil exporters = Norway, Russia.

Figure 4.6. Change in Real Effective Exchange Rate (CPI Based) versus 2006 Current Account

(Percent)

Economies with surpluses (deficits) in 2006 typically experienced real appreciations (depreciations) relative to that of their trading partners between 2006 and 2013.



Source: IMF staff calculations.
Note: CPI = consumer price index. Advanced commodity exporters = Australia; Advanced Asia = Singapore; Emerging market and developing economies = Poland, South Africa, Turkey; Europe deficit = Greece, Italy, Portugal, Spain, United Kingdom; Europe surplus = Netherlands, Switzerland; Oil exporters = Norway, Russia.

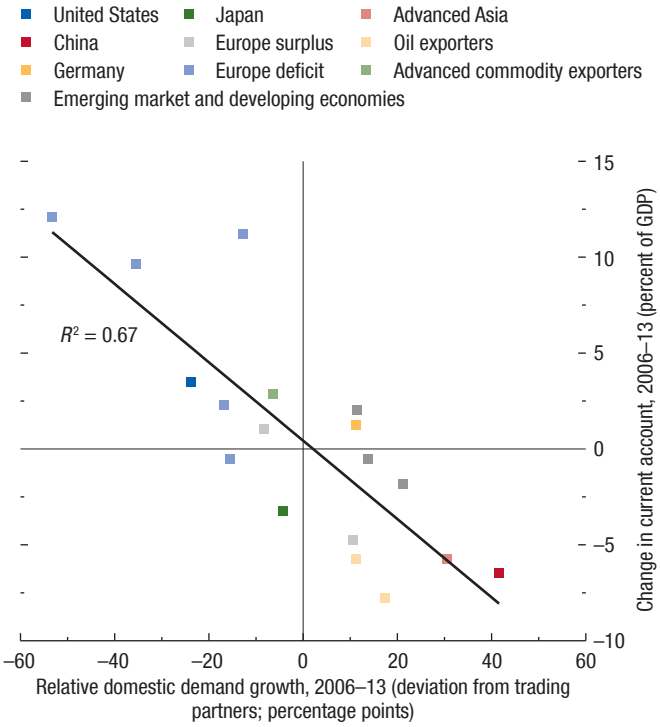
the regression (including lags of all explanatory variables) is 0.41; dropping the aggregate demand terms lowers it to 0.10, but dropping the real effective exchange rate term lowers it only to 0.39. In other words, the real effective exchange rate, though statistically significant, adds little to the explanatory power of the regression. For the 2007–13 period, the relative importance of the demand terms is even more apparent: the (implied) R^2 of the full model for this period is 0.51; without the demand terms it is 0.02, and without the real effective exchange rate term, it is 0.51. The importance of expenditure reduction in the recent adjustment can also be gauged by comparing the implied 2013 level of aggregate (surplus and deficit) global imbalances with, and without, the effect of the real effective exchange rate movement; the latter is higher by only 0.4 percent of world GDP, while the overall reduction in imbalances for the 64 economies in the sample was 2.7 percent of world GDP.

The limited explanatory power of the real effective exchange rate in the current account adjustment reflects a number of factors beyond the generally dominant role of demand changes in a global crisis context. Structural and institutional factors limited real effective exchange rate adjustment in some cases, notably within the euro area.[9] In the case of the United States and Japan, shocks to domestic energy production may

[9]On implications of the nominal exchange rate regime for the persistence of current account imbalances, see Ghosh, Qureshi, and Tsangarides 2014.

Figure 4.7. Changes in Domestic Demand and Current Account

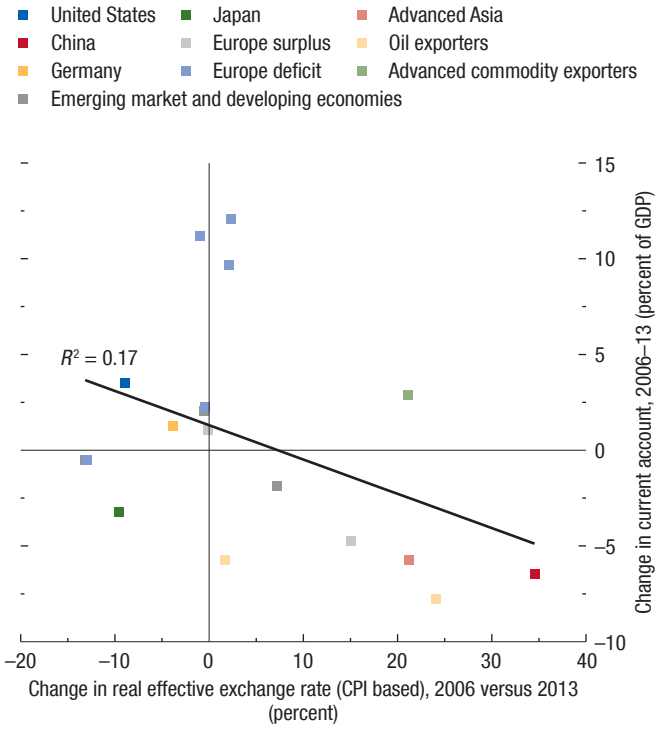
Expenditure reduction played an important role in current account adjustment between 2006 and 2013. Economies with a larger (smaller) contraction in domestic demand relative to that of their trading partners typically experienced a larger (smaller) improvement in their current account balances.



Source: IMF staff calculations.
Note: Advanced commodity exporters = Australia; Advanced Asia = Singapore; Emerging market and developing economies = Poland, South Africa, Turkey; Europe deficit = Greece, Italy, Portugal, Spain, United Kingdom; Europe surplus = Netherlands, Switzerland; Oil exporters = Norway, Russia.

Figure 4.8. Changes in Real Effective Exchange Rate and Current Account

Expenditure switching also was at work in current account adjustment between 2006 and 2013. Economies with depreciated (appreciated) currencies typically experienced an improvement (deterioration) in their current account balances.



Source: IMF staff calculations.
Note: CPI = consumer price index. Advanced commodity exporters = Australia; Advanced Asia = Singapore; Emerging market and developing economies = Poland, South Africa, Turkey; Europe deficit = Greece, Italy, Portugal, Spain, United Kingdom; Europe surplus = Netherlands, Switzerland; Oil exporters = Norway, Russia.

have weakened the relation between exchange rate changes and current account adjustment. In the case of the United States, for example, increased production of tight oil led to current account improvements, while the underlying equilibrium exchange rate likely appreciated. Finally, changes in investor sentiment have sometimes worked against real effective exchange rate realignment, including, for example, in the case of safe haven flows.

The 2006–13 episode is not, of course, the first time that global imbalances have contracted: previous occasions include 1974 and 1986. The latter provides an instructive contrast with the current instance (Box 4.1): the real effective exchange rate pictures were broadly similar, with the yen appreciating substantially in real effective terms in that episode while the dollar depreciated. No other currencies changed notably in real effective terms. In the former West Germany, for example, real appreciation began only with reunification in 1990. If anything, the reach of exchange rate changes has been broader in the current episode, with the currencies of major emerging market economies and commodity exporters also appreciating.

The main difference between these adjustment episodes is in the growth environment. Whereas in 1986 the narrowing of imbalances took place in the context of growth rotating above preadjustment trends, the narrowing in the current instance has occurred in the context of the global financial crisis, with likely permanent losses in output levels and, in some cases, even

lower trend growth. Not surprisingly, demand reduction has contributed more to the recent narrowing than in 1986, and expenditure switching correspondingly less.

Juxtaposing the external adjustment of the worst-affected East Asian crisis economies in the late 1990s with that of four of the euro area economies most severely affected by the recent crises provides another useful comparison (Box 4.2). Massive and sustained real depreciations, together with a supportive external environment, allowed the East Asian economies to benefit from expenditure switching. By contrast, the four stressed euro area economies during the current episode have experienced only limited expenditure switching so far: the adjustment of relative prices through internal devaluation has been gradual and more painful, hurting their growth prospects (see, for instance, Tressel and others 2014).[10] The narrowing of global imbalances during the current episode is thus bracketed by the two extremes of the East Asian and the euro area experiences.

Overall, the limited role of exchange rate adjustments in the narrowing of imbalances has meant that that process has entailed high economic and social costs—most notably, high rates of unemployment and large output gaps—partly because resources were not quickly reallocated between tradables and nontradables sectors. However, it has also allowed for substantial adjustment without disruptive exchange rate adjustments to the major reserve currencies (most notably, the dollar) that some feared before the global financial crisis. In the process, the distortions underlying the large imbalances up to about 2006, that is, asset price bubbles and credit booms in many advanced economies, have also largely corrected—though others may have emerged, including because of the expansionary policies that the crisis has engendered.

The Durability of the Adjustment

How lasting is the observed narrowing of current account imbalances likely to be? There are two elements to this question. Mechanically, as activity recovers and output gaps start to close, domestic demand will rebound in deficit economies; the concern is that without sufficient expenditure switching, this rebound could lead to a renewed widening of external imbalances.[11] Going beyond such mechanics, it is worth asking whether the policy and other distortions that underlie global imbalances have diminished, especially because—other than the risk of a sudden stop—it is these distortions that carry implications for multilateral welfare. Moreover, inasmuch as policy and other distortions do not—or should not—reappear, the extent to which they have diminished speaks to the durability of the observed adjustment.

Output Gaps and Imbalances

Whether global imbalances will, in the absence of further expenditure switching, again expand as the recovery gets under way is closely linked to the issue of whether output declines in deficit economies since the global financial crisis have been largely cyclical or structural. Experience from past financial crises suggests that potential output often declines and the country never recovers its precrisis growth path (see Cerra and Saxena 2008), but it is extraordinarily difficult to arrive at a definitive judgment—especially in regard to what happens after a far-reaching global financial crisis.

To determine the sensitivity of estimates of the extent to which the observed narrowing of flow imbalances will reverse as output gaps close, Figure 4.9 presents different scenarios using alternative assumptions about output gaps, estimates of which are subject to sizable uncertainty.[12] Between 2006 and 2013, global imbalances shrank by some 2.8 percent of world GDP.[13] In a counterfactual scenario, mechanically setting the estimated 2013 output gaps from the *World Economic Outlook* (WEO) for the Group of Twenty economies to zero and comparing the cycli-

[10]See Berger and Nitsch 2014 and Ghosh, Qureshi, and Tsangarides 2014 for evidence that imbalances within the euro area became more persistent with the adoption of the euro.

[11]As noted previously, in the aggregate, real effective exchange rate movements have played only a minor role in the adjustment process to date—though there are some important individual exceptions; for instance, China's real effective exchange rate has appreciated by some 30 percent since 2007.

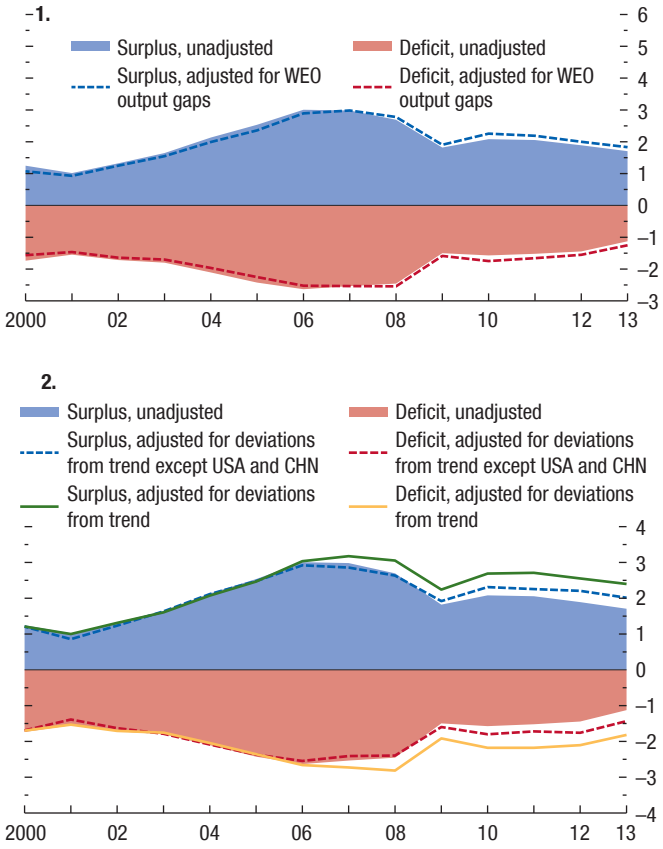
[12]This analysis was undertaken by Vladimir Klyuev and Joong Shik Kang; see Appendix 4.4 and Kang and Klyuev, forthcoming, for details.

[13]The sensitivity analysis is based on alternative assumptions about the output gaps of the Group of Twenty economies. Both in 2006 and in 2013, these economies accounted for more than three-quarters of global deficits and about one-half of global surpluses. The four largest economies—China, Germany, Japan, and the United States—accounted for 60 percent of total deficits and 40 percent of total surpluses in 2006 and 35 percent of total deficits and 31 percent of total surpluses in 2013.

Figure 4.9. Current Account Balances, Cyclically Adjusted and Unadjusted

(Percent of world GDP)

The narrowing of current account imbalances since 2006 is likely to be long lasting, as cyclical factors appear to have played a relatively minor role. Even in the worst-case scenario, which results from estimating output gaps as the difference between the actual level of output in 2013 and the 2013 level extrapolated using precrisis trends, the current account narrowing amounts to around 1½ percent of world GDP (which is almost half the adjustment without cyclical factors).



Source: IMF staff calculations.
Note: Countries are classified as deficit or surplus based on their 2006 position. The trend is estimated in log of real GDP over the period 1998–2005. CHN = China; USA = United States.

cally adjusted global imbalance in 2013 with the actual level in 2006 yields a narrowing of 2.6 percent of world GDP (Figure 4.9, panel 1).[14] The implication is that virtually all of the narrowing of global imbalances observed to date should be durable and should not reverse as output gaps close.

[14]Economies are classified as surplus or deficit based on their positions in 2006. Therefore, the adjustment of global imbalances reported in this section differs somewhat from that reported elsewhere in this chapter, where economies are classified as surplus or deficit according to their position each year.

This surprisingly modest estimate for the cyclical component of the global imbalances derives from the synchronicity of output gaps across economies (because it is the difference in output gaps that matters) and from the fact that the output gaps themselves are (relatively) small. In particular, in the WEO data, the economies that saw the greatest declines in output relative to precrisis trends also experienced the largest slowdowns in potential output growth, compressing the range of output gaps.

An alternative view is that an economy's capacity to produce cannot simply be destroyed in a financial crisis, whereas a sharp increase in uncertainty, pessimistic expectations, disruption of financing, and other factors could lead to large, but still temporary, decreases in demand. An extreme version of this view is that the full extent of the deviation of output from the 2013 level that would be implied by precrisis trends represents the output gap. Applying this alternative assumption naturally gives significantly larger cyclically adjusted global imbalances for 2013: a deficit of 1.8 percent of world GDP and a surplus of 2.3 percent of world GDP, for a total imbalance of 4.1 percent of world GDP (Figure 4.9, panel 2). The improvement in global imbalances since 2006 would then amount to only 1.5 percent of world GDP. Thus, in this scenario, almost half of the observed adjustment could be undone as output gaps close.

It turns out, however, that it is mainly the U.S. economy that is critical to this calculation. The WEO output gap for the United States in 2013 is 3.8 percent, whereas the trend-based alternative would imply a gap of 10.7 percent, which seems implausible and is hard to reconcile with, for example, improving labor market indicators. Returning to the WEO gap for the United States (keeping all others at their trend deviation gaps) in the counterfactual simulation, or returning to the WEO gaps for both the United States and China, restores the narrowing in the cyclically adjusted global imbalances since 2006 to about 2 percent of world GDP (Figure 4.9, panel 2).

Keeping in mind the sizable uncertainty surrounding estimates of output gaps (notably but not only for the euro area), this suggests that even under extreme assumptions about the size of output gaps, one-half of the observed shrinkage in global imbalances would remain as these gaps close; a more plausible gap assumption for the United States alone would mean that two-thirds should endure.

Distortions and Imbalances

Concerns about global imbalances go beyond just their magnitude: from the outset, a key issue in debates has been the extent to which observed imbalances are manifestations of underlying policy distortions. A complementary approach to assessing the durability of the correction to date is therefore to ask whether the underlying distortions have diminished in the intervening years.

To this end, this section compares observed cyclically adjusted current account balances[15] with those predicted using the IMF's External Balance Assessment (EBA) framework, which is an empirical model of current account determination. Put differently, the residuals from the EBA regression, also known in this context as "current account gaps," can be considered an indicator of the proportion of current account balances that cannot be explained by a country's macroeconomic fundamentals. They are thus a measure of excessive imbalances reflective of underlying distortions and possibly systemic risks.[16] Three important caveats bear emphasizing. First, determining globally consistent measures of current account gaps remains difficult and is model specific. To the extent that the EBA model omits certain unobserved fundamentals, the residual imputes their effect to distortions. Second, some of the variables in the regression are policy variables, which need not necessarily be at desirable or sustainable settings. Although the EBA model in its operational form explicitly corrects for deviations between actual and desirable policies ("policy gaps"), time series of "desirable" policy settings are not available for historical data; in the exercise that follows, therefore, the 2013 estimates of desirable policy settings are applied to 2006 as well.[17] Third, even for 2013, IMF staff assessments of current account gaps (provided in the IMF's *External Sector Report*) draw on the EBA-based current account gaps (and in most cases are very similar to them) but also reflect staff judgment.

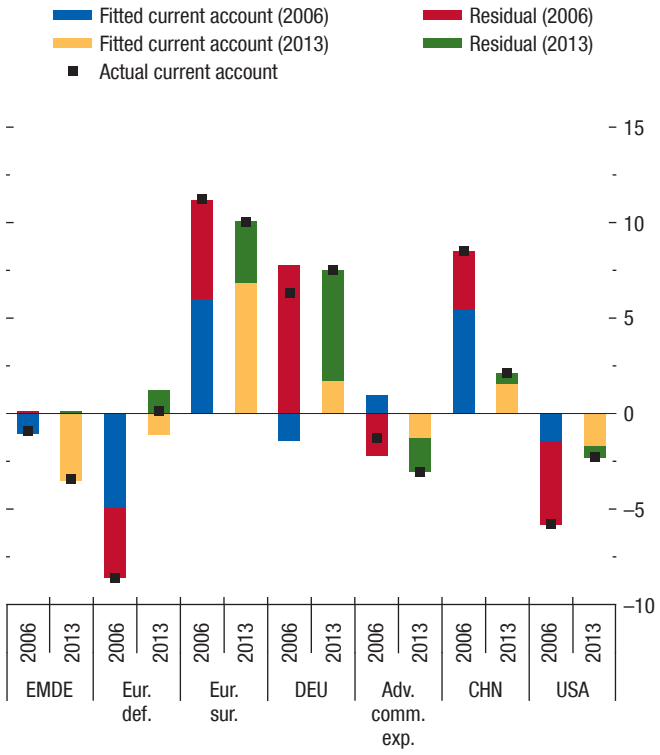
Figure 4.10 reports the fitted and actual values of the current account for the major economies and country groups identified in Figure 4.1, where the regression uses actual policy settings (so the residual abstracts from the effect on the current account of divergences of policies from their desirable values and implicitly captures only nonpolicy distortions).[18]

Figure 4.11 (panel 1) provides a more direct comparison of the residuals over time: bubbles (whose

Figure 4.10. Largest Deficit and Surplus Economies: Current Account Gaps

(Percent of GDP, EBA fitted)

"Current account gaps"—the difference (marked as "residual") between actual current account balances and those predicted using the IMF's External Balance Assessment framework—in the largest deficit and surplus economies shrank between 2006 and 2013.



Source: IMF staff calculations.
Note: Adv. comm. exp. = Advanced commodity exporters (Australia, Canada); CHN = China; DEU = Germany; EBA = External Balance Assessment; EMDE = emerging market and developing economies (Brazil, India, Indonesia, Mexico, South Africa, Turkey); Eur. def. = Europe deficit (Greece, Poland, Portugal, Spain); Eur. sur. = Europe surplus (Netherlands, Switzerland); USA = United States. The country groups are averaged using market weights.

[15]In what follows, "cyclically adjusted" refers to the WEO output gaps, not the trend deviation output gaps, which were used only for the alternative scenario for the counterfactual analysis earlier in the chapter.

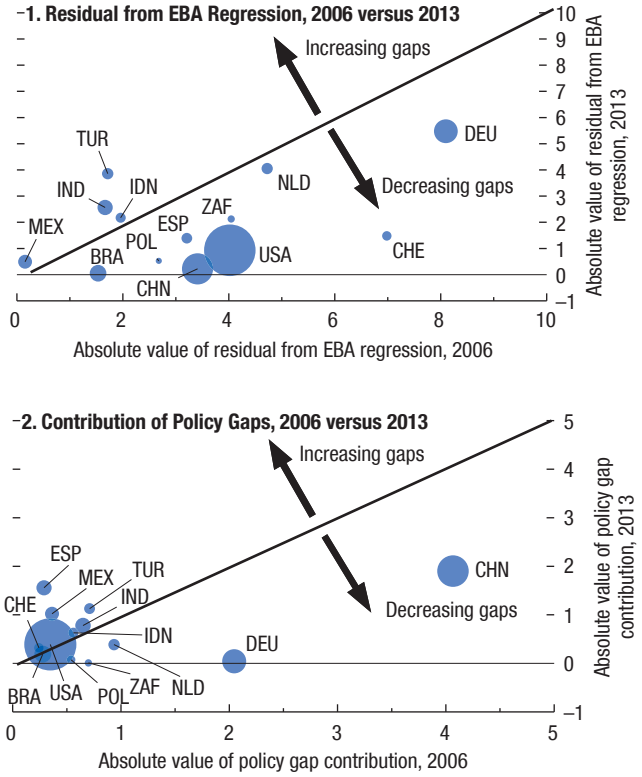
[16]These arguments are developed by Blanchard and Milesi-Ferretti (2012).

[17]Policy gaps or distortions are deviations of actual policy stances (that is, fiscal balances, health spending, foreign exchange intervention, private credit, and capital controls) from their desirable or appropriate levels (as determined by IMF country desks). At the same time, to ensure global consistency, domestic policies are considered relative to foreign policies.

[18]The EBA methodology has been developed by the IMF's Research Department to provide current account and exchange rate assessments for a number of economies from a multilateral perspective. The EBA framework has been operational only since 2011, so data on desirable policies for 2006 are not available. The EBA exercise does not cover Middle Eastern oil exporters, so these economies are not included in this analysis.

Figure 4.11. Understanding Changes in Distortions Using External Balance Assessment Regressions, 2006 versus 2013

Current account gaps fell between 2006 and 2013 for the largest and systemically most important economies. This suggests that underlying distortions and global risks also shrank. The contribution of policy gaps in most economies either narrowed or remained roughly unchanged, with the exception of a few emerging market economies. The latter implies that the current account gaps for these economies were larger than reported.



Source: IMF staff estimates.
Note: EBA = External Balance Assessment. Size of bubbles is proportional to the share of the economy in world GDP. Points below the 45-degree line indicate a smaller estimated residual in 2013 than in 2006; points above, a larger residual. Optimal policies are available only for 2013 and are assumed to be the same for 2006. Data labels in the figure use International Organization for Standardization country codes.

magnitude is proportional to the country's share of world GDP) that lie below the 45-degree line indicate a smaller current account gap in 2013 than in 2006. The general picture that emerges from the analysis is that current account gaps tended to decrease between 2006 and 2013 for the largest and systemically most important economies. As such, underlying distortions and global risks also became smaller. However, they did not disappear. In particular, whereas the current account gaps for China, European deficit economies, and the United States were close to zero in 2013, they remained elevated for European surplus economies, including Germany.

The residuals above exclude the estimated effects of policy gaps, which are shown separately in Figure 4.11, panel 2. For a few (mostly emerging market) economies, the estimated effect of policy gaps on current account imbalances is larger in 2013 than it was in 2006. Adding these policy gaps to the residuals would therefore widen the current account gaps for these economies. In most cases, however, the net contribution of policy gaps to current account gaps either remained roughly constant or diminished between 2006 and 2013.

What policies were behind these improvements in the larger economies? In the United States, despite some improvement in the cyclically adjusted fiscal balance, since it is the difference in the balance relative to other trading partners that matters, the fiscal variable actually results in a slight widening of the policy gap between 2006 and 2013.[19] A more telling improvement relates to excesses in the financial sector, which both the bust phase of the boom-bust cycle and tighter regulation have helped reduce.[20] The net change in the U.S. policy gap between 2006 and 2013, therefore, is roughly a wash—and the bubble for the United States in Figure 4.11 (panel 2) lies on the 45-degree line. In China, the policy improvement is captured by slower accumulation of foreign exchange reserves and some relaxation of capital controls, which are the counterparts to the substantial real effective exchange rate appreciation. The policy gap therefore shrinks significantly. Not all of the narrowing of the current account surplus is necessarily benign, however. Rather than a decline in saving, much of the change in China's current account between 2006 and 2013 comes through an increase in the already-high rate of investment, exacerbating concerns about allocative efficiency and financial stability and raising questions about its sus-

[19]The U.S. fiscal balance (relative to trading partners) improved through 2009, then deteriorated between 2010 and 2013, implying little difference between snapshots of 2006 and 2013.

[20]In the EBA regression, most excesses are captured by the residual ("distortions") rather than policy variables such as the quality of financial regulation (which is difficult to quantify in a statistical analysis). The only policy variable proxying such excesses is the growth of the ratio of credit to GDP. This is why the bulk of the improvement in the current account gap for the United States shows up in the regression residual rather than in the effect of the policy gap variable. It is also why it would not be appropriate to make too sharp a distinction between "policy distortions" and "other distortions" in the analysis.

tainability. For Germany, the net impact of the policy gap shrinks because the effect of lower excessive credit growth (that is, credit growth greater than the rate of GDP growth) more than offsets the tightening of the fiscal balance (relative to trading partners), which itself contributes to widening Germany's current account surplus.

Although such analysis can never be definitive (being highly dependent on the model used to identify "fundamentals"), it does suggest that policy and other distortions have diminished along with the observed narrowing of flow imbalances during the past few years. The improvement in global imbalances thus is not only quantitative but rather represents, from a multilateral perspective, a qualitative improvement in welfare.[21] Nevertheless, the European deficit economies' adjustment difficulties, which have resulted in massive import compression, unemployment, and economic dislocation, point to greater scope for surplus economies—especially, though not exclusively, those in the region—to rebalance their economies and switch expenditure toward foreign-produced goods. Moreover, the conclusion that reduced policy and other distortions have narrowed global imbalances is somewhat at odds with the finding in the preceding section that lower demand, largely matched by a decrease in potential output, has been responsible for much of the observed narrowing of global imbalances. These two observations may be reconciled to the extent that potential output was artificially high as a result of distortions—or (what amounts to the same thing) that output was above potential (including because of distortions in the financial sector), and the global financial crisis both resolved the distortions and lowered demand, bringing it more in line with potential output. This can only be a partial explanation, however, so the role of policy improvements and lower distortions in accounting for the narrower flow imbalances is likely to be limited.[22]

[21]This is not to suggest, of course, that no distortions remain. The *2014 Pilot External Sector Report* (IMF 2014) discusses a variety of policies to further align current account balances with underlying fundamentals.

[22]The low goods and services price inflation in the run-up to the global financial crisis suggests that output is unlikely to have been much above potential since, in that case, the low observed inflation would have meant that all of the excess demand was falling only on imported goods. Although (for instance) the United States indeed had a large current account deficit, it seems implausible that the excess demand would have fallen exclusively on imported goods.

The Stock Dimension of Imbalances

Going beyond flow analysis, the external balance sheet of a country—its international investment position in the balance of payments statistics—is another important dimension in global imbalances (see, for example, Obstfeld 2012a, 2012b). Economies with large net liability positions, in particular, may become vulnerable to disruptive external financial market conditions, including, in the extreme case, the sudden drying up of external financing (sudden stops) (see, for example, Catão and Milesi-Ferretti 2013).[23] Both in the global financial crisis and during the subsequent euro area crisis, such vulnerabilities played a prominent role, as a number of economies experienced sovereign debt problems, sudden stops, or both.

Comparing the 10 largest debtors and 10 largest creditors in 2006 and 2013 reveals striking inertia in these rankings (Table 4.2)—especially compared with those for current account balances (Table 4.1). This inertia exists because net foreign asset stocks are typically slow-moving variables. There is also some overlap between the top 10 list for flow imbalances and that for stock imbalances—which is to be expected, given the two-way feedback between the current account and net foreign asset dynamics (surpluses cumulate into rising stocks; higher net foreign assets generate more factor income, contributing to larger surpluses). The other striking fact about global stock imbalances—again, in contrast to flow imbalances—is that they continued to grow during the period 2006–13 (Figure 4.12), with little discernible change in pace after 2006, the year in which flow imbalances peaked. Moreover, they became, if anything, more concentrated on the debtor side, with the share of the top 5 economies rising from 55 percent of world output in 2006 to 60 percent in 2013. The trend of international financial integration has not been reversed, as might have been expected following the global financial crisis (Figure 4.13).

What explains the widening stock imbalances? When these imbalances are measured as a percentage of GDP, there can be three reasons for wider net foreign asset positions. The first is continued flow imbalances. Even a narrowing of these imbalances, as occurred during the period under consideration, is not enough, all else equal, for a decrease in stock imbal-

[23]Flow imbalances are sometimes taken as indicating potential distortions of current policy settings, whereas stock imbalances reflect past policies; stock imbalances may, however, be relevant for current vulnerabilities.

Table 4.2. Largest Debtor and Creditor Economies (Net Foreign Assets and Liabilities), 2006 and 2013[1]

2006				2013			
	Billions of U.S. Dollars	Percent of GDP	Percent of World GDP		Billions of U.S. Dollars	Percent of GDP	Percent of World GDP
1. Largest Debtor Economies							
United States	–1,973	–14.2	–3.92	United States	–5,698	–34.0	–7.64
Spain	–862	–69.7	–1.71	Spain	–1,400	–103.1	–1.88
United Kingdom	–762	–30.6	–1.51	Brazil[2]	–750	–33.4	–1.01
Australia	–462	–59.2	–0.92	Italy	–739	–35.6	–0.99
Italy	–453	–24.1	–0.90	Australia	–746	–49.6	–1.00
Brazil[2]	–349	–32.1	–0.69	France	–578	–20.6	–0.77
Mexico[2]	–346	–35.8	–0.69	India[2]	–479	–25.5	–0.64
Greece	–237	–90.4	–0.47	Mexico[2]	–445	–35.3	–0.60
Turkey[2]	–206	–39.0	–0.41	Turkey[2]	–409	–49.8	–0.55
India[2]	–178	–18.8	–0.35	Poland	–380	–73.5	–0.51
Total	**–5,829**		**–11.6**	**Total**	**–11,624**		**–15.6**
2. Largest Creditor Economies							
Japan	1,793	41.2	3.56	Japan	3,056	62.4	4.10
Germany	782	26.9	1.55	China[2]	1,686	17.8	2.26
Hong Kong SAR	535	276.4	1.06	Germany	1,678	46.2	2.25
Saudi Arabia[2]	513	136.4	1.02	Saudi Arabia[2]	1,063	142.1	1.43
Taiwan Province of China[3]	504	134.0	1.00	Switzerland	939	144.3	1.26
Switzerland	495	122.3	0.98	Taiwan Province of China[3]	933	190.9	1.25
China[2]	476	17.0	0.94	Hong Kong SAR	767	280.1	1.03
Singapore[2]	371	251.0	0.74	Norway[4]	732	142.8	0.98
United Arab Emirates[2]	312	140.4	0.62	Kuwait[2]	652	353.0	0.87
Kuwait[2]	210	206.7	0.42	Singapore[2]	637	213.9	0.85
Total	**5,991**		**11.9**	**Total**	**12,144**		**16.3**

Sources: IMF, World Economic Outlook database; External Wealth of Nations Mark II data set (Lane and Milesi-Ferretti 2007); and Lane and Milesi-Ferretti 2012.
[1]The External Wealth of Nations Mark II data set (Lane and Milesi-Ferretti 2007) used in this analysis excludes gold holdings from foreign exchange reserves.
[2]IMF staff estimates for these economies may differ from the international investment position, where reported.
[3]National sources.
[4]IMF staff estimates for 2013.

ances. What would be required for such a decrease would be a reversal of flows (from deficit to surplus or vice versa) that is sustained: one year of surplus after several years of deficits will typically not suffice. Indeed, there is a strong relationship (R^2 = 0.73, and t-statistic of 13.6) between the change in net foreign assets between 2006 and 2013 and the current account balances accumulated during the same period (Figure 4.14). On average (and in most of the top 10 cases), continued current account deficits in debtor economies played the main role in the widening stocks of net foreign liabilities as a percentage of GDP (Table 4.3). Similarly, for creditors, continued current account surpluses explain much of the widening stocks of net foreign assets.

Second, valuation effects can change asset positions independently of flow imbalances. Such changes had some effect on net foreign asset positions between 2006 and 2013, albeit in most cases less than those from cumulative current account balances or economic growth for the largest debtors and creditors (Table 4.3).[24] Notable exceptions were Belgium, Canada, Finland, Greece, South Africa, and the United Kingdom, where valuation changes were the dominant factor behind the improvement in their net foreign asset positions—and in the United Kingdom's case, knocked it out of the largest 10 debtors in 2013 (Table 4.2).

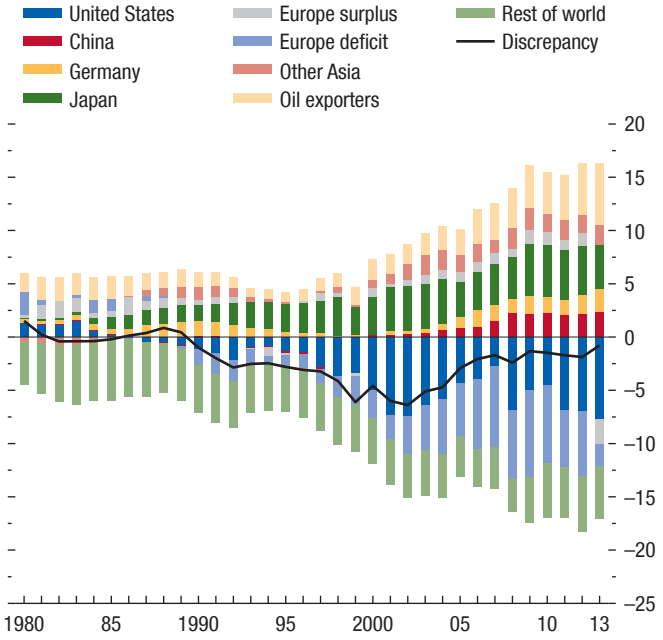
The sources of valuation changes are complex and depend on the country's initial international investment position (creditor or debtor) and the composition of its gross assets and liabilities (fixed income, equity).[25] In general, asset prices increased

[24]See Appendix 4.1.

[25]A panel regression of 60 economies from 2006 to 2013 suggests that creditor economies made fewer valuation gains (as a share of their initial stock position) compared with debtor economies. At the same time, nominal depreciation in debtor economies appears to have increased valuation gains for these economies (because it

Figure 4.12. Global Net Foreign Assets ("Stock") Imbalances
(Percent of world GDP)

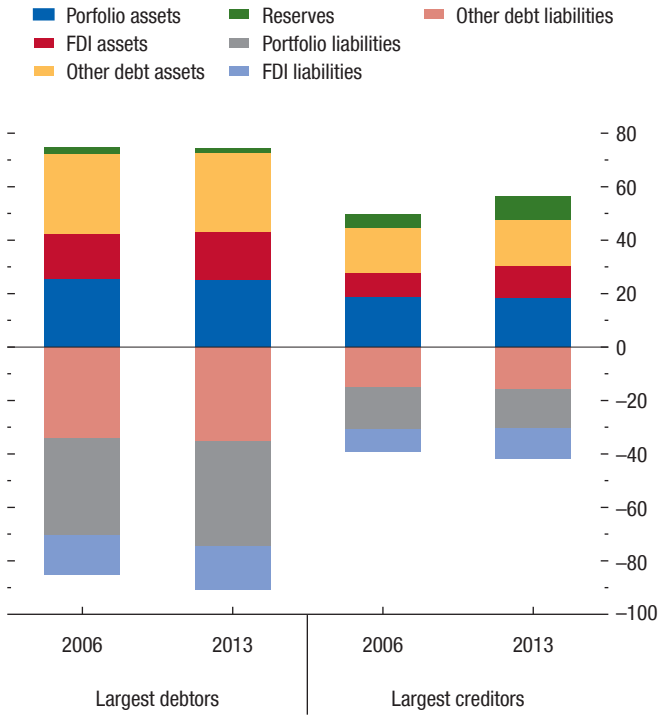
Stock imbalances continued to grow between 2006 and 2013 despite the narrowing in flow imbalances. This reflects the fact that to reduce the former, a sustained reversal in the latter is needed.



Source: IMF staff calculations.
Note: Oil exporters = Algeria, Angola, Azerbaijan, Bahrain, Bolivia, Brunei Darussalam, Chad, Republic of Congo, Ecuador, Equatorial Guinea, Gabon, Iran, Iraq, Kazakhstan, Kuwait, Libya, Nigeria, Norway, Oman, Qatar, Russia, Saudi Arabia, South Sudan, Timor-Leste, Trinidad and Tobago, Turkmenistan, United Arab Emirates, Venezuela, Yemen; Other Asia = Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, Thailand. European economies (excluding Germany and Norway) are sorted into surplus or deficit each year by the signs (positive or negative, respectively) of their current account balances.

Figure 4.13. Gross Foreign Assets and Liabilities
(Percent of world GDP)

Gross assets and liabilities of the largest debtors and creditors continued to expand between 2006 and 2013, with no reversal in the trend of international financial integration following the global financial crisis.



Sources: External Wealth of Nations Mark II data set (Lane and Milesi-Ferretti 2007); and Lane and Milesi-Ferretti 2012.
Note: FDI = foreign direct investment. Portfolio is both equity and debt portfolio stocks, and other debt is financial derivatives and other (including bank) investments.

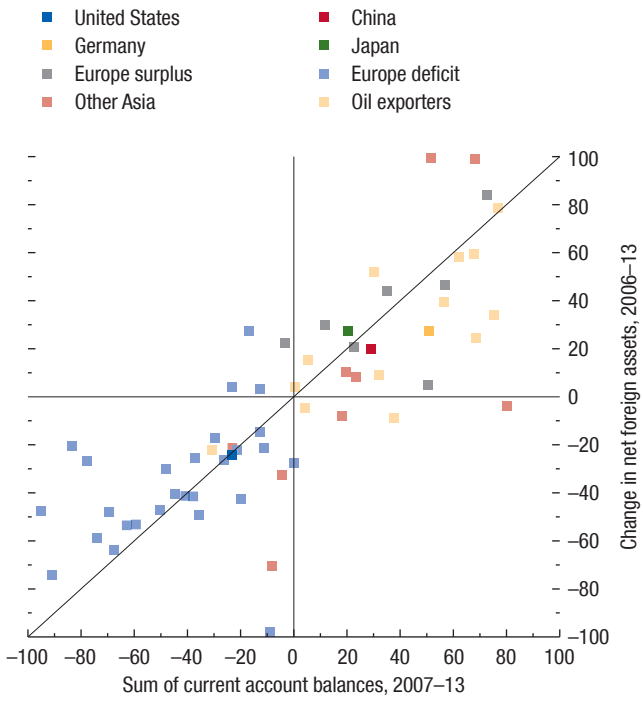
between 2006 and 2013: both equity and bond prices rose with the substantial decline in long-term interest rates, which, all else equal, should benefit net creditors relative to net debtors (and thus widen imbalances). Conversely, the drastic downward revision of economic prospects for most large debtor economies after the global financial crisis lowered the value of assets located in these economies. Although this implies a negative wealth effect for a particular country, it also means a lower value of its foreign liabilities, implying a capital gain. The United States was unique in this regard: despite the country being a major debtor and having experienced a large downward revision in its growth prospects, the value of U.S. assets rose because of safe haven concerns, implying a capital loss on its international investment position.

Third, growth effects can also lead to higher imbalances as a share of GDP, as in the case of public debt (Table 4.3). Economic growth was also important, with the effects up to roughly one-third the size of those from cumulative current account balances, and with the opposite sign. For creditor economies, GDP growing ahead of net foreign assets lowered net foreign asset ratios, whereas in debtor economies, this contributed to lower net foreign liability ratios. In euro area debtor economies, however,

reduced the value of their liabilities, namely, the assets located in the country), which could have helped stabilize their net foreign asset positions. Although these variables are statistically significant in the panel regression, year-by-year cross-sectional regressions yield no systematic relationship between them. Data on the currency composition of external balance sheets are limited and hence are not examined.

Figure 4.14. Adjustment in Net Foreign Assets versus Current Account Balance
(Percent of average GDP)

Current account balances were typically the main driver of changes in net foreign asset positions between 2006 and 2013 with R^2 of 0.73, as suggested by the closely clustered observations around the diagonal.



Source: IMF staff calculations.
Note: Europe deficit = Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, France, Greece, Hungary, Ireland, Italy, Kosovo, Latvia, Lithuania, FYR Macedonia, Moldova, Poland, Portugal, Romania, Serbia, Slovak Republic, Slovenia, Spain, Turkey, Ukraine, United Kingdom; Europe surplus = Austria, Belgium, Denmark, Finland, Netherlands, Sweden, Switzerland; Oil exporters = Algeria, Angola, Bahrain, Ecuador, Iran, Kazakhstan, Nigeria, Oman, Russia, Turkmenistan, United Arab Emirates, Uzbekistan, Yemen; Other Asia = Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines, Taiwan Province of China, Thailand, Vietnam. Europe deficit and surplus economies are sorted based on the signs of their average current account balances between 2004 and 2006.

the persistence of stock imbalances reflected the deep contraction in some of these economies. Growth and the strength of the external flow adjustment will likely be the main forces determining the future direction of stock imbalances; valuation effects might help, but they cannot be relied on.

Looking Ahead: How Will Global Imbalances Evolve?

Where are global imbalances headed? The preceding discussion suggests that flow imbalances have narrowed, and the closing of output gaps should not in itself reverse much of the narrowing. But output gaps are only part of what drives current account dynamics: policy choices and other economic forces might lead to a renewed widening or further shrinking of flow imbalances. Projections underlying the WEO point to the latter: if these projections are realized, flow imbalances will decline from a total (deficit plus surplus) of 3.3 percent of world GDP in 2013 to less than 3.0 percent of world GDP by 2019 (Figure 4.15).[26] Although that is not a dramatic further narrowing of flow imbalances, they are at least not projected to grow.

The current account imbalance of the United States, the largest on the deficit side, is projected to remain roughly constant at about 0.60 percent of world GDP, as the effect of domestic demand growth offsets the improving energy trade balance. The negative balance of deficit economies in the European Union (EU) ("Europe deficit" in the figure) is projected to shrink marginally, from 0.20 percent of world GDP in 2013 to 0.14 percent of world GDP by 2019. On the surplus side, through 2019, oil exporters are projected to halve their imbalances from 0.70 percent of world GDP to 0.31 percent of world GDP, whereas China and other parts of Asia ("Other Asia" in the figure) are projected to widen their surpluses from 0.50 percent to 0.70 percent of world GDP. Germany and the other EU surplus economies ("Europe surplus" in the figure) together are projected to shrink their surpluses from 0.70 percent to 0.54 percent of world GDP.

In contrast, stock imbalances are projected to grow from about 40 percent of world GDP in 2013 to about 45 percent of world GDP by 2019 (Figure 4.16).[27] The net foreign asset position of China, the second-largest creditor, is projected to rise from 2.3 percent of world GDP in 2013 to 3.4 percent of world GDP by 2019, whereas the net foreign liabilities of the United States, the largest debtor, are projected to rise from 7.6 percent of world GDP to 8.5 percent of world GDP during that period. Several other economies that have large debtor positions as a share of their own GDP and that make the top 10 list globally in 2006 or 2013 (or both) are projected to stabilize or improve their international investment positions.

[26]These projections assume that output gaps are approximately closed by the end of the projection horizon (2019).

[27]These projections assume that the real effective exchange rate will be constant, and that there are no valuation effects.

Table 4.3. Decomposition of Changes in Net Foreign Assets between 2006 and 2013[1]
(Percent of GDP)

	Largest Debtor Economies, 2013					Largest Creditor Economies, 2013			
Country	Current Account, 2007–13	Valuation, 2007–13	Growth Adjustment, 2007–13	Change in Net Foreign Assets[2]	Country	Current Account, 2007–13	Valuation, 2007–13	Growth Adjustment, 2007–13	Change in Net Foreign Assets[2]
United States	–21.2	–2.4	2.5	–19.7	Japan	18.9	1.0	2.5	24.7
Spain	–34.3	–6.7	2.4	–33.7	China[3]	20.9	–7.4	–10.4	0.8
Brazil[3]	–11.3	–9.6	16.1	–4.8	Germany	42.5	–25.1	–4.0	19.2
Italy	–11.8	1.3	1.0	–11.6	Saudi Arabia[3]	102.8	3.3	–67.7	5.9
Australia	–25.4	9.2	18.8	2.9	Switzerland	63.4	–21.8	–18.6	21.3
France	–10.0	–11.3	0.2	–18.7	Taiwan Province of China[4]	62.8	18.6	–21.4	57.8
India[3]	–14.4	–4.6	11.4	–7.4	Hong Kong SAR	44.1	39.4	–81.0	3.3
Mexico[3]	–7.6	0.8	12.3	–0.4	Norway[5]	80.0	34.9	–16.4	88.3
Turkey[3]	–33.7	–5.6	19.8	–17.4	Kuwait	209.6	18.0	–87.7	147.0
Poland	–27.0	–14.0	16.2	–24.2	Singapore	118.8	–57.7	–90.1	–28.2
Weighted Average[6]	–19.1	–3.4	5.5	–16.0	Weighted Average[6]	34.1	–6.8	–11.7	14.6

Sources: External Wealth of Nations Mark II data set (Lane and Milesi-Ferretti 2007); IMF, World Economic Outlook database; Lane and Milesi-Ferretti 2012; and IMF staff calculations.

[1]The *World Economic Outlook* reports balance of payments data using the methodology of the sixth edition of the *Balance of Payments and International Investment Position Manual* (BPM6). For those national authorities still reporting data in BPM5, a generic conversion is employed. Hence, data for those countries are subject to change upon full adoption of the BPM6.

[2]A country's decomposition (cumulative current account, valuation, and growth adjustment) may not add up exactly to the change in net foreign assets, as cumulative capital account flows and errors and omissions are not shown. See Appendix 4.1.

[3]IMF staff estimates for these economies may differ from the international investment position, where reported.

[4]National sources.

[5]IMF staff estimates for 2013.

[6]Calculated using 2013 market shares.

To explore the expected dynamics of stock imbalances further, panel 1 of Figure 4.17 plots current account balances in 2013 against net foreign asset positions in 2013. For creditor economies, the relationship is upward sloping: economies with higher net foreign asset positions in 2013 ran larger current account surpluses. The relationship for debtor economies is instead negative, indicating that the more indebted the economy, the smaller its current account deficit or the larger its current account surplus. Moreover, for many debtor economies, the projected average current account balance for the next five years exceeds the balance that would be required to stabilize the ratio of net foreign assets to GDP, so these economies' net liability positions will decline (Figure 4.17, panel 2).[28]

Determining the point at which deficits or debtor positions become substantially more vulnerable is difficult, because many factors are typically at play in a crisis. Statistical analysis of past crises (banking, currency, sovereign debt, and sudden stops) suggests thresholds of 6 percent of GDP for the current account deficit and 60 percent of GDP for the net foreign liability position as points at which vulnerability to crisis is heightened in advanced economies.[29] Corresponding thresholds based on a sample of emerging market economies are 3 percent of GDP for the current account deficit and 40 percent of GDP for the net foreign liability position.[30] It bears emphasizing that these thresholds are purely indicative, with large type I (false negative) and type II (false positive) errors. For instance, among advanced economies, the likelihood of experiencing some form of crisis when the current account deficit exceeds 6 percent of GDP is 13 percent—almost double the 7 percent crisis probability when the deficit is below that threshold. But another way of stating the same

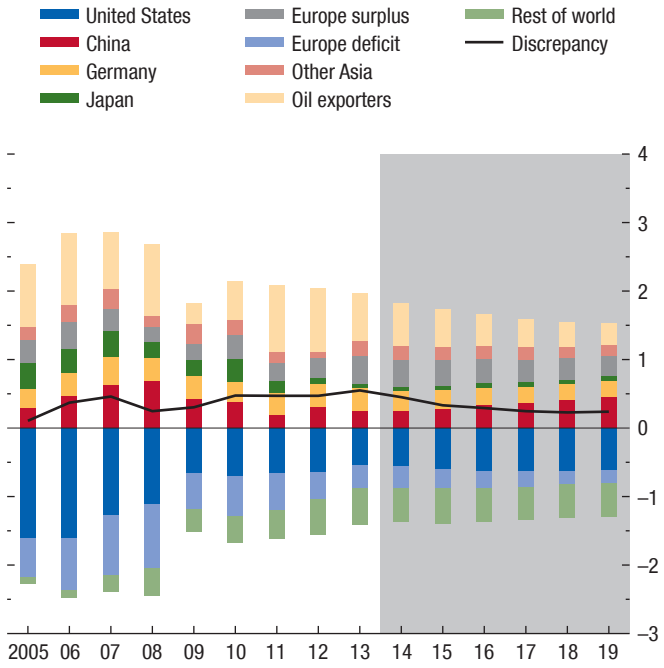
[28]The current account balance that stabilizes net foreign assets is calculated as $ca^* = g \times nfa$, where ca^* is the current account balance that stabilizes net foreign assets as a percentage of GDP, g is the (projected) growth rate of the U.S. dollar value of GDP, and nfa is the initial net foreign asset position as a percentage of GDP.

[29]The threshold is determined by calculating the value that minimizes the sum of the percentage of type I (false negative) and type II (false positive) errors for each type of crisis; the resulting threshold values are averaged, using as weights the goodness of fit (1 minus the sum of type I and type II errors); see Appendix 4.5.

[30]These estimated thresholds are similar to those obtained in the literature. Using 26 episodes of adjustment from a sample range of 1980–2003, Freund and Warnock (2005) calculate an average current account trough of 5.6 percent of GDP, after which a deficit economy has experienced reversals. Catão and Milesi-Ferretti (2013) study the extent to which net foreign liabilities help predict an external crisis. They find that net foreign liabilities are a significant predictor of a crisis (even if the current account balance is controlled for), particularly when they exceed 50 percent of GDP.

Figure 4.15. Global Current Account Imbalances
(Percent of world GDP)

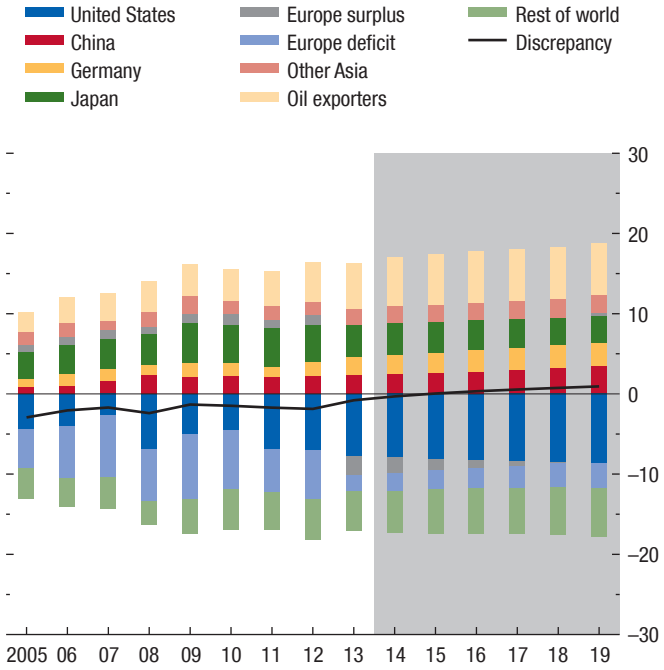
The WEO projects global current account balances to narrow slightly over the medium term. The WEO projections typically assume output gaps that close over the next five years and constant real effective exchange rates.



Source: IMF staff estimates.
Note: Oil exporters = Algeria, Angola, Azerbaijan, Bahrain, Bolivia, Brunei Darussalam, Chad, Republic of Congo, Ecuador, Equatorial Guinea, Gabon, Iran, Iraq, Kazakhstan, Kuwait, Libya, Nigeria, Norway, Oman, Qatar, Russia, Saudi Arabia, South Sudan, Timor-Leste, Trinidad and Tobago, Turkmenistan, United Arab Emirates, Venezuela, Yemen; Other Asia = Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, Thailand. European economies (excluding Germany and Norway) are sorted into surplus or deficit each year by the signs (positive or negative, respectively) of their current account balances.

Figure 4.16. Global Net Foreign Asset Imbalances
(Percent of world GDP)

Global stock imbalances are projected to widen further over the medium term, reflecting the continued (albeit narrowing) flow imbalances.



Source: IMF staff estimates.
Note: Oil exporters = Algeria, Angola, Azerbaijan, Bahrain, Bolivia, Brunei Darussalam, Chad, Republic of Congo, Ecuador, Equatorial Guinea, Gabon, Iran, Iraq, Kazakhstan, Kuwait, Libya, Nigeria, Norway, Oman, Qatar, Russia, Saudi Arabia, South Sudan, Timor-Leste, Trinidad and Tobago, Turkmenistan, United Arab Emirates, Venezuela, Yemen; Other Asia = Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, Thailand. European economies (excluding Germany and Norway) are sorted into surplus or deficit each year by the signs (positive or negative, respectively) of their current account balances.

result is that there is an 87 percent probability of *not* experiencing a crisis, even when the current account deficit exceeds the threshold.

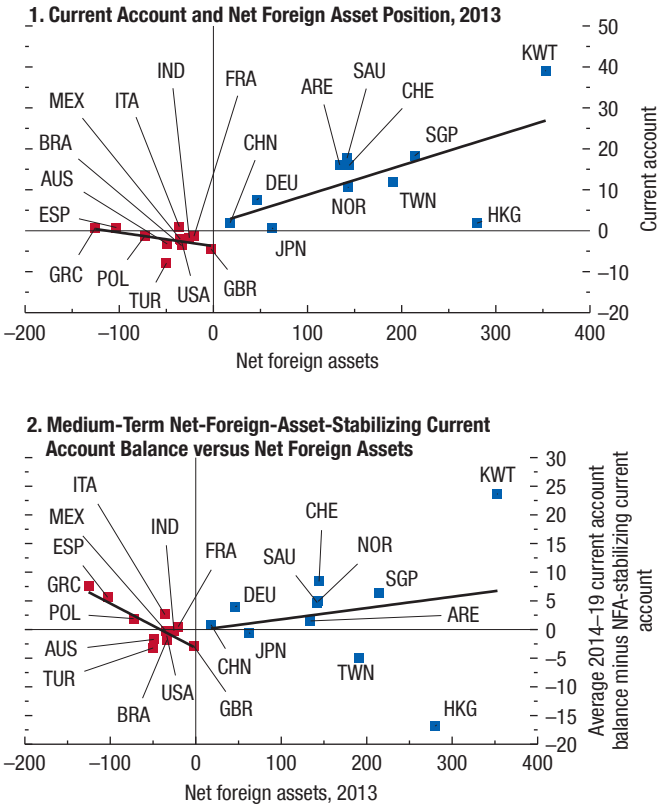
With these caveats in mind, Figure 4.18 plots the evolution of the current account and net foreign asset positions of the economies on the 2006, 2013, or (projected) 2019 top flow or stock imbalances lists, together with the indicative thresholds. Whereas several economies are below or close to either or both of these thresholds in 2006, a handful are in 2013 or are expected to be in 2019. In general, the most vulnerable economies move by 2019 toward the upper right quadrant in panel 3 of the figure, which indicates diminishing vulnerability to a sudden stop or external crisis.

Some of these economies, including a few major emerging market economies, nevertheless remain vulnerable to shifts in market sentiment or to sudden increases in world interest rates (which would, over time, worsen the dynamics of their net liability positions), for instance, as monetary policy in advanced economies is normalized.[31] Loss of financing would of course narrow the imbalances, but the adjustment would be too abrupt, entailing high economic and social costs. Beyond the systemically large debtors, moreover, several smaller European economies, as well

[31]See Chapter 1 of the October 2014 *Global Financial Stability Report*.

Figure 4.17. Determining Net Foreign Asset Sustainability
(Percent of GDP)

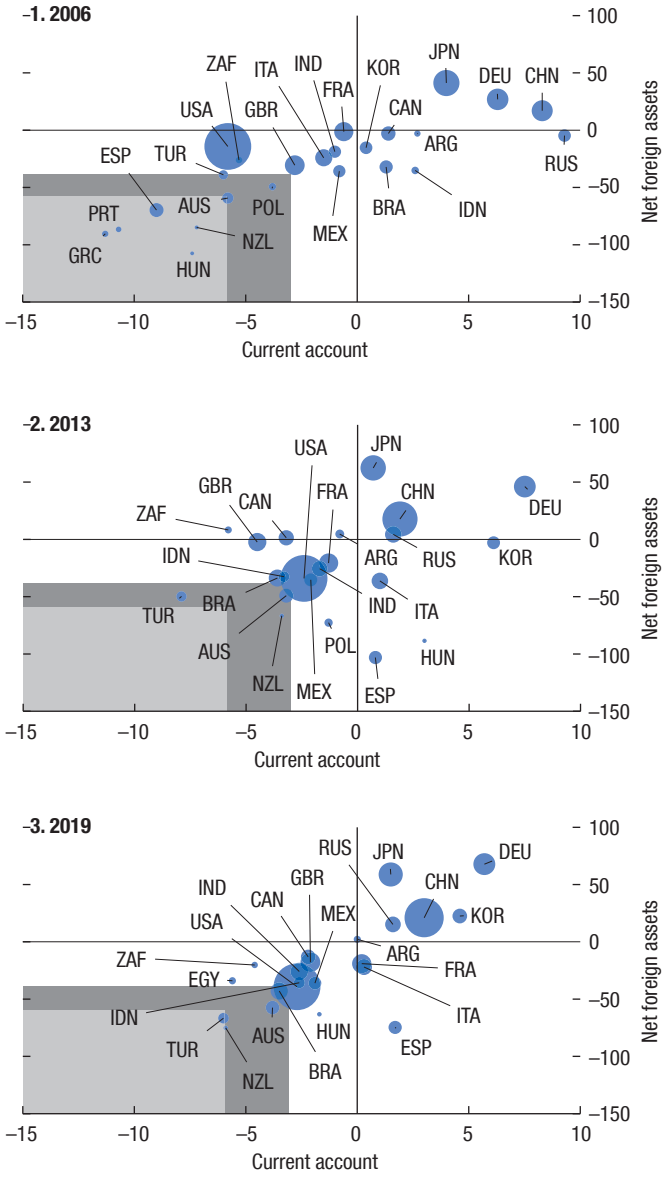
For creditor economies there is a positive association between current account balances and net foreign asset (NFA) positions both in the short and medium term. In contrast, for debtor economies the association between current account balances and NFAs is negative, indicating that the more indebted the economy, the smaller its current account deficit (or the larger its surplus).



Source: IMF staff calculations.
Note: Red data points are largest debtor economies, 2006 and 2013; blue data points are largest creditor economies, 2006 and 2013. Data labels in the figure use International Organization for Standardization country codes.

Figure 4.18. Largest Deficit/Debtor Economies: Current Account versus Net Foreign Assets, 2006, 2013, and 2019
(Percent of GDP)

In 2006, the current account balance and net foreign asset positions of several economies were close or exceeded the thresholds associated with past crises (banking, currency, sovereign debt, and sudden stops). In 2013 and 2019 only a handful of these economies exceeded or are projected to exceed the crisis thresholds. This indicates that the vulnerability of these economies to crisis has diminished.



Source: IMF staff calculations.
Note: Size of bubble is proportional to the share of world GDP. Data labels in the figure use International Organization for Standardization country codes. Shaded areas represent vulnerability thresholds for advanced economies (light gray) and emerging market and developing economies (dark gray and light gray together); see Appendix 4.5.

as some frontier markets among developing economies, remain vulnerable in the medium term, requiring substantial improvements in their net-exports-to-GDP ratios. While the deficits and debtor positions of these economies do not account for a significant proportion of global imbalances, experience during the global financial crisis has underscored that crises even in small economies may have wider repercussions due to upstream and downstream financial linkages.

Among the major debtors, the key exception to the trend of diminishing vulnerability is the unique case of the United States, whose net foreign liability position is projected to deteriorate from 4 percent of world GDP

in 2006 to 8.5 percent of world GDP in 2019. Indeed, one of the concerns with growing global imbalances in the mid-2000s was the (admittedly remote) possibility of the U.S. liability position suddenly reaching a tipping point, after which private and public holders of U.S. assets would lose confidence, and the U.S. dollar would lose its reserve currency status.

The U.S. net liability position in fact worsened to almost 8 percent of world GDP in 2013, but for a number of reasons, the likelihood that the dollar will lose its reserve currency status seems substantially lower than it did eight years ago. First, projected flow deficits of the United States are now considerably smaller than they were in 2006. Second, the U.S. dollar continues to be the leading transaction currency in foreign exchange markets and a key invoicing currency in international trade. It accounts for a dominant share of all outstanding debt securities issued anywhere in the world and especially of those securities sold outside the issuing country in a currency other than that of the issuer (Goldberg 2010). Third, dollar assets held in central bank reserves are not excessive in relation to central banks' "optimal" currency portfolios.[32] Fourth, at present, the dollar has relatively few competitors, since being a reserve currency requires that a substantial stock of assets be denominated in that currency. Fifth, and perhaps most telling, during the global financial crisis—whose epicenter was the United States—investors rushed for the safety of the U.S. dollar.[33]

Conclusion

Global current account imbalances have narrowed substantially since their precrisis peaks in 2006, and their configuration changed markedly along the way. As a proportion of world GDP, the United States' large current account deficit has been more than halved, and the euro area deficit economies have moved into surplus. The surpluses in China and Japan, the two main counterparts to the 2006 U.S. deficit, have decreased markedly as well. Moreover, a few advanced economy commodity exporters and some major emerging market economies that previously had surpluses have now switched to deficits, contributing to smaller imbalances, but also, in some cases, contributing to new vulnerabilities.

With the shrinkage in large deficits, the systemic risks from flow imbalances surely decreased. The IMF's most recent *Pilot External Sector Report* (IMF 2014) still finds that many larger economies' flow imbalances are excessive relative to levels consistent with fundamentals and appropriate policy settings, but the current account imbalances have nevertheless narrowed, in some cases considerably, from their 2006 levels. Likewise, the current account gaps related to new deficits remain relatively small. Although many large current account deficits remain in economies other than the largest ones, the related reversal risks are likely to be country specific, not systemic.

Much of the adjustment in flow imbalances has been driven by lowered demand in deficit economies after the global financial crisis and by growth differentials related to the faster recovery of emerging market economies and commodity exporters after the Great Recession. Expenditure switching (from imports to domestic goods and services or vice versa) has, in general, played less of a role throughout the recent adjustment period, especially in economies that have faced significant slack and operate under fixed-exchange-rate regimes. But such expenditure switching has risen among the largest deficit and surplus economies, as it did in earlier episodes of narrowing global imbalances.

The significant role of weaker demand and growth differentials in the narrowing of global flow imbalances has been associated in many economies with high costs in the form of increased internal imbalances. However, the weaker demand has also allowed substantial current account adjustment without the disruptive exchange rate corrections—most notably of the U.S. dollar—that some feared were in the offing before the global financial crisis. In the process, some of the asset price bubbles and credit booms that underlay the large imbalances in many advanced economies up to about 2006 have also been corrected, although others may have since emerged, including as a result of the response to the crisis.

[32]Optimal currency composition of reserve portfolios is calculated under the assumption that the objective is to preserve the "real" value of reserves. A natural choice of deflator in this context is the import deflator, because the ultimate purpose of holding reserves is to enable net imports. Such an exercise yields a global optimal currency portfolio for reserves in which the dollar accounts for roughly 60 percent of the value (regardless of whether individual economies' optimal portfolios are weighted by imports or by reserve holdings); that level approximately matches the reported share in the IMF's Currency Composition of Official Foreign Exchange Reserves database for 2013; see Ghosh, Ostry, and Tsangarides 2011 for details of this calculation.

[33]See, for instance, Ghosh, Ostry, and Tsangarides 2011, Prasad 2014, and Schenk 2013 on historical precedents of global switches in reserve currencies.

The widening of internal imbalances while external imbalances narrowed has led, however, to concerns that, without further expenditure switching, external imbalances could widen again once output gaps close. Indeed, as output gaps in several advanced economies widened in 2013, global imbalances narrowed further. In advanced economies, much will depend on whether the lowering of their output since the global financial crisis has been mostly structural or mostly cyclical. If structural—the case incorporated in WEO baseline forecasts—much of the narrowing in global flow imbalances will be lasting.

But in some advanced economies with current account deficits, notably those in the euro area, output gaps are most likely large, and more expenditure switching would help these economies boost growth while maintaining narrower external imbalances. Against this backdrop, the uneven contribution of surplus economies to the narrowing of global imbalances remains a concern. The imbalances remain large among European surplus economies and oil exporters.

The nature and intensity of the policy measures needed to address remaining external imbalances and to contain emerging imbalances vary across economies and country groups. For instance, deficit economies need to take actions to advance fiscal consolidation and introduce structural reforms to facilitate external adjustment (including those to raise saving, make labor markets more flexible, and remove supply bottlenecks). In some emerging market economies with increasing deficits, measures to rein in private demand may be needed, including macroprudential measures to restrain credit booms and asset price bubbles. Surplus economies, in contrast, need to take steps to rebalance growth—including, in some cases, by raising public sector investment (see Chapter 3). In some other cases, adoption of more market-based exchange rates, reduction of capital account restrictions, strengthening of social safety nets, and implementation of financial sector reforms might also be required. As historical precedents and theory suggest, greater coordination of economic policies between, and among, surplus and deficit economies will make it easier to achieve these goals individually and collectively (see Ostry and Ghosh 2013).

Although concerns about global flow imbalances may have lessened since 2006, problems remain with respect to net external positions or stock imbalances. As a percentage of GDP, these metrics have generally widened further since most economies continue to be either net lenders or net borrowers, with current account imbalances typically only narrowing rather than reversing. Output declines or low output growth, together with low inflation, are another reason why net external liabilities have remained high as a share of GDP. Some large debtor economies thus remain vulnerable to changes in market sentiment and hence represent continued possible systemic risks. However, the liability position of the United States, the largest debtor globally, in relation to its own GDP remains relatively low, and the behavior of investors during the global financial crisis is a testament to their continued confidence in dollar assets.

Containing stock imbalances in debtor economies ultimately requires improvements in current account balances and stronger growth; increased resilience will also depend on the structure of assets and liabilities. Policy measures to achieve both stronger and more balanced growth in the major economies would help in this respect, including in large surplus economies with available policy space. Such measures would also help further reduce global imbalances.

Appendix 4.1. Data Definitions, Sources, and Descriptions

The primary sources for this chapter are the IMF's *Balance of Payments Statistics* (BOPS), *Direction of Trade Statistics* (DOTS), *International Financial Statistics* (IFS), World Economic Outlook (WEO) database, and Global Data Source (GDS); the World Bank's *World Development Indicators*; and the updated and extended version of the External Wealth of Nations (EWN) data set, constructed by Lane and Milesi-Ferretti (2007). Data for all variables (shown in Table 4.4 along with their data sources) are collected on an annual basis from 1970 to 2013, where available.

The main variables, including current account balance, net foreign asset position, trade balance, exports, imports, savings, and investment, are reported as percentages of nominal GDP. Weights used to construct country group aggregates are based on nominal GDP (market-value-based) weights. In addition, real variables, including domestic demand, exports, imports, and GDP, are constructed as percentage changes (log differences).

Precrisis trends are obtained from data in previous WEO reports, such as the September 2006 WEO database, and are constructed using a linear trend for a

Table 4.4. Data Sources

Variable	Sources[1]
Capital Account	IMF, Balance of Payments and International Investment Position Statistics Database.
Consumer Price Index (CPI) Inflation	IMF, World Economic Outlook Database.
Current Account	IMF, Balance of Payments and International Investment Position Statistics Database.
Financial Account	IMF, Balance of Payments and International Investment Position Statistics Database.
Financial Derivative Assets	External Wealth of Nations Database Mark II data set (Lane and Milesi-Ferretti 2007); Lane and Milesi-Ferretti 2012.
Financial Derivative Liabilities	External Wealth of Nations Database Mark II data set (Lane and Milesi-Ferretti 2007); Lane and Milesi-Ferretti 2012.
Foreign Direct Investment Assets	External Wealth of Nations Database Mark II data set (Lane and Milesi-Ferretti 2007); Lane and Milesi-Ferretti 2012.
Foreign Direct Investment Liabilities	External Wealth of Nations Database Mark II data set (Lane and Milesi-Ferretti 2007); Lane and Milesi-Ferretti 2012.
Net Foreign Assets	External Wealth of Nations Database Mark II data set (Lane and Milesi-Ferretti 2007); Lane and Milesi-Ferretti 2012.
Nominal Exchange Rate versus U.S. Dollar, End-of-Period	International Financial Statistics Database.
Nominal Exchange Rate versus U.S. Dollar, Period Average	International Financial Statistics Database.
Nominal Exports in U.S. Dollars	IMF, Balance of Payments and International Investment Position Statistics Database; and IMF, World Economic Outlook Database.
Nominal GDP (Local Currency and U.S. Dollars)	IMF, World Economic Outlook Database.
Nominal Imports in U.S. Dollars	IMF, World Economic Outlook Database.
Other Debt Assets	External Wealth of Nations Database Mark II data set (Lane and Milesi-Ferretti 2007); Lane and Milesi-Ferretti 2012.
Other Debt Liabilities	External Wealth of Nations Database Mark II data set (Lane and Milesi-Ferretti 2007); Lane and Milesi-Ferretti 2012.
Portfolio Equity Assets	External Wealth of Nations Database Mark II data set (Lane and Milesi-Ferretti 2007); Lane and Milesi-Ferretti 2012.
Portfolio Equity Liabilities	External Wealth of Nations Database Mark II data set (Lane and Milesi-Ferretti 2007); Lane and Milesi-Ferretti 2012.
Real Domestic Demand Growth	IMF, World Economic Outlook Database and IMF Staff Calculations.
Real Domestic Demand Growth, Trading Partners	IMF, World Economic Outlook Database; IMF, Information Notice System Weights; and IMF Staff Calculations.
Real Effective Exchange Rate (CPI based)	IMF, International Financial Statistics; and IMF Staff Calculations.
Real Exports	IMF, World Economic Outlook Database.
Real GDP	IMF, World Economic Outlook Database.
Real GDP Growth	IMF, World Economic Outlook Database and IMF Staff Calculations.
Real Imports	IMF, World Economic Outlook Database.
Reserve Assets Excluding Gold	External Wealth of Nations Database Mark II data set (Lane and Milesi-Ferretti 2007); Lane and Milesi-Ferretti 2012.
Terms of Trade	IMF, World Economic Outlook Database.

Source: IMF staff compilation.

[1]Not all countries have converted to the sixth edition of the *Balance of Payments and International Investment Position Manual* (BPM6). Data are subject to change once fully converted. Please refer to Table G of the Statistical Appendix for the list of countries that still use the BPM5.

seven-year period that ends three years earlier, such as, for example, the 1996–2003 period for 2006.

The economies included in Tables 4.1 and 4.2 are identified using current account balances and net foreign asset data from the BOPS database and EWN data set. Given the focus of the chapter, the rankings in these tables allow the identification of economies with imbalances with potentially systemic implications.

- *Largest current account deficits and surpluses.* These economies are identified by ranking the WEO database's full list of economies by the dollar size of their current account balances. The top 10 surplus and deficit economies are then selected.
- *Largest net foreign asset (creditors) and liabilities (debtors) positions.* Economies are selected from available data by the dollar size of their positive (creditors) or negative (debtors) net foreign asset positions.

Saving and Investment

The current account balance (*CA*) is equal to national savings (*S*) minus investment (*I*). As the data for savings are the least reliable, values for that variable are derived from the other two using the following identity:

$$S = CA + I, \tag{4.1}$$

in which each variable is expressed as a percentage of GDP. The current account data are obtained from BOPS, and investment is obtained from WEO national accounts data.

Decomposing the Change in Net Foreign Assets

The change in a country's net foreign asset position is defined as follows:

$$NFA_t - NFA_{t-1} \equiv CA_t + KA_t + EO_t + X_t, \tag{4.2}$$

in which *CA* is the current account—which is the sum of net exports of goods and services, current transfers, and investment income; *KA* is capital transfers; *EO* is errors and omissions; and *X* is net capital valuation gains (losses if negative) from shifts in exchange rates and asset prices.

Thus, the relationship between external flows and stocks can be rewritten as follows (Lane and Milesi-Ferretti 2014):

$$NFA_t \equiv NFA_{t-1} - FA_t + X_t, \tag{4.3}$$

in which FA_t is the financial account balance, that is, $FA_t = -(CA_t + KA_t + EO_t)$; and X_t is the valuation effect.

Hence, to calculate the cumulative valuation effects during 2006–13 as presented in Table 4.3, one can use the following equation:

$$\sum_{t=2007}^{2013} X_t = NFA_{2013} - NFA_{2006} + \sum_{t=2007}^{2013} FA_t. \tag{4.4}$$

These variables are in levels and calculated in local currency using period-average exchange rates for flows and end-of-period exchange rates for stocks. Recursive iteration and substitution in equation (4.2) shows two of the main components of the net foreign asset position—the cumulative current account and the cumulative valuation effect:

$$NFA_t = \sum_{s=0}^{q-1} CA_{t-s} + \sum_{s=0}^{q-1} (KA_{t-s} + EO_{t-s}) + \sum_{s=0}^{q-1} X_{t-s} + NFA_{t-q}. \tag{4.5}$$

However, a better proxy for a country's stock imbalance is the ratio of its net foreign asset position to GDP, which controls for the size of the economy. In this case, equation (4.5) can be written as follows:

$$nfa_t - nfa_{t-q} = \frac{(\sum_{s=0}^{q-1} CA_{t-s})}{Y_t} + \frac{(\sum_{s=0}^{q-1} (KA_{t-s} + EO_{t-s}))}{Y_t} + \frac{(\sum_{s=0}^{q-1} X_{t-s})}{Y_t} - \frac{g_{y_{t,t-q}}}{1 + g_{y_{t,t-q}}} nfa_{t-q}, \tag{4.6}$$

in which lowercase letters denote variables as a ratio to GDP. The final term on the equation's right-hand side captures the adjustment due to nominal GDP growth, in which $g_{y_{i,t=q}}$ is the nominal GDP growth between $t - q$ and t, and $q \geq 1$.

Appendix 4.2. Panel Estimations

A country's current account balance is determined by a number of factors, both domestic and foreign, summarized in the following relationship:

$$CA = f(DD, DD^*, \varepsilon, \tau). \tag{4.7}$$

The current account (as a share of GDP), *CA*, is a function of real domestic demand, *DD*; real domestic demand in trading partner economies, *DD**; the real effective exchange rate, ε; and the terms of trade, τ. Taking the total derivative yields the relationship to be estimated:

$$dCA = \frac{\partial CA}{\partial DD} dDD + \frac{\partial CA}{\partial DD^*} dDD^* + \frac{\partial CA}{\partial \varepsilon} d\varepsilon + \frac{\partial CA}{\partial \tau} d\tau. \tag{4.8}$$

Economic theory gives us an idea of the sign of these effects in advance:[34]

$$\frac{\partial CA}{\partial DD} < 0; \frac{\partial CA}{\partial DD^*} > 0; \frac{\partial CA}{\partial \varepsilon} < 0; \frac{\partial CA}{\partial \tau} > 0. \tag{4.9}$$

Given the chapter's global focus, panel data techniques are applied to test equation (4.8) and establish the relative importance of expenditure changing and expenditure switching during current account adjustment periods. Because current account balances are the outcome of intertemporal decisions taken jointly

[34]The negative relationship between the change in the real effective exchange rate and the change in the current account as a percentage of GDP assumes that the Marshall-Lerner condition is satisfied, that is, that the sum of the elasticities of exports and imports with respect to the real exchange rate exceeds unity.

Table 4.5. Sample Economies

Europe		Asia	
Austria	Lithuania	Australia	Malaysia
Belgium	Netherlands	China	New Zealand
Bulgaria	Norway*	Hong Kong SAR	Pakistan
Croatia	Poland	India	Philippines
Czech Republic	Portugal	Indonesia	Singapore
Denmark	Romania	Israel	Sri Lanka
Estonia	Russia*	Japan	Taiwan Province of China
Finland	Serbia	Korea	Thailand
France	Slovak Republic		
Germany	Slovenia	Americas	
Greece	Spain	Argentina	El Salvador
Hungary	Sweden	Brazil	Guatemala
Iceland	Switzerland	Canada	Mexico
Ireland	Turkey	Chile	Peru
Italy	Ukraine	Colombia	United States
Latvia	United Kingdom	Costa Rica	Uruguay
		Dominican Republic	
Africa			
Morocco	Tunisia		
South Africa			

Source: IMF staff compilation.
* Oil exporters.

by multiple agents globally, pooling information in a panel regression allows a richer set of dynamics to be captured over time and across economies.

This relationship is specified econometrically as follows:

$$\Delta CA_{i,t} = \beta_0 + \beta_1 \Delta DD_{i,t} + \beta_2 \Delta DD^*_{i,t} + \beta_3 \Delta REER_{i,t} + \beta_4 \Delta ToT_{i,t} + u_i + \varepsilon_{i,t}, \quad (4.10)$$

in which for country i, $\Delta CA_{i,t}$ is the year-over-year change in the current account (as a share of GDP); $\Delta DD_{i,t}$ is the annual growth rate of real domestic demand; $\Delta DD^*_{i,t}$ is the weighted average annual real domestic demand growth across country i's trading partners; $\Delta REER_{i,t}$ is the annual percentage change in the real effective exchange rate; $\Delta ToT_{i,t}$ is the annual growth rate in the terms of trade; u_i captures country-specific fixed effects; and $\varepsilon_{i,t}$ are the idiosyncratic errors.

Fixed-effects panel estimation with robust standard errors is used for the regression for a sample of 64 economies (Table 4.5) using annual data for the period 1970–2013. The panel is unbalanced owing to gaps in the data.

The results for 10 regression estimations are reported in Table 4.6. The first column of the table reports the coefficients from the full regression of the change in current account balances as a share of GDP on the four explanatory variables (regressors) and their one-period lags as listed in equation (4.10). The results indicate that over the full sample period, a 1 percentage point increase in the growth rate of domestic demand for one year is associated with a deterioration in the current account balance of slightly more than 0.3 percentage point of GDP over two years. A 1 percentage point increase in trading partner demand growth for one year leads instead to an improvement in the current account by a little more than 0.06 percentage point of GDP over two years. Finally, a 5 percent depreciation in the real effective exchange rate is associated with an improvement in the current account balance of 0.3 percentage point over two years.

The next five columns of the table explore how the explanatory power of the regression (the overall R^2) alters once certain key explanatory variables are excluded. As noted in the chapter text, the omission of the change in the real effective exchange rate (column 4) has little impact on overall explanatory power, but removing growth in aggregate demand (both domestic demand and that of trading partners) leads to a sharp reduction in the model's goodness of fit (from slightly more than 0.4 to 0.1).

Columns (7) through (10) present results from partitioning the data set into two subsets. The first subset looks at the effect of a change in the explanatory variables in the years of adjustment in global imbalances (using binary indicators for the years 1975–

Table 4.6. Panel Regression Results, 1970–2013

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
							Partitioned Samples			
	Full Sample						Adjustment Years[1]	Nonadjustment Years	Peg[2]	Float[2]
Real Domestic Demand (YoY change, percent)	–0.37***		–0.38***		–0.36***		–0.42***	–0.33***	–0.46***	–0.34***
	(–12.6)		(–13.6)		(–12.8)		(–11.0)	(–10.7)	(–5.80)	(–11.4)
Real Domestic Demand, Trading Partners (YoY change, percent)	0.13**		0.15***	–0.32***	0.12**		0.12*	0.16***	0.16	0.15**
	(2.49)		(2.83)	(–4.18)	(2.29)		(1.83)	(2.70)	(1.48)	(2.38)
Real Effective Exchange Rate (CPI based, YoY change, percent)	–0.03***	–0.08***		–0.07***	–0.03**		0.01	–0.05***	–0.04*	–0.04***
	(–2.96)	(–7.66)		(–7.01)	(–2.38)		(0.28)	(–4.16)	(–2.04)	(–3.11)
Terms of Trade (YoY change, percent)	0.16***	0.11***	0.15***	0.12***	0.15***		0.16***	0.17***	0.20***	0.15***
	(7.62)	(5.14)	(7.40)	(5.57)	(7.45)		(6.24)	(6.93)	(6.52)	(6.12)
Real Domestic Demand {*t*–1} (YoY change, percent)	0.05***		0.04**			–0.05**	0.08***	0.04*	0.06*	0.05**
	(2.93)		(2.42)			(–2.64)	(2.89)	(1.80)	(1.74)	(2.67)
Real Domestic Demand, Trading Partners {*t*–1} (YoY change, percent)	–0.07		–0.06	–0.09**		–0.10*	–0.17***	0.02	–0.07	–0.07
	(–1.55)		(–1.44)	(–2.11)		(–1.96)	(–2.96)	(0.28)	(–1.49)	(–1.31)
Real Effective Exchange Rate {*t*–1}, (CPI based, YoY change, percent)	–0.03***	–0.02**		–0.03***		–0.02*	–0.03**	–0.02***	–0.02	–0.03***
	(–3.17)	(–2.53)		(–2.95)		(–1.79)	(–2.35)	(–3.01)	(–1.01)	(–3.15)
Terms of Trade {*t*–1}, (YoY change, percent)	0.00	–0.03***	–0.01	–0.03**		–0.03***	0.00	0.01	0.03	–0.01
	(0.28)	(–3.66)	(–1.02)	(–2.52)		(–3.42)	(–0.44)	(0.82)	(1.42)	(–0.92)
R^2 (within)	0.44	0.10	0.42	0.15	0.42	0.03	0.45	0.44	0.54	0.41
R^2 (overall)	0.41	0.10	0.39	0.14	0.38	0.03	0.43	0.42	0.51	0.38
Standard deviation of residuals within groups	0.57	0.28	0.59	0.37	0.62	0.28	0.80	0.66	0.59	0.62
Standard deviation of residuals	2.14	2.70	2.17	2.63	2.18	2.80	2.37	2.03	1.84	2.32
Intraclass correlation	0.07	0.01	0.07	0.02	0.07	0.01	0.10	0.10	0.09	0.07
Number of observations	1,929	1,971	1,936	1,959	1,992	1,929	763	1,229	666	1,326
Number of countries	64	64	64	64	64	64	64	64	22	42

Source: IMF staff estimates.

Note: *t*-statistics in parentheses. CPI = consumer price index; YoY = year over year.

[1]Periods of adjustment in global current account imbalances: 1975–79, 1987–91, and 2007–13.

[2]Economies partitioned into those with pegged and floating exchange rate regimes as specified in Ghosh, Ostry, and Tsangarides (2011).

*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

Table 4.7. Panel Regression Results, 2007–13

	(1)	(2)	(3)	(4)	(5)
	Full Sample	Sample from 2007 to 2013			
Real Domestic Demand (YoY change, percent)	–0.37***	–0.45***		–0.45***	
	(–12.6)	(–6.93)		(–6.91)	
Real Domestic Demand, Trading Partners (YoY change, percent)	0.13**	0.04		0.05	–0.77***
	(2.49)	(0.34)		(0.40)	(–5.19)
Real Effective Exchange Rate (CPI based) (YoY change, percent)	–0.03***	0.02	–0.05		0.00
	(–2.96)	(0.83)	(–1.38)		(0.10)
Terms of trade (YoY change, percent)	0.16***	0.10**	0.02	0.11**	0.04
	(7.62)	(2.30)	(0.35)	(2.51)	(0.85)
Real Domestic Demand {*t*–1} (YoY change, percent)	0.05***	0.06		0.06	
	(2.93)	(1.25)		(1.27)	
Real Domestic Demand, Trading Partners {*t*–1} (YoY change, percent)	–0.07	–0.17**		–0.17**	–0.22***
	(–1.55)	(–2.25)		(–2.28)	(–3.43)
Real Effective Exchange Rate {*t*–1} (CPI based, YoY change, percent)	–0.03***	0.00	0.04		0.02
	(–3.17)	(0.15)	(0.91)		(0.64)
Terms of Trade {*t*–1} (YoY change, percent)	0.00	0.00	–0.06*	0.00	–0.02
	(0.28)	(–0.26)	(–1.84)	(–0.24)	(–0.98)
R^2 (within)	0.44	0.54	0.03	0.54	0.30
R^2 (overall)	0.41	0.51	0.02	0.51	0.27
Standard deviation of residuals within groups	0.57	1.21	1.58	1.23	1.44
Standard deviation of residuals	2.14	2.32	3.34	2.32	2.85
Intraclass correlation	0.07	0.21	0.18	0.22	0.20
Number of observations	1,929	320	320	320	320
Number of countries	64	64	64	64	64

Source: IMF staff estimates.
Note: *t*-statistics in parentheses. CPI = consumer price index; YoY = year over year.
*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

79, 1987–91, and 2007–13; column 7) compared with remaining years in the sample (column 8). In this case, the negative coefficient on the growth in real domestic demand is larger in the years of adjustment relative to more "normal" periods. In addition, expenditure switching does not appear to have been strongly associated with changes in the current account during the periods of adjustment, unlike in other years. However, it is possible that the strength of expenditure switching is weakened by the more extreme fallout from the global financial crisis and subsequent Great Recession. Columns (9) and (10) show very similar regression results for economies with either pegged or floating exchange rates. In particular, the impact of changes in the real effective exchange rate on the current account is virtually identical, but more precisely estimated in the case of economies with floating exchange rates.

When the relationship is tested for the 1986–91 adjustment period (see Box 4.1), the change in the real effective exchange rate has a statistically significant negative effect on the current account balance; that is, a real depreciation improves a country's external balance. A simple robustness test, performed by substituting lagged terms for each explanatory variable, shows that the significance and sign of the effects of the different factors on the change in the current account do not alter substantially for the real effective exchange rate and domestic demand (column 6).

The panel regression is also performed for the recent adjustment period in global imbalances, 2007–13 (Table 4.7). As noted in the chapter text, the impact of domestic demand growth is even stronger between 2007 and 2013 (column 2) than in the full sample (column 1), whereas neither growth in domestic demand in trading partners nor changes in the real effective exchange rate has a statistically significant impact. One factor that may explain the lack of significance of the impact of real effective exchange rate changes is the fact that increases in indirect taxes—which happened in a number of deficit economies—imply an appreciation in the consumer-price-index-based real effective exchange rate used in the regression but no change in underlying competitiveness.

The coefficients from the full regression (column 1 of Table 4.6) are used to calculate a counterfactual

path for the current account balance for the case in which the expenditure-switching channel is turned off. As noted in the chapter text, this exercise suggests that under those circumstances, imbalances would have widened by an additional 0.4 percent of world GDP in 2013.

Appendix 4.3. Distortions, Policies, and Imbalances

The text compares "current account gaps" in 2006 and 2013 as a measure of the degree to which lower distortions and improved policies have contributed to the narrowing of flow imbalances. This appendix provides details of that analysis.

A country's current account (as a percentage of GDP) may be modeled as depending upon a vector of policies, **P**; a vector of distortions, **D**; a vector of observed fundamentals, **F**; and a vector of unobserved fundamentals, **U**:

$$CA = \alpha + \mathbf{P}'\beta + \mathbf{D}'\gamma + \mathbf{F}'\delta + \mathbf{U}'\theta. \quad (4.11)$$

The appropriate current account balance (that is, taking account of multilateral consistency, as well as sustainable and appropriate policies, $\mathbf{P}^*$)—the current account "norm"—is given by

$$CA^* = \alpha + \mathbf{P}^{*\prime}\beta + \mathbf{F}'\delta + \mathbf{U}'\theta. \quad (4.12)$$

Ideally, the actual current account (equation 4.11) would be compared with its norm (equation 4.12),

$$CA - CA^* = \rho = \alpha + (\mathbf{P} - \mathbf{P}^*)'\beta + \mathbf{D}'\gamma, \quad (4.13)$$

with the difference between them providing a measure of the policy or other distortions that underlie observed current account positions. Moreover, a comparison of ρ over time (for example, ρ_{2013} versus ρ_{2006}) would provide an indication of the extent to which these distortions had diminished or grown.

The norm is not directly observable, however, and instead a regression model of the current account must be employed as a proxy:[35]

$$\widehat{CA} = \alpha + \mathbf{P}'\beta + \mathbf{F}'\delta. \quad (4.14)$$

The regression residual is

$$CA - \widehat{CA} = \varepsilon = \mathbf{D}'\gamma + \mathbf{U}'\theta. \quad (4.15)$$

As a proxy for δ (the true deviation of the current account from its norm), the regression residual ε suffers from two shortcomings: first, in addition to genuine distortions, it includes unobserved fundamentals (that is, variables that are omitted from the regression); and second, since the regression controls for actual policies, the residual does not capture the effect on the current account of any divergence of actual policies, **P**, from their appropriate or desirable values, $\mathbf{P}^*$.

To the extent that the unobserved fundamentals are relatively constant, the first of these problems is mitigated by comparing the residual over time. Therefore, smaller residuals in 2013 than in 2006 ($|\varepsilon_{2013}| < |\varepsilon_{2006}|$) can be taken as an indication of fewer distortions. To address the second problem, if an estimate of the desirable policy settings is available, a residual inclusive of the policy distortion may be defined:

$$\vartheta = \varepsilon + (\mathbf{P} - \mathbf{P}^*)'\beta = \mathbf{D}'\gamma + \mathbf{U}'\theta + (\mathbf{P} - \mathbf{P}^*)'\beta, \quad (4.16)$$

where again, comparing ϑ over time likely reduces the impact of the omitted variables. The difficulty in implementing this strategy is that, although estimates of $\mathbf{P}^*$ are available for 2013 as part of the EBA and *External Sector Report* (ESR) exercises, corresponding estimates for 2006 are not available. Since the desirable policies are likely to be fairly invariant over time (for instance, the fiscal balance is defined in cyclically adjusted terms), however, it is possible to approximate the 2006 value using its 2013 value and calculate $\vartheta_{2006} = \varepsilon_{2006} + (\mathbf{P}_{2006} - \mathbf{P}^*_{2013})'\beta$.

Figure 4.11 (panel 1) compares $|\varepsilon_{2013}|$ with $|\varepsilon_{2006}|$ as an indication of how nonpolicy distortions underlying observed current account balances have changed over time, while Figure 4.11 (panel 2) compares $|\mathbf{P}_{2013} - \mathbf{P}^*_{2013}|$ to $|\mathbf{P}_{2006} - \mathbf{P}^*_{2006}|$ as an indication of how all distortions—policy and other—have evolved. It bears emphasizing that neither the regression residuals, ε, nor the policy-gap-inclusive residuals, ϑ, correspond precisely to the ESR gaps. The latter incorporate IMF staff judgment concerning appropriate external balances, taking account of additional information that cannot be readily captured in standard regression analysis. Although in many cases the ESR gaps (which are available only for 2013) are similar to the policy-gap-inclusive residuals, ϑ, for 2013, there are some instances in which there are marked differences due to country-specific factors.[36]

[35]The regression that underlies the IMF's External Balance Assessment is used for this purpose (see http://www.imf.org/external/np/res/eba/pdf/080913.pdf).

[36]Notably Japan (among the economies with large imbalances considered here); for this reason, the residual for Japan is not shown in Figure 4.11.

Table 4.8. Estimated Threshold Values and Associated Classification Errors

Variable	Crisis	Sample	Threshold (percent)	Crises Missed (type I error; percent)	Noncrises Misclassified (type II error; percent)
NFA	Sudden Stops	AE	–20.0	45.7	37.1
NFA	Debt	AE	–81.2	0.0	3.2
NFA	Currency	AE	–39.6	42.9	18.7
NFA	Bank	AE	–1.4	20.0	65.6
NFA	Any	AE	–21.0	52.4	34.8
NFA	Weighted Average	AE	–55.7		
CA	Sudden Stops	AE	–4.5	74.3	15.8
CA	Debt	AE	–9.9	0.0	3.0
CA	Currency	AE	–2.4	0.0	30.2
CA	Bank	AE	–2.4	48.0	31.0
CA	Any	AE	–3.3	60.3	23.1
CA	Weighted Average	AE	–6.0		
NFA	Sudden Stops	EMDE	–36.2	43.8	48.2
NFA	Debt	EMDE	–44.0	50.0	36.9
NFA	Currency	EMDE	–16.9	14.5	78.3
NFA	Bank	EMDE	–77.4	84.3	11.4
NFA	Any	EMDE	–16.7	18.2	78.6
NFA	Weighted Average	EMDE	–38.4		
CA	Sudden Stops	EMDE	–6.6	58.3	20.7
CA	Debt	EMDE	–2.0	13.0	58.3
CA	Currency	EMDE	–2.0	22.8	58.3
CA	Bank	EMDE	0.2	7.8	78.2
CA	Any	EMDE	–2.0	26.6	58.2
CA	Weighted Average	EMDE	–2.7		

Source: IMF staff estimates.
Note: AE = advanced economies; CA = current account; EMDE = emerging and developing economies; NFA = net foreign assets.

Appendix 4.4. Counterfactual Output Gap Analysis

One of the key questions tackled in the chapter is whether the unwinding of global current account imbalances will prove durable. This question is examined by looking at cyclically adjusted current account balances. To the extent that the relatively narrow imbalances now can be attributed to the difference in cyclical positions or to global excess capacity, a bounce back can be expected in the medium term as output gaps close.

However, there is no universally accepted methodology for assessing how cyclical conditions affect current account balances. To get an idea of magnitudes, a simple, parsimonious approach based on the IMF's EBA methodology is employed.[37] The cyclical component of the ratio of the current account to GDP for a given country is computed as the difference between its output gap and the world output gap multiplied by a factor (–0.4) recovered from the EBA current account regression.[38] The world output gap is computed using the purchasing-power-parity-weighted average of output gaps for all economies recorded in the IMF's WEO database.

Cyclically adjusted current account balances are calculated for the Group of Twenty economies using three country-specific output gap measures: (1) the output gap reported in the WEO, (2) the difference between the 2013 level of GDP implied by the 2006 precrisis trend (calculated using the average growth rate for 1998–2005), and (3) a hybrid of (1) for the United States and China and (2) for all other economies.

The cyclical components are then aggregated separately for surplus and deficit Group of Twenty economies and subtracted from the sum of their raw balances to arrive at cyclically adjusted current account balances for the two country groups.[39] These are compared with the "unadjusted" current account surpluses and deficits (actual current account balances), calculated for the full sample of economies in the WEO.

Measures calculated using (1) deliver a narrowing of 2.6 percent of world GDP (dashed lines in panel 1 of Figure 4.9), 1.5 percent using (2) (solid lines in panel

[37]See, for instance, http://www.imf.org/external/np/res/eba/pdf/080913.pdf.

[38]The EBA regression is estimated on a sample of 49 mostly advanced and emerging market economies (covering 90 percent of global GDP) for the period 1986–2000.

[39]Economies are classified as surplus or deficit based on their positions in 2006.

2 of Figure 4.9), and 2 percent using (3) (dashed lines in panel 2 of Figure 4.9).

Appendix 4.5. Vulnerability Thresholds

To establish the level at which a current account deficit (or net liability position) exposes a country to significantly greater risk, a threshold value is chosen so as to minimize the percentage of crises missed and the percentage of noncrises misclassified (type I and type II errors, respectively). By defining the loss function in terms of the percentages of crises and noncrises, the estimation penalizes missing a crisis much more heavily than issuing a false alarm (for example, if crises are 5 percent of the sample, missing one crisis is as costly as issuing 19 false alarms).

Four types of crisis are considered: banking, currency, and debt crises (from Laeven and Valencia 2012), and an indicator for sudden stops (from Chapter 4 of the April 2012 WEO); a comprehensive crisis indicator, which takes the value of one if there is at least one crisis in a given year, is also defined. The model is estimated using lagged values for the current account and net foreign asset position, since these variables may adjust sharply following a crisis (and vulnerabilities are better captured by the lagged value, that is, before the postcrisis adjustment). For that reason, observations in the year following a crisis are excluded from the estimation.

The exercise is performed for two samples of economies. The first sample consists of 34 advanced economies and corresponds to the sample used in the IMF's Vulnerability Exercise for Advanced Economies. The second sample consists of 53 emerging market and developing economies. It includes the sample used in the IMF's Vulnerability Exercise for Emerging Market and Developing Economies, as well as recently designated advanced economies that were emerging market and developing economies in the historical sample (for example, Korea). The data cover the period 1980–2010. Table 4.8 reports the results for the different crises. To obtain the average threshold (used in the chapter text), a weighted average of the thresholds for the different crises is calculated, in which the weights are proportional to the explanatory power of the threshold for the type of crisis with which it is associated (1 minus the sum of type I and type II errors).

Box 4.1. Switching Gears: The 1986 External Adjustment

Another exceptional episode of adjustment in global imbalances began in 1986 following an agreement between the largest deficit and surplus economies. This box highlights how expenditure switching featured more heavily in this episode against a backdrop of relatively strong global economic conditions.

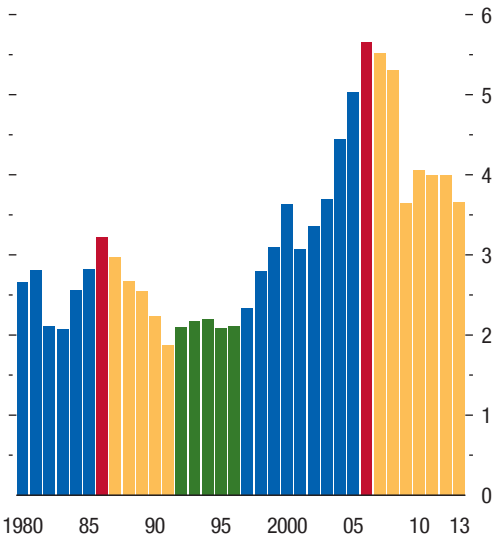
The Plaza Accord of September 1985 initiated a period of adjustment in global imbalances. The accord among the world's five largest economies (the Group of Five) sought to limit the widening imbalances between the world's largest deficit economy (the United States) and largest surplus economies (Japan and West Germany). The agreement would work through coordinated foreign exchange rate interventions that would help depreciate the U.S. dollar against other currencies, mainly the Japanese yen and the German deutschmark (or "appreciate nondollar currencies").[1] As a result, absolute global current account imbalances declined during the five years beginning in 1986 at an average annual rate of ¼ percent of world GDP, resulting in a total adjustment of 1¼ percent by 1991 (Figure 4.1.1).

The configuration of imbalances at the start of the adjustment in 1986 was similar to that of 2006, with deficits and surpluses largely concentrated in a handful of systemically important economies (Table 4.1.1). As of 1986, the U.S. current account deficit accounted for three-fourths of the sum of the world's top 10 deficits, and the combined surpluses of Japan and West Germany were almost as large in dollar terms. By 1991, the U.S. external imbalance had moved into surplus and accounted for the lion's share of the reduction in the world's largest deficits. The primary counterparts to this adjustment on the surplus side (switching from surplus to large deficits) were Germany, which was undergoing reunification, and Spain. Therefore, the share of Japan and the United States in absolute global imbalances declined from more than 50 percent in 1986 to 17 percent in 1991.

Unlike the adjustment in the recent period, the adjustment that began in 1986 took place against a relatively more benign global economic landscape, with GDP across major deficit and surplus economies remaining close to or above trend during this period. GDP in the United States remained close to preadjustment trends, and those in major surplus economies climbed above trend. Overall, global GDP growth remained steady between 1987 and 1989, dipping only in 1990 as the United States fell into recession.

A key difference between the two periods of adjustment is the relatively larger role for expenditure switching in the earlier episode. Expenditure switching between foreign-produced and domestically produced goods was inevitable given that the adjustment was engineered through exchange rate intervention, and the result was an 11 percent real appreciation of the yen during the period 1986–88 and a 15 percent real depreciation of the dollar.[2] However, outside these two major

Figure 4.1.1. Global Current Account Imbalances in Absolute Terms
(Percent of world GDP)



Source: IMF staff calculations.
Note: Yellow bars highlight main periods of adjustment in absolute global imbalances, with red bars marking the beginning year of the adjustment period. Green bars highlight extended period of compressed absolute imbalances following the 1986–91 adjustment. Blue bars are used for all other years.

The authors of this box are Aqib Aslam and Juan Yépez.

[1]See Funabashi 1988. In fact, the dollar had already started depreciating from its peak in March 1985, but the pace of depreciation picked up following the Plaza Accord.

[2]Indeed, the Plaza Accord succeeded too well: concerned that the sharp depreciation of the dollar was disrupting currency markets, ministers from the parties to the agreement as well as from Canada (the Group of Six) met at the Louvre in February 1987 (the "Louvre Accord") seeking to "put the brakes" on the dollar decline. The dollar continued to depreciate, however, with the depreciation ultimately resulting in the October 1987 stock

Box 4.1 *(continued)*

Table 4.1.1. Largest Deficit and Surplus Economies, 1986 and 1991

1986				1991			
	Billions of U.S. Dollars	Percent of GDP	Percent of World GDP		Billions of U.S. Dollars	Percent of GDP	Percent of World GDP
1. Largest Deficit Economies							
United States	–147.2	–3.2	–1.05	Italy	–29.9	–2.5	–0.10
Saudi Arabia	–11.8	–13.6	–0.08	Saudi Arabia	–27.5	–20.9	–0.09
Canada	–11.2	–3.0	–0.08	Kuwait	–26.2	–242.2	–0.09
Australia	–9.2	–5.0	–0.07	Germany	–24.3	–1.3	–0.08
Iran	–5.7	–6.8	–0.04	Canada	–22.4	–3.7	–0.07
Brazil	–5.7	–2.1	–0.04	Spain	–20.0	–3.6	–0.07
United Kingdom	–5.3	–0.9	–0.04	United Kingdom	–14.9	–1.4	–0.05
India	–4.6	–1.8	–0.03	Mexico	–14.6	–4.1	–0.05
Norway	–4.5	–5.9	–0.03	Iran	–11.2	–11.5	–0.04
Denmark	–4.5	–5.2	–0.03	Australia	–10.6	–3.3	–0.04
Total	**–209.5**	**–47.5**	**–1.5**	**Total**	**–201.8**	**–294.4**	**–0.7**
2. Largest Surplus Economies							
Japan	84.5	4.1	0.60	Japan	68.1	1.9	0.23
West Germany	38.5	4.2	0.27	Taiwan Province of China	12.5	6.7	0.04
Taiwan Province of China	16.3	21.0	0.12	Switzerland	10.2	4.1	0.03
Switzerland	6.7	4.6	0.05	Netherlands	7.5	2.5	0.02
Kuwait	5.7	32.6	0.04	Norway	5.0	4.2	0.02
Netherlands	4.4	2.4	0.03	Singapore	4.9	10.7	0.02
Spain	3.7	1.5	0.03	Belgium	4.8	2.3	0.02
Belgium	3.1	2.7	0.02	Hong Kong SAR	3.8	4.3	0.01
South Africa	2.8	4.2	0.02	United States	2.9	0.0	0.01
Korea	2.8	2.3	0.02	Brunei Darussalam	2.6	69.3	0.01
Total	**168.4**	**79.6**	**1.2**	**Total**	**122.2**	**106.1**	**0.4**

Source: IMF, World Economic Outlook database.

Table 4.1.2. Panel Regression Results: Post–Plaza Accord versus Post–2006 Current Account Adjustments

	(1)	(2)	(3)	(4)	(5)	(6)
	1986–91 Adjustment Period			2007–13 Adjustment Period		
Real Domestic Demand (YoY change, percent)	–0.31*** (–4.86)	–0.33*** (–5.20)		–0.48*** (–9.26)	–0.47*** (–8.96)	
Real Domestic Demand, Trading Partners (YoY change, percent)	0.15 (1.18)	0.16 (1.27)		0.07 (0.64)	0.08 (0.77)	
Real Effective Exchange Rate (CPI based) (YoY change, percent)	–0.04* (–1.71)		–0.06*** (–3.93)	0.04 (1.35)		–0.04 (–1.50)
Terms of Trade (YoY change, percent)	0.10*** (2.69)	0.10** (2.63)	0.05 (1.42)	0.11*** (2.81)	0.12*** (2.98)	0.06 (1.55)
R^2 (within)	0.31	0.29	0.06	0.48	0.47	0.22
R^2 (overall)	0.30	0.27	0.05	0.48	0.47	0.22
Standard deviation of residuals within groups	0.84	0.94	0.96	0.96	0.99	1.13
Standard deviation of residuals	1.96	1.98	2.28	2.54	2.55	3.12
Intraclass correlation	0.16	0.18	0.15	0.12	0.13	0.12
Number of observations	242	242	242	384	384	384
Number of countries	50	50	50	64	64	64

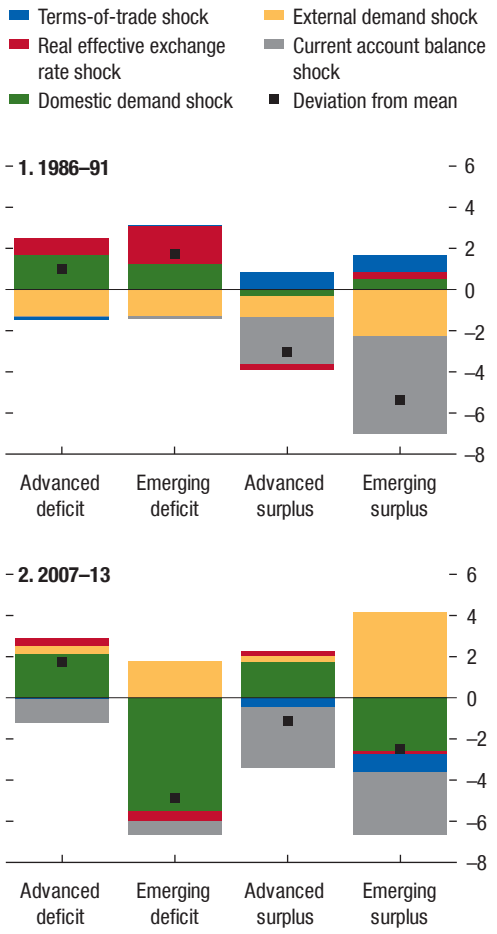
Source: IMF staff estimates.

Note: *t*-statistics in parentheses. CPI = consumer price index; YoY = year over year.

*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

Box 4.1 *(continued)*

Figure 4.1.2. Historical Decomposition of Current Account Adjustment



Source: IMF staff calculations.
Note: Advanced deficit = Australia, Czech Republic, Estonia, France, Greece, Iceland, Ireland, Italy, Latvia, New Zealand, Portugal, Slovak Republic, Slovenia, Spain, United Kingdom, United States; advanced surplus = Austria, Belgium, Canada, Denmark, Finland, Germany, Hong Kong SAR, Israel, Japan, Korea, Netherlands, Norway, Singapore, Sweden, Switzerland, Taiwan Province of China; emerging deficit = Bulgaria, Colombia, Costa Rica, Croatia, Dominican Republic, El Salvador, Guatemala, Hungary, India, Lithuania, Mexico, Pakistan, Poland, Romania, Serbia, South Africa, Sri Lanka, Thailand, Tunisia, Turkey, Uruguay; emerging surplus = Argentina, Brazil, Chile, China, Indonesia, Malaysia, Morocco, Peru, Philippines, Russia, Ukraine.

surplus and deficit economies, there was no strong change in the direction of real effective exchange rates, and the rest of the world's absolute level of imbalances remained the same as a portion of world GDP.

The relatively greater role for expenditure switching in the 1986 episode can be seen in a panel regression that examines the contribution of domestic demand and the real effective exchange rate in the 1986–91 and 2006–13 current account adjustment periods (Table 4.1.2). For example, in the years following the Plaza Accord, a 10 percentage point reduction in the real appreciation rate increases the rate of adjustment of the current account by 3 percentage points, an effect that is statistically significant. In contrast, although the estimate is larger in the most recent adjustment period, its effect is not statistically significant.

At the same time, if the demand variables of the panel regression are dropped, the R^2 of the 1986–91 period is larger than that of the 2007–13 adjustment period, and the coefficient of the real effective exchange rate becomes larger and more statistically significant. The contemporaneous relationship between the real effective exchange rate, the terms of trade, and the current account is complex because these variables are jointly determined; therefore, the estimates from these regressions could be biased.

The stronger role of expenditure switching in the second half of the 1980s is also recovered using a complementary framework—a parsimonious panel vector autoregression—in which the issue of potential endogeneity can be better addressed. Historical decompositions (Figure 4.1.2) of the current account adjustment into demand and price factors show that shocks to the real effective exchange rate can explain one-third of the improvement in the current account from its historical average for advanced and emerging market deficit economies (red segments) in the years immediately following the Plaza Accord (compared with one-eighth in the 2007–13 adjustment period).[3]

market crash, when coordinated interest rate cuts by Group of Seven (adding Italy to the group) central banks allowed them to inject liquidity without exerting further stress on exchange rates; see Ghosh and Masson 1994, chapter 4.

[3]The historical decomposition is obtained from a panel vector autoregression for 64 economies calculated for the 1973–2013 period using annual data. The identification strategy is based on contemporaneous restrictions based on the following recursive ordering: the terms of trade; the real effective exchange rate; and the changes in real external demand, real domestic demand, and the current account balance as a share of GDP; therefore, there

Box 4.1 *(continued)*

Overall, the key lesson from the 1986 episode is that, in a favorable global economic environment, a policy-engineered current account adjustment can prove to be both effective and durable. Imbalances remained compressed in the aftermath of the 1991 global recession until as late as 1996, making this the longest period of current account narrowing since the Bretton Woods era (see green bars in Figure 4.1.1). Therefore, the Plaza Accord, although not without its detractors, provides some insight into how policy-induced expenditure switching could reduce external imbalances and in some cases boost growth.[4]

is a series of shocks for each variable in the model. Results are qualitatively robust to different orderings.

[4]Some commentators blame the Plaza and Louvre Accords for igniting the expansionary policies that led to Japan's asset boom and bust, which triggered that country's "lost decade" in the 1990s. See Box 4.1 of the April 2010 *World Economic Outlook*.

Box 4.2. A Tale of Two Adjustments: East Asia and the Euro Area

The experiences of the stressed euro area economies during the recent euro area sovereign debt crises stand in contrast to those of the Asian market economies during the Asian financial crisis of the late 1990s. The difference between these two groups in their patterns of adjustment is stark: East Asian economies were able to rely on demand-switching effects to a much greater degree than have the stressed euro area economies and thereby avoided the prolonged contraction in output that has afflicted the latter.

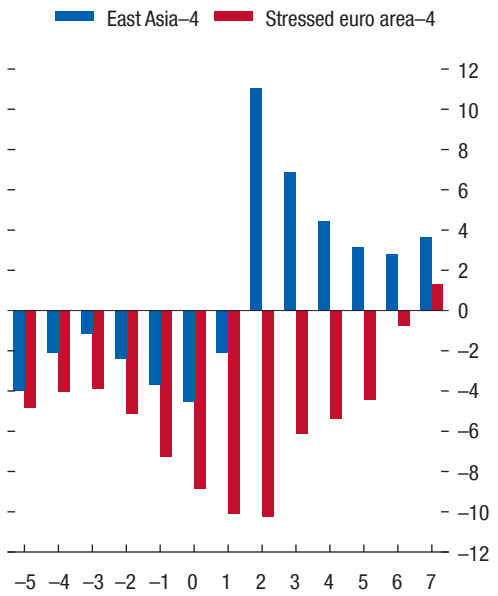
Financial crises erupted in Asia starting in Thailand in July 1997 before spreading to other economies in the region. Four of the affected economies—Indonesia, Korea, Malaysia, and Thailand (the "East Asia–4")—all experienced severe recessions. More than a decade later, three euro area economies—Greece, Ireland, and Portugal—became embroiled in sovereign debt crises in the wake of the global financial crisis, and one other in the euro area—Spain—faced strong funding pressures arising from banking sector problems. As a result, these four economies also experienced sharp economic downturns (the "stressed euro area–4"). Both the East Asian and the stressed euro area economies endured sizable external adjustments, though the current account swing in the former was much more abrupt than that in the latter (Figure 4.2.1).

The experiences of the two groups of economies share some important similarities and differences. Both groups experienced what appear to be permanent losses in output in the aftermath of their respective crises (Figure 4.2.2). By the end of 1998, average real output growth in the East Asia–4 had fallen to –10 percent, and during the Great Recession, average annual growth in the stressed euro area economies turned negative, falling to –4 percent in 2009.[1]

Yet the subsequent paths for output and current accounts in the two sets of economies have differed markedly. In the East Asia–4, output growth recovered relatively quickly, returning within a few years to rates closer to those observed before the crisis. In contrast, pressures from the region's sovereign debt crisis meant that activity in the stressed euro area economies contracted again in early 2011 and started to rebound only in the second half of 2013. As a result, output in the stressed euro area–4 remains firmly below 2006 projections and has yet to recover. Therefore, relative patterns in aggregate demand changes and expenditure switching could shed light on the differences in external adjustment.

In the East Asia–4, average real domestic demand growth plummeted to –18 percent in 1998 before recovering the following year (Figure 4.2.3). The corresponding drop in the stressed euro area economies was not as great, at about –6 percent in 2009.

Figure 4.2.1. Current Account Balances
(Percent of regional GDP)



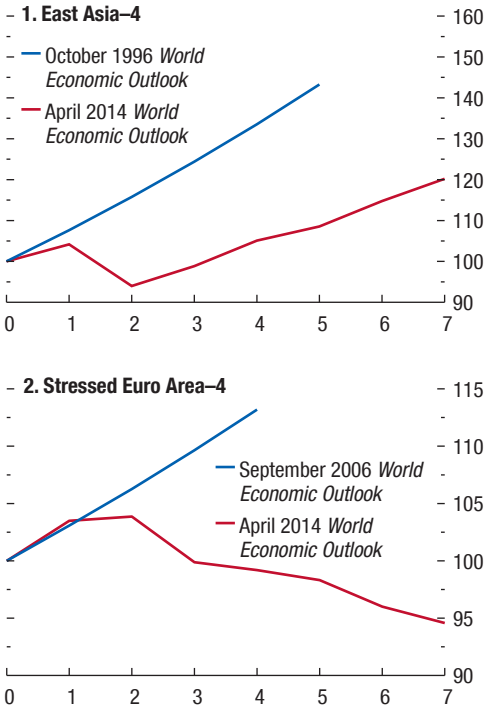
Source: IMF staff calculations.
Note: The horizontal axis depicts years, with year 0 being 1996 for the East Asia economies and 2006 for the stressed euro area economies. East Asia–4 = Indonesia, Korea, Malaysia, Thailand; stressed euro area–4 = Greece, Ireland, Portugal, Spain.

The author of this box is Aqib Aslam.

[1]The two groups shared two other important similarities when their respective crises struck, notably fixed or semifixed exchange rates and large current account deficits. Indonesia, Korea, and Thailand operated such exchange rate regimes before the crisis, and the stressed euro area group was subject to fixed exchange rates in respect to one another and their major regional trading partners. In the East Asia case, current account deficits were mainly associated with private sector overinvestment, creating downward pressure on the currencies in the region and encouraging speculative attacks. Current account imbalances in most of the stressed euro area economies were instead partly linked to fiscal imbalances.

Box 4.2 *(continued)*

Figure 4.2.2. Real GDP
(Index, year 0 = 100)



Source: IMF staff calculations.
Note: The horizontal axis depicts years, with year 0 being 1996 for the East Asia economies and 2006 for the stressed euro area economies. East Asia–4 = Indonesia, Korea, Malaysia, Thailand; stressed euro area–4 = Greece, Ireland, Portugal, Spain.

Figure 4.2.3. Real Domestic Demand Growth
(Percent)

Source: IMF staff calculations.
Note: The horizontal axis depicts years, with year 0 being 1996 for the East Asia economies and 2006 for the stressed euro area economies. East Asia–4 = Indonesia, Korea, Malaysia, Thailand; stressed euro area–4 = Greece, Ireland, Portugal, Spain.

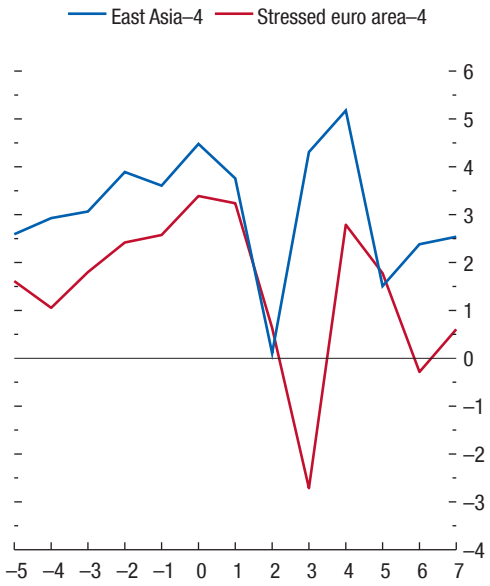
However, the protracted nature of the euro area crisis has meant that domestic demand in these economies has continued to shrink, on average, by slightly more than 3 percent per year since 2008. Furthermore, the average growth of external demand for the East Asia–4 was stronger than that for the stressed euro area–4. That strength boosted exports, which in turn improved the current account balance and economic growth. Indeed, real domestic demand among the major trading partners of the East Asia–4 grew during the postcrisis period (Figure 4.2.4). In contrast, the weak external demand for the four stressed euro area economies reflected the severity of the Great Recession and the anemic global recovery, an environment that made the external adjustment and growth recovery for that group much more challenging than for the East Asian economies.

Another key divergence in experiences is the extent of expenditure switching. Most of the economies in the East Asia–4 abandoned their de facto currency pegs soon after the crisis hit, experiencing sharp real depreciations that ranged from 15 percent to 50 percent (Figure 4.2.5).[2] By contrast, real effective exchange rate movements for the stressed euro area economies have been much smaller; the average real depreciation peaked at 2.5 percent in 2010 and then

[2]In most cases, these economies also resisted subsequent nominal and real currency appreciations by accumulating reserves to replenish their depleted stocks of foreign exchange reserves.

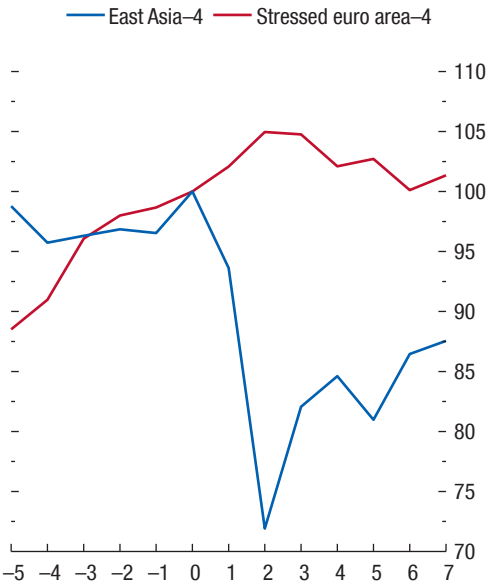
Box 4.2 *(continued)*

Figure 4.2.4. Real External Demand Growth
(Percent)



Source: IMF staff calculations.
Note: The horizontal axis depicts years, with year 0 being 1996 for the East Asia economies and 2006 for the stressed euro area economies. The figure depicts the weighted average of real domestic demand for trading partners of each country. East Asia–4 = Indonesia, Korea, Malaysia, Thailand; stressed euro area–4 = Greece, Ireland, Portugal,Spain.

Figure 4.2.5. Real Effective Exchange Rates (CPI Based)
(Index, year 0 = 100)



Source: IMF staff calculations.
Note: CPI = consumer price index. The horizontal axis depicts years, with year 0 being 1996 for the East Asia economies and 2006 for the stressed euro area economies. East Asia–4 = Indonesia, Korea, Malaysia, Thailand; stressed euro area–4 = Greece, Ireland, Portugal, Spain.

again in 2012. Instead, these economies have had to rely on slow and painful internal wage and price declines to improve their competitiveness.

These relative differences in the effects of demand compression and switching on external balances can be traced through the changes in saving, investment, and the trade balance. In both episodes, the reduction in domestic demand manifested itself as a sharp contraction in investment. For instance, in East Asia, the abrupt collapse in investment in response to the capital flow reversal led to a marked improvement in current account balances. Broadly similar patterns were observed for the stressed euro area economies, although the decline in investment was more moderate and protracted.

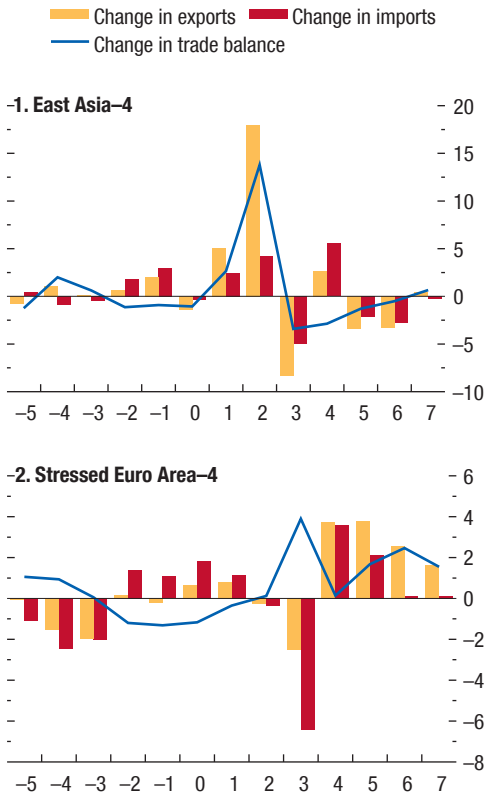
The marked improvement in East Asian trade balances reflects both the effects of demand compression on imports (a decrease) and the effects of demand switching on exports (an increase) and imports (a further decrease) (Figures 4.2.6 and 4.2.7). The improved trade balance was complemented by stronger exports resulting from buoyant external demand. In contrast, the improvement in the stressed euro area–4's trade balance has been largely due to the effects of demand compression on imports and the drag on exports from a weak external environment. With insufficient expenditure switching, exports have only recently returned to precrisis levels for the region on average (see Figure 4.2.7).

When both expenditure reduction and expenditure switching are at work, external adjustment can clearly

Box 4.2 *(continued)*

Figure 4.2.6. Exports and Imports as a Share of GDP

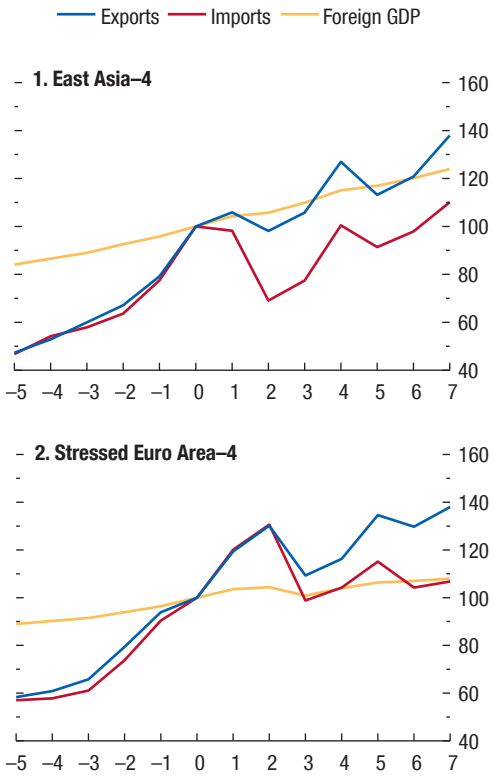
(Percent of regional GDP)



Sources: IMF, Balance of Payments Statistics database; and IMF staff calculations.
Note: The horizontal axis depicts years, with year 0 being 1996 for the East Asia economies and 2006 for the stressed euro area economies. East Asia–4 = Indonesia, Korea, Malaysia, Thailand; stressed euro area–4 = Greece, Ireland, Portugal, Spain.

Figure 4.2.7. Real Exports, Imports, and Foreign GDP

(Index, year 0 = 100)



Sources: IMF, Balance of Payments Statistics database; and IMF staff calculations.
Note: The horizontal axis depicts years, with year 0 being 1996 for the East Asia economies and 2006 for the stressed euro area economies. East Asia–4 = Indonesia, Korea, Malaysia, Thailand; stressed euro area–4 = Greece, Ireland, Portugal, Spain.

be substantially quicker and potentially less painful. For the East Asian economies, in which both those mechanisms were in play, current account imbalances corrected sharply within two years of the genesis of the crisis. In contrast, it has taken the stressed euro area economies seven years to move to surpluses. However, sudden stops wreaked far greater havoc on the financial systems and output of the East Asia–4 than did the financial and sovereign debt crises on the economies of the stressed euro area, a difference partly reflecting the automatic stabilizers that operated within the Economic and Monetary Union.

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ANNEX

IMF EXECUTIVE BOARD DISCUSSION OF THE OUTLOOK, SEPTEMBER 2014

The following remarks were made by the Chair at the conclusion of the Executive Board's discussion of the World Economic Outlook, Global Financial Stability Report, *and* Fiscal Monitor *on September 25, 2014.*

Executive Directors noted that an uneven global recovery continues, notwithstanding setbacks in the first half of the year. However, the pace of recovery remains weak as the legacies of the crisis continue to cast a shadow. Investment has not picked up solidly in many advanced economies, and emerging market economies are adjusting to lower rates of economic growth than those reached during the immediate postcrisis recovery. Moreover, activity in some regions is being negatively affected by ongoing geopolitical tensions. Directors also observed that some problems that predate the global financial crisis—including the effects of an aging population on labor force growth, weak productivity growth, and infrastructure gaps—are coming back to the fore and affecting the pace of recovery through lower potential growth in a number of economies.

Directors noted that global growth should increase as growth in major advanced economies picks up on accommodative monetary policies, supportive financial market conditions, and the more gradual pace of fiscal consolidation (except in a few countries, including Japan). Growth in emerging market and developing economies should also increase with a gradual improvement in structural factors affecting activity in some economies and further strengthening in external demand as advanced economies' growth recovers.

Notwithstanding this expected pickup in growth, Directors underscored that the recovery remains fragile and subject to significant downside risks. If geopolitical tensions persist it could have negative effects on confidence and contribute to increases in oil prices and declines in asset prices. In some advanced economies, risks also arise from the effects of protracted low inflation or deflation on activity or on public debt dynamics.

Directors underscored concerns about increased financial risk taking arising from the prolonged period of low interest rates, resulting in asset price appreciation, spread compression, and record-low volatility across a broad range of asset classes. They also noted that asset holdings are now concentrated in a small number of large managers. These increased market and liquidity risks could spill over to global markets, potentially triggered by heightened geopolitical risks or volatility associated with monetary policy normalization. Directors noted that the largest banks have strengthened their balance sheets in response to tighter regulation, but low profitability at some banks has created the need for an overhaul of business models, potentially creating headwinds for the economic recovery. Moreover, credit intermediation has been migrating to the shadow banking sector, creating new challenges for supervision and regulation. Against this backdrop, Directors observed that a tighter financing environment could adversely affect the sovereign debt dynamics of many emerging market and developing economies, particularly if coupled with lower growth.

Directors also remained concerned about medium-term risks to the global recovery. Growth in advanced economies could continue to disappoint over a longer period because of lower potential growth or because of a sustained weakness in demand. Directors noted that absent structural reforms, potential growth may be lower than currently projected.

Directors called for greater efforts in most economies to restore growth. They considered that premature normalization in monetary policy should be avoided, given the absence of robust demand growth in advanced economies. Some Directors also

saw a need for additional actions by the European Central Bank, while a few Directors cautioned that more time is needed to gauge the effectiveness of policies already introduced. A few other Directors saw little or no scope for further unconventional monetary accommodation in the euro area, as it may not be effective in promoting demand and sustainable growth, and cautioned against maintaining such accommodation longer than necessary, in view of the financial stability risks.

Directors highlighted the need to restructure weak banks and resolve nonviable institutions and to enhance the transmission of monetary policy through balance sheet repair. Moreover, adequate data to monitor the buildup of risks and a mandate for authorities to limit these risks, particularly in the shadow banking sector, are required. Directors broadly supported the use of macroprudential policies to improve the trade-off between financial and economic risk taking as well as regulate and supervise the shadow banking sector, although a number of Directors noted the limited experience regarding the effectiveness of such measures. To ensure adequate incentives for risk taking in the banking sector, some Directors underscored the importance of governance and executive compensation reforms.

Directors stressed that fiscal adjustment in advanced economies needs to be attuned, in pace and composition, to support the immediate recovery as well as lay the ground for medium-term plans (especially in the United States and Japan). More generally, debt and deficit reduction should be designed to minimize their adverse effects on jobs and growth. Directors broadly agreed that for countries with clearly identified infrastructure needs and in which efficient public investment processes exist, an increase in public infrastructure investment could provide a boost to demand as well as raise potential output in the medium term. Directors also broadly noted that in some cases a more supportive fiscal stance could help to bring forward the growth benefits of structural reforms, provided that there is enough fiscal room and that the costs and benefits of the reforms, as well as their implementation prospects, are sufficiently certain. In some countries, fiscal conditions put a premium on structural reforms that can be implemented without budgetary costs.

Directors noted that emerging markets' efforts to rebalance growth toward domestic sources have supported global growth, although this rebalancing, combined with lower-than-expected growth, has also reduced policy space and raised vulnerabilities for some countries. In this context, the scope for macroeconomic policies to support growth, should downside risks materialize, is limited for economies with weak fiscal or external current account positions or high or increasing inflation levels or those facing financial system risks from a sustained period of credit expansion. Directors underscored the importance of reducing these vulnerabilities, including by rebuilding fiscal buffers. They also stressed that continued strong growth in low-income countries calls for greater progress in strengthening policies—by boosting fiscal positions with stronger revenues and rationalizing public spending, achieving greater monetary policy independence, and strengthening public financial management. Directors emphasized the importance for emerging markets to continue managing external financial shocks with exchange rate flexibility, complemented with other measures to limit excessive exchange rate volatility.

Directors underscored the importance of structural reforms to raise potential growth in both advanced and emerging market and developing economies. Within the euro area, these include active labor market policies and better-targeted training programs. Higher public investment in some creditor economies, complemented by policies to encourage private investment, could boost demand in the short term while raising potential output over the medium term. More forceful structural reforms in Japan are also needed to increase labor supply and raise productivity in some sectors through deregulation. Other advanced economies could also raise potential growth with measures to augment human and physical capital and increase labor force participation. Among emerging market and developing economies, the priorities vary. These include removing infrastructure bottlenecks; reforms to education, labor, and product markets; and better government services delivery. While the current account surplus in China has decreased markedly, further progress to gradually shift its growth toward domestic consumption and reduce reliance on credit

and investment would help forestall medium-term risks of financial disruption or a sharp slowdown. Joint efforts by both surplus and deficit economies are needed to contribute to a further narrowing of global external imbalances. Further diversification and structural transformation remains a key priority for low-income countries.

STATISTICAL APPENDIX

The Statistical Appendix presents historical data as well as projections. It comprises six sections: Assumptions, What's New, Data and Conventions, Classification of Countries, Key Data Documentation, and Statistical Tables.

The assumptions underlying the estimates and projections for 2014–15 and the medium-term scenario for 2016–19 are summarized in the first section. The second section presents a brief description of the changes to the database and statistical tables since the April 2014 *World Economic Outlook* (WEO). The third section provides a general description of the data and the conventions used for calculating country group composites. The classification of countries in the various groups presented in the WEO is summarized in the fourth section. The fifth section provides information on methods and reporting standards for the member countries' national account and government finance indicators included in the report.

The last, and main, section comprises the statistical tables. (Statistical Appendix A is included here; Statistical Appendix B is available online.) Data in these tables have been compiled on the basis of information available through September 19, 2014. The figures for 2014 and beyond are shown with the same degree of precision as the historical figures solely for convenience; because they are projections, the same degree of accuracy is not to be inferred.

Assumptions

Real effective *exchange rates* for the advanced economies are assumed to remain constant at their average levels during the period July 30 to August 27, 2014. For 2014 and 2015, these assumptions imply average U.S. dollar/special drawing right (SDR) conversion rates of 1.537 and 1.534, U.S. dollar/euro conversion rates of 1.354 and 1.344, and yen/U.S. dollar conversion rates of 102.4 and 102.3, respectively.

It is assumed that the *price of oil* will average $102.76 a barrel in 2014 and $99.36 a barrel in 2015.

Established *policies* of national authorities are assumed to be maintained. The more specific policy assumptions underlying the projections for selected economies are described in Box A1.

With regard to *interest rates*, it is assumed that the London interbank offered rate (LIBOR) on six-month U.S. dollar deposits will average 0.4 percent in 2014 and 0.7 percent in 2015, that three-month euro deposits will average 0.2 percent in 2014 and 0.1 percent in 2015, and that six-month yen deposits will average 0.2 percent in 2014 and 2015.

With respect to *introduction of the euro*, on December 31, 1998, the Council of the European Union decided that, effective January 1, 1999, the irrevocably fixed conversion rates between the euro and currencies of the member countries adopting the euro are as follows:

1 euro	=	13.7603	Austrian schillings
	=	40.3399	Belgian francs
	=	0.585274	Cyprus pound[1]
	=	1.95583	Deutsche marks
	=	15.6466	Estonian krooni[2]
	=	5.94573	Finnish markkaa
	=	6.55957	French francs
	=	340.750	Greek drachmas[3]
	=	0.787564	Irish pound
	=	1,936.27	Italian lire
	=	0.702804	Latvian lat[4]
	=	40.3399	Luxembourg francs
	=	0.42930	Maltese lira[1]
	=	2.20371	Netherlands guilders
	=	200.482	Portuguese escudos
	=	30.1260	Slovak koruna[5]
	=	239.640	Slovenian tolars[6]
	=	166.386	Spanish pesetas

[1]Established on January 1, 2008.
[2]Established on January 1, 2011.
[3]Established on January 1, 2001.
[4]Established on January 1, 2014.
[5]Established on January 1, 2009.
[6]Established on January 1, 2007.

See Box 5.4 of the October 1998 WEO for details on how the conversion rates were established.

What's New

- The WEO has adopted the sixth edition of the *Balance of Payments and International Investment Position Manual* (BPM6). Notable changes include the following: (1) Merchanting has been reclassified from services to exports of goods. (2) Manufacturing services on physical inputs owned by others (goods for processing in the BPM5) and maintenance and repair services (repairs on goods in the BPM5) have been reclassified from goods to services. (3) Migrants' transfers have been removed from capital transfers in the capital account because a change in ownership is no longer imputed. (4) Reverse investment in direct investment has been reclassified so as to present assets and liabilities on a gross basis. (5) A separate financial derivatives category is now included in the financial account, whereas previously it was a subitem under portfolio investment. In addition, the conventional sign for increases in assets (and liabilities) within the financial account is now positive, and balances are now computed as net acquisition of financial assets *minus* net incurrence of financial liabilities.
- With the adoption of the BPM6, the Statistical Appendix tables of the WEO have also been revised. Table A13, which previously summarized data on net and private financial flows in emerging market and developing economies, is now a Summary of Financial Account Balances. Table A14 has been deleted because of data constraints. Table A15, Summary of Sources and Uses of World Savings, is now A14, Summary of Net Lending and Borrowing, and Table A16 has been renumbered as A15. Part B of the Statistical Appendix contains most of the same tables as previous WEO reports. Tables B16–B21 have been absorbed into a new Table B15, Summary of Current Account Transactions, and into A13, Summary of Financial Account Balances. As a result, the subsequent tables have been renumbered, so that the former Tables B22 through B27 are now Tables B16 through B21.
- Following the recent release of the 2011 International Comparison Program (ICP) survey for new purchasing-power-parity benchmarks, the WEO's estimates of purchasing-power-parity weights and GDP valued at purchasing power parity have been updated. For more detail, see "Revised Purchasing Power Parity Weights" in the July 2014 *WEO Update,* http://www.imf.org/external/pubs/ft/weo/2014/update/02/index.htm.
- As in the April 2014 WEO, data for Syria are excluded from 2011 onward because of the uncertain political situation.
- Because of the ongoing IMF program with Pakistan, the series from which the nominal exchange rate assumptions can be calculated are not made public, as the nominal exchange rate is a market-sensitive issue in Pakistan.
- As in the April 2014 WEO, the consumer price projections for Argentina are excluded because of a structural break in the data. Please refer to note 5 in Table A7 for further details.
- Data for Latvia, which were previously excluded from the euro area aggregates because of data constraints, are now included.
- Projections for Ukraine, which were previously excluded because of the crisis, are once again included.

Data and Conventions

Data and projections for 189 economies form the statistical basis of the WEO database. The data are maintained jointly by the IMF's Research Department and regional departments, with the latter regularly updating country projections based on consistent global assumptions.

Although national statistical agencies are the ultimate providers of historical data and definitions, international organizations are also involved in statistical issues, with the objective of harmonizing methodologies for the compilation of national statistics, including analytical frameworks, concepts, definitions, classifications, and valuation procedures used in the production of economic statistics. The WEO database reflects information from both national source agencies and international organizations.

Most countries' macroeconomic data presented in the WEO conform broadly to the 1993 version of the *System of National Accounts* (SNA). The IMF's sector statistical standards—the BPM6, the *Monetary and Financial Statistics Manual* (MFSM 2000), and the *Government Finance Statistics Manual 2001* (GFSM 2001)—have been or are being aligned with the 2008 SNA.[1] These standards reflect the IMF's special interest in countries' external positions, financial sector stability, and public sector fiscal positions. The process of adapting country data

[1]Many other countries are implementing the 2008 SNA and will release national accounts data based on the new standard in 2014. A few countries use versions of the SNA older than 1993. A similar adoption pattern is expected for the BPM6. Please refer to Table G, which lists the statistical standards adhered to by each country.

to the new standards begins in earnest when the manuals are released. However, full concordance with the manuals is ultimately dependent on the provision by national statistical compilers of revised country data; hence, the WEO estimates are only partially adapted to these manuals. Nonetheless, for many countries the impact on major balances and aggregates of conversion to the updated standards will be small. Many other countries have partially adopted the latest standards and will continue implementation over a period of years.

Composite data for country groups in the WEO are either sums or weighted averages of data for individual countries. Unless noted otherwise, multiyear averages of growth rates are expressed as compound annual rates of change.[2] Arithmetically weighted averages are used for all data for the emerging market and developing economies group except data on inflation and money growth, for which geometric averages are used. The following conventions apply:

- Country group composites for exchange rates, interest rates, and growth rates of monetary aggregates are weighted by GDP converted to U.S. dollars at market exchange rates (averaged over the preceding three years) as a share of group GDP.
- Composites for other data relating to the domestic economy, whether growth rates or ratios, are weighted by GDP valued at purchasing power parity as a share of total world or group GDP.[3]
- Unless noted otherwise, composites for all sectors for the euro area are corrected for reporting discrepancies in intra-area transactions. Annual data are not adjusted for calendar-day effects. For data prior to 1999, data aggregations apply 1995 European currency unit exchange rates.
- Composites for fiscal data are sums of individual country data after conversion to U.S. dollars at the average market exchange rates in the years indicated.
- Composite unemployment rates and employment growth are weighted by labor force as a share of group labor force.
- Composites relating to external sector statistics are sums of individual country data after conversion to U.S. dollars at the average market exchange rates in the years indicated for balance of payments data and at end-of-year market exchange rates for debt denominated in currencies other than U.S. dollars.
- Composites of changes in foreign trade volumes and prices, however, are arithmetic averages of percent changes for individual countries weighted by the U.S. dollar value of exports or imports as a share of total world or group exports or imports (in the preceding year).
- Unless noted otherwise, group composites are computed if 90 percent or more of the share of group weights is represented.

Data refer to calendar years, except in the case of a few countries that use fiscal years. Please refer to Table F, which lists the economies with exceptional reporting periods for national accounts and government finance data for each country. For some countries, the figures for 2013 and earlier are based on estimates rather than actual outturns. Please refer to Table G, which lists the latest actual outturns for the indicators in the national accounts, prices, government finance, and balance of payments indicators for each country.

Classification of Countries

Summary of the Country Classification

The country classification in the WEO divides the world into two major groups: advanced economies and emerging market and developing economies.[4] This classification is not based on strict criteria, economic or otherwise, and it has evolved over time. The objective is to facilitate analysis by providing a reasonably meaningful method of organizing data. Table A provides an overview of the country classification, showing the number of countries in each group by region and summarizing some key indicators of their relative size (GDP valued by purchasing power parity, total exports of goods and services, and population).

Some countries remain outside the country classification and therefore are not included in the analysis. Anguilla, Cuba, the Democratic People's Republic of

[2]Averages for real GDP and its components, employment, GDP per capita, inflation, factor productivity, trade, and commodity prices are calculated based on the compound annual rate of change, except in the case of the unemployment rate, which is based on the simple arithmetic average.

[3]See Box A2 of the April 2004 WEO for a summary of the revised purchasing-power-parity-based weights and Annex IV of the May 1993 WEO. See also Anne-Marie Gulde and Marianne Schulze-Ghattas, "Purchasing Power Parity Based Weights for the *World Economic Outlook*," in *Staff Studies for the World Economic Outlook* (Washington: International Monetary Fund, December 1993), pp. 106–23.

[4]As used here, the terms "country" and "economy" do not always refer to a territorial entity that is a state as understood by international law and practice. Some territorial entities included here are not states, although their statistical data are maintained on a separate and independent basis.

Korea, and Montserrat are examples of countries that are not IMF members, and their economies therefore are not monitored by the IMF. Somalia is omitted from the emerging market and developing economies group composites because of data limitations.

General Features and Composition of Groups in the *World Economic Outlook* Classification

Advanced Economies

The 36 advanced economies are listed in Table B. The seven largest in terms of GDP—the United States, Japan, Germany, France, Italy, the United Kingdom, and Canada—constitute the subgroup of *major advanced economies* often referred to as the Group of Seven (G7). The members of the *euro area* are also distinguished as a subgroup. Composite data shown in the tables for the euro area cover the current members for all years, even though the membership has increased over time.

Table C lists the member countries of the European Union, not all of which are classified as advanced economies in the WEO.

Emerging Market and Developing Economies

The group of emerging market and developing economies (153) includes all those that are not classified as advanced economies.

The *regional breakdowns* of emerging market and developing economies are *Commonwealth of Independent States (CIS), emerging and developing Asia, emerging and developing Europe* (sometimes also referred to as "central and eastern Europe"), *Latin America and the Caribbean (LAC), Middle East, North Africa, Afghanistan, and Pakistan (MENAP),* and *sub-Saharan Africa (SSA).*

Emerging market and developing economies are also classified according to *analytical criteria.* The analytical criteria reflect the composition of export earnings and other income from abroad; a distinction between net creditor and net debtor economies; and, for the net debtors, financial criteria based on external financing sources and experience with external debt servicing. The detailed composition of emerging market and developing economies in the regional and analytical groups is shown in Tables D and E.

The analytical criterion *source of export earnings* distinguishes between categories *fuel* (Standard International Trade Classification—SITC 3) and *nonfuel* and then focuses on *nonfuel primary products* (SITCs 0, 1, 2, 4, and 68). Economies are categorized into one of these groups when their main source of export earnings exceeded 50 percent of total exports on average between 2009 and 2013.

The financial criteria focus on *net creditor economies, net debtor economies,* and *heavily indebted poor countries* (HIPCs). Economies are categorized as net debtors when their current account balance accumulations from 1972 (or earliest data available) to 2013 were negative. Net debtor economies are further differentiated on the basis of two additional financial criteria: *official external financing* and *experience with debt servicing*.[5] Net debtors are placed in the official external financing category when 66 percent or more of their total debt, on average, between 2009 and 2013 was financed by official creditors.

The HIPC group comprises the countries that are or have been considered by the IMF and the World Bank for participation in their debt initiative known as the HIPC Initiative, which aims to reduce the external debt burdens of all the eligible HIPCs to a "sustainable" level in a reasonably short period of time.[6] Many of these countries have already benefited from debt relief and have graduated from the initiative.

Low-Income Developing Countries (LIDCs) are countries that were designated Poverty Reduction and Growth Trust (PRGT) eligible in the 2013 PRGT eligibility review and had a level of per capita gross national income less than the PRGT income graduation threshold for non–small states (that is, twice the World Bank International Development Association operational threshold, or US$2,390 in 2011 as measured by the World Bank's Atlas method); and Zimbabwe.

[5]During 2009–13, 29 economies incurred external payments arrears or entered into official or commercial bank debt-rescheduling agreements. This group is referred to as *economies with arrears and/or rescheduling during 2009–13.*

[6]See David Andrews, Anthony R. Boote, Syed S. Rizavi, and Sukwinder Singh, *Debt Relief for Low-Income Countries: The Enhanced HIPC Initiative*, IMF Pamphlet Series 51 (Washington: International Monetary Fund, November 1999).

Table A. Classification by *World Economic Outlook* Groups and Their Shares in Aggregate GDP, Exports of Goods and Services, and Population, 2013[1]

(Percent of total for group or world)

	Number of Economies	GDP		Exports of Goods and Services		Population	
		Advanced Economies	World	Advanced Economies	World	Advanced Economies	World
Advanced Economies	**36**	**100.0**	**43.6**	**100.0**	**61.2**	**100.0**	**14.7**
United States		37.7	16.4	16.1	9.9	30.5	4.5
Euro Area	18	28.2	12.3	40.4	24.8	32.0	4.7
Germany		7.9	3.4	12.0	7.4	7.8	1.2
France		5.7	2.5	5.7	3.5	6.1	0.9
Italy		4.6	2.0	4.5	2.7	5.8	0.8
Spain		3.3	1.5	3.3	2.0	4.5	0.7
Japan		10.5	4.6	5.9	3.6	12.3	1.8
United Kingdom		5.2	2.3	5.6	3.4	6.2	0.9
Canada		3.4	1.5	3.9	2.4	3.4	0.5
Other Advanced Economies	14	15.0	6.5	28.1	17.2	15.6	2.3
Memorandum							
Major Advanced Economies	7	75.0	32.7	53.6	32.9	72.1	10.6
		Emerging Market and Developing Economies	World	Emerging Market and Developing Economies	World	Emerging Market and Developing Economies	World
Emerging Market and Developing Economies	**153**	**100.0**	**56.4**	**100.0**	**38.8**	**100.0**	**85.3**
Regional Groups							
Commonwealth of Independent States[2]	12	8.6	4.9	10.1	3.9	4.8	4.1
Russia		6.1	3.4	6.6	2.6	2.4	2.0
Emerging and Developing Asia	29	50.9	28.7	43.5	16.9	57.3	48.8
China		28.1	15.8	26.4	10.2	22.7	19.4
India		11.8	6.6	5.3	2.0	20.8	17.7
Excluding China and India	27	11.0	6.2	11.9	4.6	13.8	11.8
Emerging and Developing Europe	13	6.0	3.4	8.9	3.5	3.0	2.5
Latin America and the Caribbean	32	15.5	8.7	13.9	5.4	10.0	8.5
Brazil		5.2	3.0	3.1	1.2	3.4	2.9
Mexico		3.6	2.0	4.5	1.7	2.0	1.7
Middle East, North Africa, Afghanistan, and Pakistan	22	13.7	7.7	18.3	7.1	10.4	8.9
Middle East and North Africa	20	12.2	6.9	17.9	6.9	6.8	5.8
Sub-Saharan Africa	45	5.3	3.0	5.3	2.0	14.6	12.5
Excluding Nigeria and South Africa	43	2.5	1.4	3.0	1.1	10.9	9.3
Analytical Groups[3]							
By Source of Export Earnings							
Fuel	29	21.4	12.0	29.4	11.4	12.2	10.4
Nonfuel	124	78.6	44.3	70.6	27.4	87.8	74.8
Of Which, Primary Products	29	3.4	1.9	3.6	1.4	7.2	6.1
By External Financing Source							
Net Debtor Economies	123	48.4	27.3	39.6	15.3	62.7	53.5
Of Which, Official Financing	26	3.1	1.8	1.8	0.7	8.5	7.2
Net Debtor Economies by Debt-Servicing Experience							
Economies with Arrears and/or Rescheduling during 2009–13	29	5.1	2.9	3.1	1.2	7.5	6.4
Other Net Debtor Economies	94	43.3	24.4	36.5	14.2	55.2	47.1
Other Groups							
Heavily Indebted Poor Countries	38	2.3	1.3	1.9	0.7	11.0	9.4
Low-Income Developing Countries	59	7.2	4.1	6.0	2.3	22.2	18.9

[1]The GDP shares are based on the purchasing-power-parity valuation of economies' GDP. The number of economies comprising each group reflects those for which data are included in the group aggregates.

[2]Georgia and Turkmenistan, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.

[3]South Sudan is omitted from the net external position groups composite for lack of a fully developed database.

Table B. Advanced Economies by Subgroup

Major Currency Areas		
United States		
Euro Area		
Japan		
Euro Area		
Austria	Germany	Malta
Belgium	Greece	Netherlands
Cyprus	Ireland	Portugal
Estonia	Italy	Slovak Republic
Finland	Latvia	Slovenia
France	Luxembourg	Spain
Major Advanced Economies		
Canada	Italy	United States
France	Japan	
Germany	United Kingdom	
Other Advanced Economies		
Australia	Israel	Singapore
Czech Republic	Korea	Sweden
Denmark	New Zealand	Switzerland
Hong Kong SAR[1]	Norway	Taiwan Province of China
Iceland	San Marino	

[1]On July 1, 1997, Hong Kong was returned to the People's Republic of China and became a Special Administrative Region of China.

Table C. European Union

Austria	Germany	Poland
Belgium	Greece	Portugal
Bulgaria	Hungary	Romania
Croatia	Ireland	Slovak Republic
Cyprus	Italy	Slovenia
Czech Republic	Latvia	Spain
Denmark	Lithuania	Sweden
Estonia	Luxembourg	United Kingdom
Finland	Malta	
France	Netherlands	

Table D. Emerging Market and Developing Economies by Region and Main Source of Export Earnings

	Fuel	Nonfuel Primary Products
Commonwealth of Independent States		
	Azerbaijan	Uzbekistan
	Kazakhstan	
	Russia	
	Turkmenistan	
Emerging and Developing Asia		
	Brunei Darussalam	Mongolia
	Timor-Leste	Papua New Guinea
		Solomon Islands
		Tuvalu
Latin America and the Caribbean		
	Bolivia	Chile
	Colombia	Guyana
	Ecuador	Paraguay
	Trinidad and Tobago	Suriname
	Venezuela	Uruguay
Middle East, North Africa, Afghanistan, and Pakistan		
	Algeria	Afghanistan
	Bahrain	Mauritania
	Iran	Sudan
	Iraq	
	Kuwait	
	Libya	
	Oman	
	Qatar	
	Saudi Arabia	
	United Arab Emirates	
	Yemen	
Sub-Saharan Africa		
	Angola	Burkina Faso
	Chad	Burundi
	Republic of Congo	Central African Republic
	Equatorial Guinea	Côte d'Ivoire
	Gabon	Democratic Republic of the Congo
	Nigeria	Eritrea
	South Sudan	Guinea
		Guinea-Bissau
		Liberia
		Malawi
		Mali
		Niger
		Sierra Leone
		South Africa
		Zambia
		Zimbabwe

Table E. Emerging Market and Developing Economies by Region, Net External Position, and Status as Heavily Indebted Poor Countries and Low-Income Developing Countries

	Net External Position		Heavily Indebted Poor Countries[2]	Low-Income Developing Countries
	Net Creditor	Net Debtor[1]		
Commonwealth of Independent States[3]				
Armenia		*		
Azerbaijan	*			
Belarus		*		
Georgia		*		
Kazakhstan		*		
Kyrgyz Republic		•		*
Moldova		*		*
Russia	*			
Tajikistan		*		*
Turkmenistan	*			
Ukraine		*		
Uzbekistan	*			*
Emerging and Developing Asia				
Bangladesh		•		*
Bhutan		•		*
Brunei Darussalam	*			
Cambodia		*		*
China	*			
Fiji		*		
India		*		
Indonesia		*		
Kiribati		*		*
Lao P.D.R.		*		*
Malaysia	*			
Maldives		•		
Marshall Islands		•		
Micronesia		•		
Mongolia		*		*
Myanmar		*		*
Nepal		*		*
Palau		*		
Papua New Guinea		*		*
Philippines	*			
Samoa		*		
Solomon Islands		*		*
Sri Lanka		*		
Thailand	*			
Timor-Leste	*			
Tonga		•		
Tuvalu		•		
Vanuatu		*		
Vietnam		*		*
Emerging and Developing Europe				
Albania		*		
Bosnia and Herzegovina		•		
Bulgaria		*		
Croatia		*		
Hungary		*		
Kosovo		*		
Lithuania		•		
FYR Macedonia		*		
Montenegro		*		
Poland		*		
Romania		*		
Serbia		*		
Turkey		*		
Latin America and the Caribbean				
Antigua and Barbuda		*		
Argentina		*		
The Bahamas		*		
Barbados		*		
Belize		*		
Bolivia	*		•	*
Brazil		*		
Chile		*		
Colombia		*		
Costa Rica		*		
Dominica		*		
Dominican Republic		*		
Ecuador		*		
El Salvador		*		
Grenada		*		
Guatemala		*		
Guyana		*	•	
Haiti		•	•	*
Honduras		*	•	*
Jamaica		*		
Mexico		*		
Nicaragua		•	•	*
Panama		*		
Paraguay		*		
Peru		*		
St. Kitts and Nevis		*		
St. Lucia		*		
St. Vincent and the Grenadines		*		
Suriname		•		
Trinidad and Tobago	*			
Uruguay		*		
Venezuela	*			

Table E. Emerging Market and Developing Economies by Region, Net External Position, and Status as Heavily Indebted Poor Countries and Low-Income Developing Countries *(concluded)*

	Net External Position		Heavily Indebted Poor Countries[2]	Low-Income Developing Countries
	Net Creditor	Net Debtor[1]		
Middle East, North Africa, Afghanistan, and Pakistan				
Afghanistan	*		•	*
Algeria	*			
Bahrain	*			
Djibouti		*		*
Egypt		*		
Iran	*			
Iraq	*			
Jordan		•		
Kuwait	*			
Lebanon		*		
Libya	*			
Mauritania		*	•	*
Morocco		*		
Oman	*			
Pakistan		•		
Qatar	*			
Saudi Arabia	*			
Sudan		*	*	*
Syria		•		
Tunisia		*		
United Arab Emirates	*			
Yemen		*		*
Sub-Saharan Africa				
Angola	*			
Benin		*	•	*
Botswana	*			
Burkina Faso		•	•	*
Burundi		*	•	*
Cabo Verde		*		
Cameroon		*	•	*
Central African Republic		•	•	*
Chad		*	*	*
Comoros		•	•	*
Democratic Republic of the Congo		*	•	*
Republic of Congo		•	•	*
Côte d'Ivoire		*	•	*
Equatorial Guinea		*		
Eritrea		•	*	*
Ethiopia		•	•	*
Gabon	*			
The Gambia		*	•	*
Ghana		*	•	*
Guinea		*	•	*
Guinea-Bissau		•	•	*
Kenya		*		*
Lesotho		*		*
Liberia		*	•	*
Madagascar		*	•	*
Malawi		*	•	*
Mali		*	•	*
Mauritius		*		
Mozambique		*	•	*
Namibia	*			
Niger		*	•	*
Nigeria	*			*
Rwanda		*	•	*
São Tomé and Príncipe		•	•	*
Senegal		*	•	*
Seychelles		•		
Sierra Leone		*	•	*
South Africa		*		
South Sudan[4]				*
Swaziland		*		
Tanzania		*	•	*
Togo		•	•	*
Uganda		*	•	*
Zambia		*	•	*
Zimbabwe		*		*

[1]Dot instead of star indicates that the net debtor's main external finance source is official financing.

[2]Dot instead of star indicates that the country has reached the completion point.

[3]Georgia and Turkmenistan, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.

[4]South Sudan is omitted from the net external position groups composite for lack of a fully developed database.

Table F. Economies with Exceptional Reporting Periods[1]

	National Account	Government Finance
The Bahamas		Jul/Jun
Bangladesh		Jul/Jun
Barbados		Apr/Mar
Belize		Apr/Mar
Bhutan	Jul/Jun	Jul/Jun
Botswana		Apr/Mar
Dominica		Jul/Jun
Egypt	Jul/Jun	Jul/Jun
Ethiopia	Jul/Jun	Jul/Jun
Haiti	Oct/Sep	Oct/Sep
Hong Kong SAR		Apr/Mar
India	Apr/Mar	Apr/Mar
Iran	Apr/Mar	Apr/Mar
Jamaica		Apr/Mar
Lao P.D.R.		Oct/Sep
Lesotho		Apr/Mar
Malawi		Jul/Jun
Marshall Islands	Oct/Sep	Oct/Sep
Micronesia	Oct/Sep	Oct/Sep
Myanmar	Apr/Mar	Apr/Mar
Namibia		Apr/Mar
Nepal	Aug/Jul	Aug/Jul
Pakistan	Jul/Jun	Jul/Jun
Palau	Oct/Sep	Oct/Sep
Qatar		Apr/Mar
Samoa	Jul/Jun	Jul/Jun
Singapore		Apr/Mar
St. Lucia		Apr/Mar
Swaziland		Apr/Mar
Thailand		Oct/Sep
Tonga		Jul/Jun
Trinidad and Tobago		Oct/Sep

[1]Unless indicated otherwise, all data refer to calendar years.

Table G. Key Data Documentation

		National Accounts					Prices (CPI)	
Country	Currency	Historical Data Source[1]	Latest Actual Data	Base Year[2]	System of National Accounts	Use of Chain-Weighted Methodology[3]	Historical Data Source[1]	Latest Actual Data
Afghanistan	Afghan Afghani	NSO	2013	2002	SNA 1993		NSO	2013
Albania	Albanian lek	IMF staff	2012	1996	SNA 1993	From 1996	NSO	2013
Algeria	Algerian dinar	NSO	2013	2001	SNA 1993	From 2005	NSO	2012
Angola	Angolan kwanza	NSO	2012	2002	ESA 1995		CB	2013
Antigua and Barbuda	Eastern Caribbean dollar	CB	2013	2006[6]	SNA 1993		NSO	2013
Argentina	Argentine peso	MEP	2013	2004	SNA 2008		NSO	2012
Armenia	Armenian dram	NSO	2013	2005	SNA 1993		NSO	2013
Australia	Australian dollar	NSO	2013	2011/12	SNA 2008	From 1980	NSO	2013
Austria	Euro	NSO	2013	2005	ESA 1995	From 1988	NSO	2013
Azerbaijan	Azerbaijan manat	NSO	2013	2003	SNA 1993	From 1994	NSO	2013
The Bahamas	Bahamian dollar	NSO	2013	2006	SNA 1993		NSO	2013
Bahrain	Bahrain dinar	MoF	2013	2010	SNA 2008		NSO	2012
Bangladesh	Bangladesh taka	NSO	2013	2005	SNA 1993		NSO	2013
Barbados	Barbados dollar	NSO and CB	2012	1974[6]	SNA 1993		CB	2013
Belarus	Belarusian rubel	NSO	2013	2009	ESA 1995	From 2005	NSO	2013
Belgium	Euro	CB	2013	2011	ESA 1995	From 1995	CB	2013
Belize	Belize dollar	NSO	2013	2000	SNA 1993		NSO	2013
Benin	CFA franc	NSO	2011	2000	SNA 1993		NSO	2011
Bhutan	Bhutanese ngultrum	NSO	2011/12	2000[6]	Other		CB	2013
Bolivia	Bolivian boliviano	NSO	2012	1990	Other		NSO	2013
Bosnia and Herzegovina	Convertible marka	NSO	2012	2010	ESA 1995	From 2000	NSO	2013
Botswana	Botswana pula	NSO	2012	2006	SNA 1993		NSO	2013
Brazil	Brazilian real	NSO	2013	1995	SNA 1993		NSO	2013
Brunei Darussalam	Brunei dollar	NSO and PMO	2012	2000	SNA 1993		NSO and PMO	2013
Bulgaria	Bulgarian lev	NSO	2013	2005	ESA 1995	From 2005	NSO	2013
Burkina Faso	CFA franc	NSO and MEP	2011	1999	SNA 1993		NSO	2013
Burundi	Burundi franc	NSO	2010	2005	SNA 2008		NSO	2012
Cabo Verde	Cabo Verde escudo	NSO	2012	2007	SNA 1993	From 2011	NSO	2013
Cambodia	Cambodian riel	NSO	2013	2000	SNA 1993		NSO	2013
Cameroon	CFA franc	NSO	2013	1990	SNA 1993		NSO	2012
Canada	Canadian dollar	NSO	2013	2007	SNA 2008	From 1980	NSO	2013
Central African Republic	CFA franc	NSO	2012	2005	SNA 1993		NSO	2012
Chad	CFA franc	CB	2013	2005	Other		NSO	2013
Chile	Chilean peso	CB	2013	2008	SNA 2008	From 2003	NSO	2013
China	Chinese yuan	NSO	2013	1990[6]	SNA 2008		NSO	2013
Colombia	Colombian peso	NSO	2013	2005	Other	From 2000	NSO	2013
Comoros	Comorian franc	NSO	2013	2000	Other		NSO	2013
Democratic Republic of the Congo	Congo franc	NSO	2006	2005	SNA 1993		CB	2013
Republic of Congo	CFA franc	NSO	2013	1990	SNA 1993		NSO	2013
Costa Rica	Costa Rican colón	CB	2013	1991	SNA 1993		CB	2013

Table G. Key Data Documentation *(continued)*

	Government Finance					Balance of Payments		
Country	Historical Data Source[1]	Latest Actual Data	Statistics Manual in Use at Source	Subsectors Coverage[4]	Accounting Practice[5]	Historical Data Source[1]	Latest Actual Data	Statistics Manual in Use at Source
Afghanistan	MoF	2013	2001	CG	C	NSO	2013	BPM 5
Albania	IMF staff	2012	1986	CG,LG,SS	Other	CB	2012	BPM 5
Algeria	CB	2012	1986	CG	C	CB	2013	BPM 5
Angola	MoF	2013	2001	CG,SS	Other	CB	2013	BPM 5
Antigua and Barbuda	MoF	2013	2001	CG	C	CB	2013	BPM 5
Argentina	MEP	2013	1986	CG,SG,LG,SS	C	MEP	2013	BPM 5
Armenia	MoF	2013	2001	CG	C	CB	2013	BPM 5
Australia	MoF	2012/13	2001	CG,SG,LG,TG	A	NSO	2013	BPM 6
Austria	NSO	2013	2001	CG,SG,LG,SS	A	NSO	2013	BPM 5
Azerbaijan	MoF	2012	Other	CG	C	CB	2012	BPM 5
The Bahamas	MoF	2012/13	2001	CG	C	CB	2013	BPM 5
Bahrain	MoF	2012	1986	CG,SG,LG,SS	C	CB	2012	BPM 5
Bangladesh	MoF	2012/13	Other	CG	C	CB	2013	BPM 4
Barbados	MoF	2013/14	1986	CG,SS,NFPC	C	CB	2012	BPM 5
Belarus	MoF	2013	2001	CG,SG,LG,SS	C	CB	2013	BPM 6
Belgium	CB	2013	2001	CG,SG,LG,SS	A	CB	2013	BPM 5
Belize	MoF	2013/14	1986	CG,MPC	C	CB	2013	BPM 5
Benin	MoF	2011	2001	CG	C	CB	2010	BPM 5
Bhutan	MoF	2012/13	1986	CG	C	CB	2011/12	BPM 6
Bolivia	MoF	2013	2001	CG,LG,SS,MPC, NMPC,NFPC	C	CB	2013	BPM 5
Bosnia and Herzegovina	MoF	2013	2001	CG,SG,LG,SS	A	CB	2012	BPM 6
Botswana	MoF	2011/12	1986	CG	C	CB	2012	BPM 5
Brazil	MoF	2013	2001	CG,SG,LG,SS, MPC,NFPC	C	CB	2013	BPM 5
Brunei Darussalam	MoF	2013	Other	CG, BCG	C	MEP	2012	BPM 5
Bulgaria	MoF	2012	2001	CG,SG,LG,SS	C	CB	2013	BPM 6
Burkina Faso	MoF	2013	2001	CG	C	CB	2012	BPM 5
Burundi	MoF	2012	2001	CG	A	CB	2011	BPM 6
Cabo Verde	MoF	2013	2001	CG,SS	A	CB	2013	BPM 5
Cambodia	MoF	2013	2001	CG,LG	C	CB	2013	BPM 5
Cameroon	MoF	2013	2001	CG,NFPC	C	MoF	2013	BPM 5
Canada	NSO and OECD	2013	2001	CG,SG,LG,SS	A	NSO	2013	BPM 6
Central African Republic	MoF	2012	2001	CG	C	CB	2012	BPM 5
Chad	MoF	2012	1986	CG,NFPC	C	CB	2012	BPM 5
Chile	MoF	2013	2001	CG,LG	A	CB	2013	BPM 6
China	MoF	2013	1986	CG,SG,LG	C	SAFE	2013	BPM 6
Colombia	MoF	2012	2001	CG,LG,SS	C/A	CB and NSO	2013	BPM 5
Comoros	MoF	2013	1986	CG	C/A	CB and IMF staff	2013	BPM 5
Democratic Republic of the Congo	MoF	2013	2001	CG,SG,LG	A	CB	2013	BPM 5
Republic of Congo	MoF	2013	2001	CG	A	CB	2008	BPM 5
Costa Rica	MoF and CB	2013	1986	CG,SS,NFPC	C	CB	2013	BPM 5

Table G. Key Data Documentation *(continued)*

		National Accounts					Prices (CPI)	
Country	Currency	Historical Data Source[1]	Latest Actual Data	Base Year[2]	System of National Accounts	Use of Chain-Weighted Methodology[3]	Historical Data Source[1]	Latest Actual Data
Côte d'Ivoire	CFA franc	MEP	2011	2009	SNA 1993		MoF	2011
Croatia	Croatian kuna	NSO	2012	2005	ESA 1995		NSO	2012
Cyprus	Euro	Eurostat	2013	2005	ESA 1995	From 1995	Eurostat	2013
Czech Republic	Czech koruna	NSO	2013	2005	ESA 1995	From 1995	NSO	2013
Denmark	Danish krone	NSO	2013	2005	ESA 1995	From 1980	NSO	2013
Djibouti	Djibouti franc	NSO	1999	1990	Other		NSO	2012
Dominica	Eastern Caribbean dollar	NSO	2013	2006	SNA 1993		NSO	2013
Dominican Republic	Dominican peso	CB	2013	2007	SNA 2008	From 2007	CB	2013
Ecuador	U.S. dollar	CB	2013	2007	SNA 1993		NSO and CB	2013
Egypt	Egyptian pound	MEP	2012/13	2001/02	SNA 1993		NSO	2013/14
El Salvador	U.S. dollar	CB	2013	1990	Other		NSO	2013
Equatorial Guinea	CFA franc	MEP and CB	2013	2006	SNA 1993		MEP	2013
Eritrea	Eritrean nakfa	IMF staff	2006	2000	SNA 1993		NSO	2009
Estonia	Euro	NSO	2013	2010	ESA 2010	From 1995	NSO	2013
Ethiopia	Ethiopian birr	NSO	2012/13	2010/11	SNA 1993		NSO	2013
Fiji	Fiji dollar	NSO	2012	2008[6]	SNA 1993/ 2008		NSO	2013
Finland	Euro	NSO	2013	2000	ESA 2010	From 1980	NSO and Eurostat	2013
France	Euro	NSO	2013	2010	ESA 2010	From 1980	NSO	2013
Gabon	CFA franc	MoF	2010	2001	SNA 1993		MoF	2013
The Gambia	Gambian dalasi	NSO	2012	2004	SNA 1993		NSO	2013
Georgia	Georgian lari	NSO	2013	2000	SNA 1993	From 1996	NSO	2013
Germany	Euro	NSO	2013	2005	ESA 1995/ 2010	From 1991	NSO	2013
Ghana	Ghanaian cedi	NSO	2012	2006	SNA 1993		NSO	2013
Greece	Euro	NSO	2013	2005	ESA 1995	From 2000	NSO	2013
Grenada	Eastern Caribbean dollar	NSO	2013	2006	SNA 1993		NSO	2013
Guatemala	Guatemalan quetzal	CB	2013	2001	SNA 1993	From 2001	NSO	2013
Guinea	Guinean franc	NSO	2009	2003	SNA 1993		NSO	2013
Guinea-Bissau	CFA franc	NSO	2011	2005	SNA 1993		NSO	2011
Guyana	Guyana dollar	NSO	2012	2006[6]	SNA 1993		NSO	2012
Haiti	Haitian gourde	NSO	2012/13	1986/87	SNA 2008		NSO	2013
Honduras	Honduran lempira	CB	2013	2000	SNA 1993		CB	2013
Hong Kong SAR	Hong Kong dollar	NSO	2013	2011	SNA 2008	From 1980	NSO	2013
Hungary	Hungarian forint	NSO	2013	2005	ESA 1995	From 2005	NSO	2013
Iceland	Icelandic króna	NSO	2013	2000	ESA 1995	From 1990	NSO	2013
India	Indian rupee	NSO	2013/14	2004/05	SNA 1993		NSO	2013/14
Indonesia	Indonesian rupiah	NSO	2013	2000	SNA 1993		CEIC	2013
Iran	Iranian rial	CB	2012/13	2004/05	SNA 1993		CB	2013
Iraq	Iraqi dinar	NSO	2013	1988	Other		NSO	2013
Ireland	Euro	NSO	2013	2012	ESA 2010	From 2012	NSO	2013

Table G. Key Data Documentation *(continued)*

	Government Finance					Balance of Payments		
Country	Historical Data Source[1]	Latest Actual Data	Statistics Manual in Use at Source	Subsectors Coverage[4]	Accounting Practice[5]	Historical Data Source[1]	Latest Actual Data	Statistics Manual in Use at Source
Côte d'Ivoire	MoF	2011	1986	CG	A	CB	2009	BPM 6
Croatia	MoF	2013	2001	CG,LG	C	CB	2013	BPM 5
Cyprus	Eurostat	2013	ESA 1995	CG,LG,SS	C	Eurostat	2013	BPM 5
Czech Republic	MoF	2013	2001	CG,LG,SS	A	NSO	2013	BPM 5
Denmark	NSO	2013	2001	CG,SG,LG,SS	A	NSO	2013	BPM 5
Djibouti	MoF	2012	2001	CG	A	CB	2011	BPM 6
Dominica	MoF	2012/13	1986	CG	C	CB	2013	BPM 5
Dominican Republic	MoF	2013	2001	CG,SG,LG,SS	A	CB	2013	BPM 6
Ecuador	CB and MoF	2013	1986	SG,LG,SS,NFPC	C	CB	2013	BPM 5
Egypt	MoF	2012/13	2001	CG,SG,LG,SS,MPC	C	CB	2012/13	BPM 5
El Salvador	MoF	2013	1986	CG,SG,LG,SS	C	CB	2013	BPM 6
Equatorial Guinea	MoF	2013	1986	CG	C	CB	2013	BPM 5
Eritrea	MoF	2008	2001	CG	C	CB	2008	BPM 5
Estonia	MoF	2013	1986/2001	CG,LG,SS	C	CB	2013	BPM 6
Ethiopia	MoF	2012/13	2001	CG	C	CB	2012/13	BPM 5
Fiji	MoF	2013	2001	CG	C	CB	2013	BPM 6
Finland	MoF	2013	2001	CG,LG,SS	A	CB	2013	BPM 6
France	NSO	2013	2001	CG,LG,SS	A	CB	2013	BPM 6
Gabon	IMF staff	2013	2001	CG	A	CB	2006	BPM 5
The Gambia	MoF	2013	2001	CG	C	CB and IMF staff	2012	BPM 4
Georgia	MoF	2013	2001	CG,LG	C	NSO and CB	2013	BPM 5
Germany	NSO and Eurostat	2013	2001	CG,SG,LG,SS	A	CB	2013	BPM 6
Ghana	MoF	2013	2001	CG,SG,LG	C	CB	2012	BPM 5
Greece	MoF	2013	1986	CG,LG,SS	A	CB	2013	BPM 5
Grenada	MoF	2013	2001	CG	C	CB	2013	BPM 5
Guatemala	MoF	2013	1986	CG	C	CB	2013	BPM 5
Guinea	MoF	2012	2001	CG	Other	CB and MEP	IMF staff	BPM 6
Guinea-Bissau	MoF	2011	2001	CG	A	CB	2011	BPM 6
Guyana	MoF	2012	2001	CG,SS	C	CB	2012	BPM 5
Haiti	MoF	2012/13	2001	CG	C	CB	2013	BPM 5
Honduras	MoF	2013	1986	CG,LG,SS,NFPC	A	CB	2013	BPM 5
Hong Kong SAR	NSO	2012/13	2001	CG	C	NSO	2013	BPM 6
Hungary	MEP and Eurostat	2013	2001	CG,LG,SS,NMPC	A	CB	2013	BPM 6
Iceland	NSO	2013	2001	CG,LG	A	CB	2013	BPM 5
India	MoF	2012/13	2001	CG,SG	A	CB	2013/14	BPM 6
Indonesia	MoF	2013	2001	CG,LG	C	CEIC	2013	BPM 5
Iran	MoF	2012/13	2001	CG	C	CB	2013	BPM 5
Iraq	MoF	2013	2001	CG	C	CB	2012	BPM 5
Ireland	MoF	2013	2001	CG,LG,SS	A	NSO	2013	BPM 6

Table G. Key Data Documentation *(continued)*

		National Accounts					Prices (CPI)	
Country	Currency	Historical Data Source[1]	Latest Actual Data	Base Year[2]	System of National Accounts	Use of Chain-Weighted Methodology[3]	Historical Data Source[1]	Latest Actual Data
Israel	Israeli shekel	NSO	2013	2010	SNA 2008	From 1995	Haver Analytics	2013
Italy	Euro	NSO	2013	2005	ESA 1995	From 1980	NSO	2013
Jamaica	Jamaica dollar	NSO	2013	2007	SNA 1993		NSO	2013
Japan	Japanese yen	Cabinet Office	2013	2005	SNA 1993	From 1980	MIAC	2013
Jordan	Jordanian dinar	NSO	2013	1994	Other		NSO	2013
Kazakhstan	Kazakhstani tenge	NSO	2013	2007	Other	From 1994	CB	2013
Kenya	Kenya shilling	NSO	2013	2009	SNA 1993		NSO	2013
Kiribati	Australian dollar	NSO	2009	2006	Other		NSO	2010
Korea	Korean won	CB	2013	2010	SNA 2008	From 1980	MoF	2013
Kosovo	Euro	NSO	2013	2013	Other		NSO	2013
Kuwait	Kuwaiti dinar	MEP and NSO	2013	2010	SNA 1993		NSO and MEP	2012
Kyrgyz Republic	Kyrgyz som	NSO	2013	1995	SNA 1993		NSO	2013
Lao P.D.R.	Lao kip	NSO	2013	2002	SNA 1993		NSO	2013
Latvia	Euro	NSO	2013	2010	ESA 1995	From 1995	Eurostat	2013
Lebanon	Lebanese pound	NSO	2011	2000	SNA 2008	From 2010	NSO	2013
Lesotho	Lesotho loti	NSO	2012	2004	Other		NSO	2013
Liberia	U.S. dollar	CB	2011	1992	SNA 1993		CB	2013
Libya	Libyan dinar	MEP	2012	2003	SNA 1993		NSO	2012
Lithuania	Lithuanian litas	NSO	2013	2005	ESA 1995	From 2005	NSO	2013
Luxembourg	Euro	NSO	2013	2005	ESA 1995	From 1995	NSO	2013
FYR Macedonia	Macedonian denar	NSO	2013	2005	SNA 1993		NSO	2013
Madagascar	Malagasy ariary	NSO	2010	2000	Other		NSO	2013
Malawi	Malawi kwacha	NSO	2009	2007	SNA 2008		NSO	2013
Malaysia	Malaysian ringgit	NSO	2013	2005	SNA 2008		NSO	2013
Maldives	Maldivian rufiyaa	MEP	2012	2003	SNA 1993		CB	2010
Mali	CFA franc	MoF	2011	1987	SNA 1993		MoF	2012
Malta	Euro	Eurostat	2013	2005	ESA 1995	From 2000	Eurostat	2013
Marshall Islands	U.S. dollar	NSO	2011/12	2003/04	Other		NSO	2013
Mauritania	Mauritanian ouguiya	NSO	2009	1998	SNA 1993		NSO	2012
Mauritius	Mauritian rupee	NSO	2013	2000	SNA 1993	From 1999	NSO	2013
Mexico	Mexican peso	NSO	2013	2008	SNA 1993		NSO	2013
Micronesia	U.S. dollar	NSO	2012	2004	Other		NSO	2012
Moldova	Moldovan leu	NSO	2013	1995	SNA 1993		NSO	2013
Mongolia	Mongolian togrog	NSO	2013	2005	SNA 1993		NSO	2013
Montenegro	Euro	NSO	2011	2006	ESA 1995		NSO	2013
Morocco	Moroccan dirham	NSO	2013	1998	SNA 1993	From 1998	NSO	2013
Mozambique	Mozambican metical	NSO	2013	2000	SNA 1993		NSO	2013
Myanmar	Myanmar kyat	MEP	2011/12	2010/11	Other		NSO	2013
Namibia	Namibia dollar	NSO	2011	2000	SNA 1993		NSO	2012
Nepal	Nepalese rupee	NSO	2013/14	2000/01	SNA 1993		CB	2013/14
Netherlands	Euro	NSO	2013	2010	ESA 2010	From 1980	NSO	2013
New Zealand	New Zealand dollar	NSO	2012/13	1995/96	Other	From 1987	NSO	2013
Nicaragua	Nicaraguan córdoba	IMF staff	2013	2006	SNA 1993	From 1994	CB	2013

Table G. Key Data Documentation *(continued)*

	Government Finance					Balance of Payments		
Country	Historical Data Source[1]	Latest Actual Data	Statistics Manual in Use at Source	Subsectors Coverage[4]	Accounting Practice[5]	Historical Data Source[1]	Latest Actual Data	Statistics Manual in Use at Source
Israel	MoF	2012	2001	CG,SS	A	Haver Analytics	2013	BPM 6
Italy	NSO	2013	2001	CG,SG,LG,SS	A	NSO	2013	BPM 5
Jamaica	MoF	2013/14	1986	CG	C	CB	2013	BPM 5
Japan	Cabinet Office	2012	2001	CG,LG,SS	A	CB	2013	BPM 6
Jordan	MoF	2013	2001	CG,NFPC	C	CB	2012	BPM 5
Kazakhstan	IMF staff	2013	2001	CG,LG	A	CB	2013	BPM 6
Kenya	MoF	2013	2001	CG	A	CB	2013	BPM 5
Kiribati	MoF	2010	1986/2001	CG,LG	C	NSO	2009	BPM 5
Korea	MoF	2012	2001	CG	C	CB	2013	BPM 6
Kosovo	MoF	2013	Other	CG,LG	C	CB	2013	BPM 5
Kuwait	MoF	2013	1986	CG	C/A	CB	2013	BPM 5
Kyrgyz Republic	MoF	2013	Other	CG,LG,SS	C	MoF	2013	BPM 5
Lao P.D.R.	MoF	2012/13	2001	CG	C	CB	2013	BPM 5
Latvia	MoF	2013	Other	CG,LG,SS,NFPC	C	CB	2013	BPM 5
Lebanon	MoF	2013	1986	CG	C	CB and IMF staff	2012	BPM 5
Lesotho	MoF	2012/13	2001	CG,LG	C	CB	2012	BPM 5
Liberia	MoF	2012	2001	CG	A	CB	2013	BPM 5
Libya	MoF	2012	1986	CG,SG,LG	C	CB	2012	BPM 5
Lithuania	MoF	2013	2001	CG,SG,LG,SS	A	CB	2013	BPM 6
Luxembourg	MoF	2013	2001	CG,LG,SS	A	NSO	2013	BPM 5
FYR Macedonia	MoF	2013	1986	CG,SG,SS	C	CB	2013	BPM 5
Madagascar	MoF	2012	1986	CG,LG	C	CB	2011	BPM 5
Malawi	MoF	2012/13	1986	CG	C	NSO	2012	BPM 5
Malaysia	MoF	2013	1986	CG,SG,LG	C	NSO	2013	BPM 6
Maldives	MoF and Treasury	2011	1986	CG	C	CB	2009	BPM 5
Mali	MoF	2012	2001	CG	C/A	CB	2011	BPM 5
Malta	Eurostat	2013	2001	CG,SG,SS	A	NSO	2013	BPM 5
Marshall Islands	MoF	2011/12	2001	CG,LG,SS	A	NSO	2012	Other
Mauritania	MoF	2012	1986	CG	C	CB	2009	BPM 5
Mauritius	MoF	2013	2001	CG,SG,LG,NFPC	C	CB	2013	BPM 5
Mexico	MoF	2013	2001	CG,SS,FPC,NFPC	C	CB	2013	BPM 5
Micronesia	MoF	2011/12	2001	CG,SG,LG,SS	Other	NSO	2012	Other
Moldova	MoF	2013	1986	CG,LG,SS	C	CB	2012	BPM 5
Mongolia	MoF	2013	2001	CG,SG,LG,SS	C	CB	2013	BPM 5
Montenegro	MoF	2013	1986	CG,LG,SS	C	CB	2012	BPM 5
Morocco	MEP	2013	2001	CG	A	FEO	2013	BPM 5
Mozambique	MoF	2013	2001	CG,SG	C/A	CB	2013	BPM 5
Myanmar	MoF	2011/12	2001	CG,NFPC	C/A	IMF staff	2012	Other
Namibia	MoF	2011/12	2001	CG	C	CB	2013	BPM 5
Nepal	MoF	2013/14	2001	CG	C	CB	2013/14	BPM 6
Netherlands	MoF	2013	2001	CG,LG,SS	A	CB	2012	BPM 5
New Zealand	MoF	2012/13	2001	CG	A	NSO	2013	BPM 5
Nicaragua	MoF	2013	1986	CG,LG,SS	C	IMF staff	2013	BPM 6

Table G. Key Data Documentation *(continued)*

		National Accounts					Prices (CPI)	
Country	Currency	Historical Data Source[1]	Latest Actual Data	Base Year[2]	System of National Accounts	Use of Chain-Weighted Methodology[3]	Historical Data Source[1]	Latest Actual Data
Niger	CFA franc	NSO	2012	2000	SNA 1993		NSO	2013
Nigeria	Nigerian naira	NSO	2013	2000	SNA 2008		NSO	2013
Norway	Norwegian krone	NSO	2013	2011	ESA 1995	From 1980	NSO	2013
Oman	Omani rial	NSO	2013	2010	SNA 1993		NSO	2013
Pakistan	Pakistan rupee	NSO	2013/14	2005/06	SNA 1968/ 1993		NSO	2013/14
Palau	U.S. dollar	MoF	2012	2005	Other		MoF	2011/12
Panama	U.S. dollar	NSO	2012	1996	SNA 1993		NSO	2013
Papua New Guinea	Papua New Guinea kina	NSO and MOF	2013	1998	SNA 1993		NSO	2013
Paraguay	Paraguayan guaraní	CB	2013	1994	SNA 1993		CB	2013
Peru	Peruvian nuevo sol	CB	2013	2007	SNA 1993		CB	2013
Philippines	Philippine peso	NSO	2013	2000	SNA 1993		NSO	2013
Poland	Polish zloty	NSO	2013	2005	Other	From 1995	NSO	2013
Portugal	Euro	NSO	2013	2006	ESA 1995	From 1980	NSO	2013
Qatar	Qatari riyal	NSO and MEP	2013	2004	SNA 1993		NSO	2013
Romania	Romanian leu	NSO and Eurostat	2013	2005	ESA 1995	From 2000	NSO	2013
Russia	Russian ruble	NSO	2013	2008	SNA 1993	From 1995	NSO	2013
Rwanda	Rwanda franc	MoF	2013	2011	SNA 1993		MoF	2013
Samoa	Samoa tala	NSO	2012/13	2009	SNA 1993		NSO	2012/13
San Marino	Euro	NSO	2011	2007	Other		NSO	2012
São Tomé and Príncipe	São Tomé and Príncipe dobra	NSO	2010	2000	SNA 1993		NSO	2013
Saudi Arabia	Saudi Arabian riyal	NSO and MEP	2013	1999	SNA 1993		NSO and MEP	2013
Senegal	CFA franc	NSO	2011	2000	SNA 1993		NSO	2011
Serbia	Serbian dinar	NSO	2013	2010	SNA 1993/ ESA 1995	From 2010	NSO	2013
Seychelles	Seychelles rupee	NSO	2012	2006	SNA 1993		NSO	2013
Sierra Leone	Sierra Leonean leone	NSO	2012	2006	SNA 1993	From 2010	NSO	2012
Singapore	Singapore dollar	NSO	2013	2010	SNA 1993	From 2010	NSO	2013
Slovak Republic	Euro	Eurostat	2013	2005	ESA 1995	From 1993	Eurostat	2013
Slovenia	Euro	NSO	2013	2000	ESA 1995	From 2000	NSO	2013
Solomon Islands	Solomon Islands dollar	CB	2011	2004	SNA 1993		NSO	2012
South Africa	South African rand	CB	2012	2005	SNA 1993		NSO	2013
South Sudan	South Sudanese pound	NSO	2011	2010	SNA 1993		NSO	2013
Spain	Euro	NSO	2013	2008	Other	From 1995	NSO	2013
Sri Lanka	Sri Lanka rupee	CB	2012	2002	SNA 1993		NSO	2012
St. Kitts and Nevis	Eastern Caribbean dollar	NSO	2013	2006[6]	SNA 1993		NSO	2013
St. Lucia	Eastern Caribbean dollar	NSO	2013	2006	SNA 1993		NSO	2013

Table G. Key Data Documentation *(continued)*

	Government Finance					Balance of Payments		
Country	Historical Data Source[1]	Latest Actual Data	Statistics Manual in Use at Source	Subsectors Coverage[4]	Accounting Practice[5]	Historical Data Source[1]	Latest Actual Data	Statistics Manual in Use at Source
Niger	MoF	2013	1986	CG	A	CB	2012	BPM 6
Nigeria	MoF	2012	2001	CG,SG,LG,NFPC	C	CB	2013	BPM 5
Norway	NSO and MoF	2013	2001	CG,SG,LG,SS	A	NSO	2013	BPM 6
Oman	MoF	2012	2001	CG	C	CB	2012	BPM 5
Pakistan	MoF	2013/14	1986	CG,SG,LG	C	CB	2013/14	BPM 5
Palau	MoF	2012	2001		Other	MoF	2012	BPM 6
Panama	MEP	2013	1986	CG,SG,LG,SS, NFPC	C	NSO	2013	BPM 5
Papua New Guinea	MoF	2013	1986	CG	C	CB	2013	BPM 5
Paraguay	MoF	2013	2001	CG,LG	C	CB	2013	BPM 5
Peru	MoF	2013	1986	CG,SG,LG,SS	C	CB	2013	BPM 5
Philippines	MoF	2013	2001	CG,LG,SS	C	CB	2013	BPM 6
Poland	MoF	2013	2001	CG,LG,SS	A	CB	2013	BPM 5
Portugal	NSO	2013	2001	CG,SG,LG,SS	A	CB	2013	BPM 5
Qatar	MoF	2012/13	1986		C	CB and IMF staff	2013	BPM 5
Romania	MoF	2013	1986	CG,LG,SS	C	CB	2013	BPM 5
Russia	MoF	2013	2001	CG,SG,SS	C/A	CB	2013	BPM 6
Rwanda	MoF	2013	2001	CG,SG,LG	C/A	CB	2013	BPM 5
Samoa	MoF	2010/11	2001	CG	A	CB	2012/13	BPM 6
San Marino	MoF	2012	Other	CG	Other	…	…	…
São Tomé and Príncipe	MoF and Customs	2013	2001	CG	C	CB	2013	BPM 5
Saudi Arabia	MoF	2013	1986	CG,SS	C	CB	2012	BPM 5
Senegal	MoF	2011	1986	CG	C	CB and IMF staff	2011	BPM 6
Serbia	MoF	2013	Other	SG,LG,SS	C	CB	2013	BPM 5
Seychelles	MoF	2013	1986	CG,SS	C	CB	2013	BPM 5
Sierra Leone	MoF	2012	1986	CG	C	CB	2012	BPM 5
Singapore	MoF	2011/12	2001	CG	C	NSO	2013	BPM 6
Slovak Republic	Eurostat	2013	Other	CG,LG,SS	A	CB	2013	BPM 5
Slovenia	MoF	2013	1986	CG,SG,LG,SS	C	NSO	2013	BPM 5
Solomon Islands	MoF	2012	1986	CG	C	CB	2012	BPM 5
South Africa	MoF	2012/13	2001	CG,SG,SS	C	CB	2012	BPM 5
South Sudan	MoF	2012	Other	CG	C	Other	2011	BPM 5
Spain	MoF and Eurostat	2013	Other	CG,SG,LG,SS	A	CB	2013	BPM 5
Sri Lanka	MoF	2011	2001	CG,SG,LG,SS	C	CB	2011	BPM 5
St. Kitts and Nevis	MoF	2013	2001	CG	C	CB	2013	BPM 5
St. Lucia	MoF	2012/13	1986	CG	C	CB	2013	BPM 5

Table G. Key Data Documentation *(continued)*

		National Accounts					Prices (CPI)	
Country	Currency	Historical Data Source[1]	Latest Actual Data	Base Year[2]	System of National Accounts	Use of Chain-Weighted Methodology[3]	Historical Data Source[1]	Latest Actual Data
St. Vincent and the Grenadines	Eastern Caribbean dollar	NSO	2013	2006[6]	SNA 1993		NSO	2013
Sudan	Sudanese pound	NSO	2010	2007	Other		NSO	2010
Suriname	Surinamese dollar	NSO	2011	2007	SNA 1993		NSO	2013
Swaziland	Swaziland lilangeni	NSO	2010	2000	SNA 1993		NSO	2013
Sweden	Swedish krona	NSO	2013	2013	ESA 1995	From 1993	NSO	2013
Switzerland	Swiss franc	NSO	2013	2005	ESA 1995	From 1980	NSO	2013
Syria	Syrian pound	NSO	2010	2000	SNA 1993		NSO	2011
Taiwan Province of China	New Taiwan dollar	NSO	2013	2006	SNA 2008		NSO	2013
Tajikistan	Tajik somoni	NSO	2012	1995	SNA 1993		NSO	2012
Tanzania	Tanzania shilling	NSO	2012	2001	SNA 1993		NSO	2013
Thailand	Thai baht	NESDB	2013	1988	SNA 1993		MoC	2013
Timor-Leste	U.S. dollar	MoF	2011	2010[6]	Other		NSO	2013
Togo	CFA franc	NSO	2012	2000	SNA 1993		NSO	2013
Tonga	Tongan pa'anga	CB	2012	2010/11	SNA 1993		CB	2013
Trinidad and Tobago	Trinidad and Tobago dollar	NSO	2012	2000	SNA 1993		NSO	2013
Tunisia	Tunisian dinar	NSO	2012	2004	SNA 1993	From 2009	NSO	2012
Turkey	Turkish lira	NSO	2013	1998	SNA 1993/ ESA 1995		NSO	2013
Turkmenistan	New Turkmen manat	NSO	2012	2005	SNA 1993	From 2000	NSO	2012
Tuvalu	Australian dollar	PFTAC advisors	2012	2005	Other		NSO	2013
Uganda	Uganda shilling	NSO	2013	2002	SNA 1993		CB	2013/14
Ukraine	Ukrainian hryvnia	NSO	2013	2007	SNA 1993/ ESA 1995	From 2005	NSO	2013
United Arab Emirates	U.A.E. dirham	NSO	2012	2007	SNA 1993		NSO	2012
United Kingdom	Pound sterling	NSO	2013	2010	ESA 1995/ 2010	From 1980	NSO	2013
United States	U.S. dollar	NSO	2013	2009	Other	From 1980	NSO	2013
Uruguay	Uruguayan peso	CB	2012	2005	SNA 1993		NSO	2013
Uzbekistan	Uzbek sum	NSO	2012	1995	SNA 1993		NSO	2012
Vanuatu	Vanuatu vatu	NSO	2012	2006	SNA 1993		NSO	2013
Venezuela	Venezuelan bolívar fuerte	CB	2013	1997	SNA 2008		CB	2013
Vietnam	Vietnamese dong	NSO	2013	2010	SNA 1993		NSO	2013
Yemen	Yemeni rial	IMF staff	2008	1990	SNA 1993		NSO and CB	2009
Zambia	Zambian kwacha	NSO	2013	2010	SNA 1993		NSO	2013
Zimbabwe	U.S. dollar	NSO	2012	2009	Other		NSO	2013

Table G. Key Data Documentation *(concluded)*

Country	Government Finance					Balance of Payments		
	Historical Data Source[1]	Latest Actual Data	Statistics Manual in Use at Source	Subsectors Coverage[4]	Accounting Practice[5]	Historical Data Source[1]	Latest Actual Data	Statistics Manual in Use at Source
St. Vincent and the Grenadines	MoF	2013	1986	CG	C	CB	2013	BPM 5
Sudan	MoF	2011	2001	CG	A	CB	2011	BPM 5
Suriname	MoF	2012	1986	CG	C	CB	2013	BPM 5
Swaziland	MoF	2012/13	2001	CG,SG,LG,SS	A	CB	2012	BPM 5
Sweden	MoF	2013	2001	CG,SG,LG,SS	A	NSO	2013	BPM 6
Switzerland	MoF	2011	2001	CG,LG,SS	A	CB	2013	BPM 6
Syria	MoF	2009	1986	CG	C	CB	2009	BPM 5
Taiwan Province of China	MoF	2012	1986	CG,LG,SS	A	CB	2013	BPM 6
Tajikistan	MoF	2012	1986	CG,LG,SS	C	CB	2011	BPM 5
Tanzania	MoF	2013	2001	CG,LG	C	CB	2011	BPM 5
Thailand	MoF	2012/13	2001	CG,LG	A	CB	2013	BPM 6
Timor-Leste	MoF	2012	2001	CG	C	CB	2013	BPM 5
Togo	MoF	2013	2001	CG	C	CB	2012	BPM 5
Tonga	CB and MoF	2012	2001	CG	C	CB and NSO	2012	BPM 5
Trinidad and Tobago	MoF	2012/13	1986	CG,NFPC	C	CB and NSO	2012	BPM 5
Tunisia	MoF	2012	1986	CG	C	CB	2012	BPM 5
Turkey	MoF	2013	2001	CG,SG,LG,SS	A	CB	2013	BPM 5
Turkmenistan	MoF	2013	1986	CG,LG	C	NSO and IMF staff	2012	BPM 5
Tuvalu	IMF staff	2013	Other	CG	C/A	IMF staff	2012	BPM 6
Uganda	MoF	2013	2001	CG	C	CB	2013	BPM 6
Ukraine	MoF	2013	2001	CG,SG,LG,SS	C	CB	2013	BPM 5
United Arab Emirates	MoF	2012	1986	CG,SG	C	CB	2012	BPM 5
United Kingdom	NSO	2013	2001	CG,LG	A	NSO	2013	BPM 6
United States	BEA	2013	2001	CG,SG,LG	A	NSO	2013	BPM 6
Uruguay	MoF	2012	1986	CG,LG,SS,MPC, NFPC	A	CB	2012	BPM 5
Uzbekistan	MoF	2012	Other	CG,SG,LG,SS	C	MEP	2012	BPM 5
Vanuatu	MoF	2013	2001	CG	C	CB	2013	BPM 6
Venezuela	MoF	2010	2001	CG,LG,SS,NFPC	C	CB	2012	BPM 5
Vietnam	MoF	2013	2001	CG,SG,LG	C	CB	2013	BPM 5
Yemen	MoF	2009	2001	CG,LG	C	IMF staff	2009	BPM 5
Zambia	MoF	2013	1986	CG	C	CB	2013	BPM 6
Zimbabwe	MoF	2013	1986	CG	C	CB and MoF	2013	BPM 4

Note: BPM = *Balance of Payments Manual* (number in parentheses following abbreviation signifies edition); CPI = consumer price index; ESA = European System of National Accounts; SNA = System of National Accounts.

[1]BEA = U.S. Bureau of Economic Analysis; CB = Central Bank; FEO = Foreign Exchange Office; IFS = IMF, *International Financial Statistics*; MEP = Ministry of Economy and/or Planning; MIAC = Ministry of Internal Affairs and Communications; MoC = Ministry of Commerce; MoF = Ministry of Finance; NESDB = National Economic and Social Development Board; NSO = National Statistics Office; OECD = Organisation for Economic Co-operation and Development; PFTAC = Pacific Financial Technical Assistance Centre; PMO = Prime Minister's Office; SAFE = State Administration of Foreign Exchange.

[2]National accounts base year is the period with which other periods are compared and the period for which prices appear in the denominators of the price relationships used to calculate the index.

[3]Use of chain-weighted methodology allows countries to measure GDP growth more accurately by reducing or eliminating the downward biases in volume series built on index numbers that average volume component using weights from a year in the moderately distant past.

[4]For some countries, the structures of government consist of a broader coverage than specified for the general government. Coverage: BCG = Budgetary Central Government; CG = Central Government; LG = Local Government; MPC = Monetary Public Corporation, including Central Bank; NFPC = Nonfinancial Public Corporations; NMPC = Nonmonetary Financial Public Corporations; SG = State Government; SS = Social Security Funds; TG = Territorial Governments.

[5]Accounting Standard: A = Accrual; C = Cash.

[6]Nominal GDP is not measured in the same way as real GDP.

Box A1. Economic Policy Assumptions Underlying the Projections for Selected Economies

Fiscal policy assumptions

The short-term fiscal policy assumptions used in the *World Economic Outlook* (WEO) are based on officially announced budgets, adjusted for differences between the national authorities and the IMF staff regarding macroeconomic assumptions and projected fiscal outturns. The medium-term fiscal projections incorporate policy measures that are judged likely to be implemented. For cases in which the IMF staff has insufficient information to assess the authorities' budget intentions and prospects for policy implementation, an unchanged structural primary balance is assumed unless indicated otherwise. Specific assumptions used in regard to some of the advanced economies follow. (See also Tables B5 to B9 in the online section of the Statistical Appendix for data on fiscal net lending/borrowing and structural balances.)[1]

Argentina: The fiscal forecast is based on the projections for GDP growth, exports, and imports and the nominal exchange rate.

Australia: Fiscal projections are based on the 2014–15 budget, Australian Bureau of Statistics, and IMF staff projections.

Austria: Projections take into account the authorities' medium-term fiscal framework, as well as associated further implementation needs and risks. For 2014, the creation of a defeasance structure for Hypo Alpe Adria is assumed to increase the general-government-debt-to-GDP ratio by 5½ percentage points and the deficit by 1.2 percentage points.

Belgium: Projections reflect the authorities' 2014 budget and the 2014–17 Stability Programme objectives, adjusted for differences in the IMF staff's macroeconomic framework and assumptions about fiscal developments in the federal, regional, and local governments.

Brazil: For 2013, preliminary outturn estimates are based on the information available as of August 2014. Projections for 2014 take into account the Third Bimonthly Report adjustments to the original budget (February 2014 presidential decree). In outer years, the IMF staff assumes adherence to the announced primary target.

Canada: Projections use the baseline forecasts in the Economic Action Plan 2014 (the fiscal year 2014/15 budget) and 2014 provincial budgets as available. The IMF staff makes adjustments to this forecast for differences in macroeconomic projections. The IMF staff forecast also incorporates the most recent data releases from Statistics Canada's Canadian System of National Economic Accounts, including federal, provincial, and territorial budgetary outturns through the end of the fourth quarter of 2013.

Chile: Projections are based on the authorities' budget projections, adjusted to reflect the IMF staff's projections for GDP and copper prices. Projections also include the official yield estimate of the tax reform submitted to Congress in April 2014.

China: The pace of fiscal consolidation is likely to be more gradual, reflecting reforms to strengthen social safety nets and the social security system announced as part of the Third Plenum reform agenda.

Denmark: Projections for 2013–15 are aligned with the latest official budget estimates and the underlying economic projections, adjusted where appropriate for the IMF staff's macroeconomic assumptions. For 2016–19, the projections incorporate key features of the medium-term fiscal plan as embodied in the authorities' 2013 Convergence Programme submitted to the European Union (EU).

France: Projections for 2014 reflect the budget law and measures announced in the 2014 Stability Programme. For 2015–17, they are based on the 2013–17 multiyear budget and the April 2014 stability plan, adjusted for differences in assumptions on macro and financial variables, and revenue projections. Historical fiscal data were revised following a May 15, 2014, revision by the statistical institute of both national and fiscal accounts. Fiscal data for 2013 reflect the preliminary outturn published by the statistical institute in May 2014.

[1] The output gap is actual minus potential output, as a percent of potential output. Structural balances are expressed as a percent of potential output. The structural balance is the actual net lending/borrowing minus the effects of cyclical output from potential output, corrected for one-time and other factors, such as asset and commodity prices and output composition effects. Changes in the structural balance consequently include effects of temporary fiscal measures, the impact of fluctuations in interest rates and debt service costs, and other noncyclical fluctuations in net lending/borrowing. The computations of structural balances are based on IMF staff estimates of potential GDP and revenue and expenditure elasticities. (See Annex I of the October 1993 WEO.) Net debt is calculated as gross debt minus financial assets corresponding to debt instruments. Estimates of the output gap and of the structural balance are subject to significant margins of uncertainty.

Box A1 *(continued)*

Germany: The IMF staff's projections for 2014 and beyond reflect the authorities' adopted core federal government budget plan, adjusted for the differences in the IMF staff's macroeconomic framework and assumptions about fiscal developments in state and local governments, the social insurance system, and special funds. The estimate of gross debt includes portfolios of impaired assets and noncore business transferred to institutions that are winding up, as well as other financial sector and EU support operations.

Greece: Fiscal projections for 2014 and the medium term are consistent with the policies discussed between the IMF staff and the authorities in the context of the Extended Fund Facility.

Hong Kong SAR: Projections are based on the authorities' medium-term fiscal projections.

Hungary: Fiscal projections include IMF staff projections of the macroeconomic framework and of the impact of recent legislative measures, as well as fiscal policy plans announced in the 2014 budget.

India: Historical data are based on budgetary execution data. Projections are based on available information on the authorities' fiscal plans, with adjustments for IMF staff assumptions. Subnational data are incorporated with a lag of up to two years; general government data are thus finalized well after central government data. IMF and Indian presentations differ, particularly regarding divestment and license auction proceeds, net versus gross recording of revenues in certain minor categories, and some public sector lending.

Indonesia: IMF projections for 2014–18 are based on a gradual increase in administrative fuel prices from 2015, the introduction beginning in 2014 of new social protections, and moderate tax policy and administration reforms.

Ireland: Fiscal projections are based on the 2014 budget, adjusted for differences between the IMF staff's macroeconomic projections and those of the Irish authorities.

Italy: Fiscal projections incorporate the government's announced fiscal policy, as outlined in the 2014 budget plan, adjusted for different growth outlooks and estimated impact of measures. The fiscal impact of the personal income tax credit is also included. Estimates of the cyclically adjusted balance include the expenditures to clear capital arrears in 2013, which are excluded from the structural balance. After 2014, the IMF staff projects convergence to a structural balance in line with Italy's fiscal rule, which implies corrective measures in some years, as yet unidentified.

Japan: The projections include fiscal measures already announced by the government, including consumption tax increases, earthquake reconstruction spending, and the stimulus package.

Korea: The medium-term forecast incorporates the government's announced medium-term consolidation path.

Mexico: Fiscal projections for 2014 are broadly in line with the approved budget; projections for 2014 onward assume compliance with rules established in the fiscal responsibility law.

Netherlands: Fiscal projections for the period 2014–19 are based on the authorities' Bureau for Economic Policy Analysis budget projections, after differences in macroeconomic assumptions are adjusted for. Historical data were revised following the June 2014 Central Bureau of Statistics release of revised macro data because of the adoption of the European System of National and Regional Accounts (ESA 2010) and the revisions of data sources.

New Zealand: Fiscal projections are based on the authorities' Budget Economic and Fiscal Update 2014 and on IMF staff estimates.

Portugal: For 2014, the general government fiscal balance projection does not include one-off transactions arising from banking support and other operations related to government-owned enterprises, pending decisions on their statistical classification by the Instituto Nacional de Estatística (INE)/Eurostat. Projections for 2014–15 remain consistent with the authorities' EU budgetary commitments, subject to additional measures to be approved in the forthcoming 2015 budget; projections thereafter are based on IMF staff estimates, under the assumption of unchanged policies.

Russia: Projections for 2014–19 are based on the oil-price-based fiscal rule introduced in December 2012, with adjustments by the IMF staff.

Saudi Arabia: The authorities base their budget on a conservative assumption for oil prices, with adjustments to expenditure allocations considered in the event that revenues exceed budgeted amounts. IMF staff projections of oil revenues are based on WEO baseline oil prices. On the expenditure side, wage bill estimates incorporate 13th-month pay awards every three years in accordance with the lunar calendar;

Box A1 *(continued)*

capital spending estimates over the medium term are in line with the authorities' priorities established in the national development plans.

Singapore: For fiscal year 2014/15, projections are based on budget numbers. For the remainder of the projection period, the IMF staff assumes unchanged policies.

South Africa: Fiscal projections are based on the authorities' 2014 Budget Review.

Spain: For 2013 and beyond, fiscal projections are based on the measures specified in the Stability Programme Update 2014–17; the revised fiscal policy recommendations by the European Council in June 2013; the 2014 budget plan issued in October 2013; and the 2014 budget, approved in December 2013.

Sweden: Fiscal projections are broadly in line with the authorities' projections based on the 2014 Spring Fiscal Policy Bill. The impact of cyclical developments on the fiscal accounts is calculated using the Organisation for Economic Co-operation and Development's latest semielasticity.

Switzerland: Projections for 2012–19 are based on IMF staff calculations, which incorporate measures to restore balance in the federal accounts and strengthen social security finances.

Turkey: Fiscal projections assume that both current and capital spending will be in line with the authorities' 2013–15 Medium-Term Programme based on current trends and policies.

United Kingdom: Fiscal projections are based on the U.K. Treasury's 2014 budget, published in March 2014. However, on the revenue side, the authorities' projections are adjusted for differences between IMF staff forecasts of macroeconomic variables (such as GDP growth) and the forecasts of these variables assumed in the authorities' fiscal projections. In addition, IMF staff projections exclude the temporary effects of financial sector interventions and the effect on public sector net investment during 2012–13 of transferring assets from the Royal Mail Pension Plan to the public sector. Real government consumption and investment are part of the real GDP path, which, according to the IMF staff, may or may not be the same as projected by the U.K. Office for Budget Responsibility. Transfers of profits from the Bank of England's Asset Purchase Facility affect general government net interest payments. The timing of these payments can create differences between fiscal year primary balances published by the authorities and calendar year balances shown in the WEO.

United States: Fiscal projections are based on the August 2014 Congressional Budget Office baseline adjusted for the IMF staff's policy and macroeconomic assumptions. The baseline incorporates the key provisions of the Bipartisan Budget Act of 2013, including a partial rollback of the sequester spending cuts in fiscal years 2014 and 2015. The rollback is fully offset by savings elsewhere in the budget. In fiscal years 2016 through 2021, the IMF staff assumes that the sequester cuts will continue to be partially replaced, in proportions similar to those agreed upon under the Bipartisan Budget Act for fiscal years 2014 and 2015, with back-loaded measures generating savings in mandatory programs and additional revenues. Over the medium term, the IMF staff assumes that Congress will continue to make regular adjustments to Medicare payments ("doc fix") and will extend certain traditional programs (such as the research and development tax credit). Fiscal projections are adjusted to reflect the IMF staff's forecasts of key macroeconomic and financial variables and different accounting treatment of financial sector support and of defined-benefit pension plans and are converted to a general government basis. Historical data start at 2001 for most series because data compiled according to the *Government Finance Statistics Manual 2001* (GFSM 2001) may not be available for earlier years.

Monetary policy assumptions

Monetary policy assumptions are based on the established policy framework in each country. In most cases, this implies a nonaccommodative stance over the business cycle: official interest rates will increase when economic indicators suggest that inflation will rise above its acceptable rate or range; they will decrease when indicators suggest that inflation will not exceed the acceptable rate or range, that output growth is below its potential rate, and that the margin of slack in the economy is significant. On this basis, the London interbank offered rate (LIBOR) on six-month U.S. dollar deposits is assumed to average 0.4 percent in 2014 and 0.7 percent in 2015 (see Table 1.1). The rate on three-month euro deposits is assumed to average 0.2 percent in 2014 and 0.1 percent in 2015. The interest rate on six-month Japanese yen deposits is assumed to average 0.2 percent in 2014 and 2015.

Box A1 *(concluded)*

Australia: Monetary policy assumptions are in line with market expectations.

Brazil: Monetary policy assumptions are consistent with gradual convergence of inflation toward the middle of the target range over the relevant horizon.

Canada: Monetary policy assumptions are in line with market expectations.

China: Monetary policy will remain broadly unchanged from its current status, consistent with the authorities' announcement of maintaining stable economic growth.

Denmark: The monetary policy is to maintain the peg to the euro.

Euro area: Monetary policy assumptions for euro area member countries are in line with market expectations.

Hong Kong SAR: The IMF staff assumes that the currency board system remains intact.

India: The policy (interest) rate assumption is based on the average of market forecasts.

Indonesia: Monetary policy assumptions are in line with a reduction of inflation by 2014 to within the central bank's targeted band.

Japan: The current monetary policy conditions are maintained for the projection period, and no further tightening or loosening is assumed.

Korea: Monetary policy assumptions are in line with market expectations.

Mexico: Monetary assumptions are consistent with attaining the inflation target.

Russia: Monetary projections assume increasing exchange rate flexibility as part of the transition to the new full-fledged inflation-targeting regime, as indicated in recent statements by the Central Bank of Russia. Specifically, policy rates are assumed to remain at the current levels, gradually reducing the number of interventions in the foreign exchange markets.

Saudi Arabia: Monetary policy projections are based on the continuation of the exchange rate peg to the U.S. dollar.

Singapore: Broad money is projected to grow in line with the projected growth in nominal GDP.

South Africa: Monetary projections are consistent with South Africa's 3–6 percent inflation target range.

Sweden: Monetary projections are in line with Riksbank projections.

Switzerland: Monetary policy variables reflect historical data from the national authorities and the market.

Turkey: Broad money and the long-term bond yield are based on IMF staff projections. The short-term deposit rate is projected to evolve with a constant spread against the interest rate of a similar U.S. instrument.

United Kingdom: Projections assume an increase in the monetary policy rate in the first half of 2015 and no changes to the level of asset purchases.

United States: Given the outlook for sluggish growth and inflation, the IMF staff expects the federal funds target to remain near zero until mid-2015, consistent with the Federal Open Market Committee's forward guidance and market expectations.

List of Tables

Table A1. Summary of World Output[1]

(Annual percent change)

	Average									Projections		
	1996–2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019
World	**3.9**	**5.6**	**5.7**	**3.0**	**0.0**	**5.4**	**4.1**	**3.4**	**3.3**	**3.3**	**3.8**	**4.0**
Advanced Economies	**2.8**	**3.1**	**2.8**	**0.1**	**–3.4**	**3.1**	**1.7**	**1.2**	**1.4**	**1.8**	**2.3**	**2.3**
United States	3.4	2.7	1.8	–0.3	–2.8	2.5	1.6	2.3	2.2	2.2	3.1	2.6
Euro Area	2.1	3.3	3.0	0.4	–4.5	1.9	1.6	–0.7	–0.4	0.8	1.3	1.6
Japan	1.0	1.7	2.2	–1.0	–5.5	4.7	–0.5	1.5	1.5	0.9	0.8	1.0
Other Advanced Economies[2]	3.6	3.9	4.2	1.1	–2.2	4.6	2.7	1.6	2.1	2.9	2.9	2.9
Emerging Market and Developing Economies	**5.2**	**8.2**	**8.6**	**5.8**	**3.1**	**7.5**	**6.2**	**5.1**	**4.7**	**4.4**	**5.0**	**5.2**
Regional Groups												
Commonwealth of Independent States[3]	4.2	8.9	9.0	5.4	–6.2	5.0	4.8	3.4	2.2	0.8	1.6	3.0
Emerging and Developing Asia	6.9	10.1	11.2	7.1	7.5	9.5	7.7	6.7	6.6	6.5	6.6	6.3
Emerging and Developing Europe	4.0	6.4	5.3	3.2	–3.6	4.7	5.5	1.4	2.8	2.7	2.9	3.4
Latin America and the Caribbean	2.9	5.7	5.8	3.9	–1.3	6.0	4.5	2.9	2.7	1.3	2.2	3.3
Middle East, North Africa, Afghanistan, and Pakistan	4.9	6.7	5.8	5.2	2.3	5.3	4.4	4.8	2.5	2.7	3.9	4.6
Middle East and North Africa	5.0	6.8	5.8	5.3	2.4	5.5	4.5	4.8	2.3	2.6	3.8	4.5
Sub-Saharan Africa	5.4	7.0	7.9	6.3	4.1	6.9	5.1	4.4	5.1	5.1	5.8	5.5
Memorandum												
European Union	2.5	3.6	3.4	0.7	–4.4	2.0	1.8	–0.3	0.2	1.4	1.8	2.0
Analytical Groups												
By Source of Export Earnings												
Fuel	4.6	8.0	7.4	5.4	–0.7	5.4	5.0	4.6	2.7	2.3	3.2	4.0
Nonfuel	5.4	8.3	9.0	5.9	4.2	8.1	6.5	5.2	5.3	5.0	5.4	5.5
Of Which, Primary Products	4.1	5.7	6.0	4.1	1.5	5.2	4.5	4.5	4.4	3.4	4.2	4.4
By External Financing Source												
Net Debtor Economies	4.2	6.7	6.8	4.3	2.0	6.8	5.3	3.7	3.9	3.6	4.3	5.0
Of Which, Official Financing	4.6	6.2	6.2	5.4	2.3	4.0	5.0	4.7	4.7	4.9	5.2	5.7
Net Debtor Economies by Debt-Servicing Experience												
Economies with Arrears and/or Rescheduling during 2009–13	4.4	7.3	7.1	4.6	2.7	6.3	5.0	2.8	3.6	2.3	3.0	3.9
Memorandum												
Median Growth Rate												
Advanced Economies	3.4	4.0	4.1	0.9	–3.6	2.3	1.9	0.9	1.2	2.0	2.3	2.2
Emerging Market and Developing Economies	4.3	5.7	6.2	5.0	1.7	4.5	4.4	3.8	3.8	3.5	4.0	4.3
Output per Capita												
Advanced Economies	2.1	2.3	2.0	–0.6	–4.0	2.5	1.2	0.7	0.9	1.3	1.9	1.8
Emerging Market and Developing Economies	3.8	6.8	7.1	4.2	1.9	6.3	5.1	3.9	3.5	3.4	3.8	4.2
World Growth Rate Based on Market Exchange	**3.0**	**4.0**	**4.0**	**1.5**	**–2.0**	**4.1**	**2.9**	**2.4**	**2.5**	**2.6**	**3.2**	**3.4**
Value of World Output (billions of U.S. dollars)												
At Market Exchange Rates	35,211	50,455	56,839	62,308	59,063	64,525	71,423	72,688	74,699	77,609	81,544	101,406
At Purchasing Power Parities	50,552	71,819	77,797	81,632	82,013	87,427	92,781	97,322	101,934	106,998	113,109	143,446

[1]Real GDP.
[2]In this table, Other Advanced Economies means advanced economies excluding the United States, euro area countries, and Japan.
[3]Georgia and Turkmenistan, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.

Table A2. Advanced Economies: Real GDP and Total Domestic Demand[1]

(Annual percent change)

	Average									Projections			Fourth Quarter[2]	Projections	
	1996–2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019	2013:Q4	2014:Q4	2015:Q4
Real GDP															
Advanced Economies	**2.8**	**3.1**	**2.8**	**0.1**	**–3.4**	**3.1**	**1.7**	**1.2**	**1.4**	**1.8**	**2.3**	**2.3**	**2.2**	**1.7**	**2.4**
United States	3.4	2.7	1.8	–0.3	–2.8	2.5	1.6	2.3	2.2	2.2	3.1	2.6	3.1	2.1	3.0
Euro Area	2.1	3.3	3.0	0.4	–4.5	1.9	1.6	–0.7	–0.4	0.8	1.3	1.6	0.5	0.8	1.6
Germany	1.2	3.9	3.4	0.8	–5.1	3.9	3.4	0.9	0.5	1.4	1.5	1.3	1.4	1.1	1.9
France	2.3	2.4	2.4	0.2	–2.9	2.0	2.1	0.3	0.3	0.4	1.0	1.9	0.8	0.3	1.3
Italy	1.4	2.2	1.7	–1.2	–5.5	1.7	0.4	–2.4	–1.9	–0.2	0.8	1.0	–0.9	–0.1	1.3
Spain	3.7	4.1	3.5	0.9	–3.8	–0.2	0.1	–1.6	–1.2	1.3	1.7	2.0	–0.2	2.0	1.5
Netherlands	2.6	3.8	4.2	2.1	–3.3	1.1	1.7	–1.6	–0.7	0.6	1.4	2.0	0.7	0.4	1.9
Belgium	2.2	2.7	2.9	1.0	–2.8	2.3	1.8	–0.1	0.2	1.0	1.4	1.2	0.8	0.8	1.8
Austria	2.4	3.7	3.7	1.4	–3.8	1.8	2.8	0.9	0.3	1.0	1.9	1.3	0.7	1.2	1.9
Greece	3.7	5.5	3.5	–0.2	–3.1	–4.9	–7.1	–7.0	–3.9	0.6	2.9	3.6	–2.3	2.5	2.7
Portugal	2.5	1.4	2.4	0.0	–2.9	1.9	–1.3	–3.2	–1.4	1.0	1.5	1.8	1.5	1.0	1.6
Finland	3.7	4.1	5.2	0.7	–8.3	3.0	2.6	–1.5	–1.2	–0.2	0.9	1.8	0.1	0.0	1.5
Ireland	7.2	5.5	4.9	–2.6	–6.4	–0.3	2.8	–0.3	0.2	3.6	3.0	2.5	–1.2	–2.2	0.5
Slovak Republic	4.2	8.3	10.5	5.8	–4.9	4.4	3.0	1.8	0.9	2.4	2.7	2.9	1.6	2.4	2.8
Slovenia	3.9	5.7	6.9	3.3	–7.8	1.2	0.6	–2.6	–1.0	1.4	1.4	1.9	2.1	0.1	3.3
Luxembourg	4.8	4.9	6.6	–0.7	–5.6	3.1	1.9	–0.2	2.1	2.7	1.9	2.2	3.0	2.0	2.0
Latvia	6.9	11.0	10.0	–2.8	–17.7	–1.3	5.3	5.2	4.1	2.7	3.2	3.9	3.6	3.3	2.0
Estonia	6.9	10.4	7.9	–5.3	–14.7	2.5	8.3	4.7	1.6	1.2	2.5	3.6	1.7	2.3	3.8
Cyprus[3]	3.5	4.1	5.1	3.6	–1.9	1.3	0.4	–2.4	–5.4	–3.2	0.4	2.1	–4.9	. . .	. . .
Malta	. . .	2.6	4.1	3.9	–2.8	4.3	1.4	1.1	2.9	2.2	2.2	1.7	2.8	1.0	2.9
Japan	1.0	1.7	2.2	–1.0	–5.5	4.7	–0.5	1.5	1.5	0.9	0.8	1.0	2.4	0.6	0.5
United Kingdom	3.4	2.8	3.4	–0.8	–5.2	1.7	1.1	0.3	1.7	3.2	2.7	2.4	2.7	3.5	2.2
Canada	3.3	2.6	2.0	1.2	–2.7	3.4	2.5	1.7	2.0	2.3	2.4	2.0	2.7	2.2	2.4
Korea	5.0	5.2	5.5	2.8	0.7	6.5	3.7	2.3	3.0	3.7	4.0	3.9	3.6	3.9	4.2
Australia	3.7	2.7	4.5	2.7	1.5	2.2	2.6	3.6	2.3	2.8	2.9	3.0	2.6	2.2	3.7
Taiwan Province of China	4.4	5.4	6.0	0.7	–1.8	10.8	4.2	1.5	2.1	3.5	3.8	4.5	2.3	2.9	4.8
Sweden	3.1	4.3	3.3	–0.6	–5.0	6.6	2.9	0.9	1.6	2.1	2.7	2.4	3.0	2.1	2.3
Hong Kong SAR	3.4	7.0	6.5	2.1	–2.5	6.8	4.8	1.5	2.9	3.0	3.3	3.8	2.9	1.0	10.3
Switzerland	1.7	3.8	3.8	2.2	–1.9	3.0	1.8	1.0	1.9	1.3	1.6	1.8	1.8	1.3	1.8
Singapore	5.3	8.9	9.1	1.8	–0.6	15.2	6.1	2.5	3.9	3.0	3.0	3.1	4.9	2.0	3.3
Czech Republic	3.0	7.0	5.7	3.1	–4.5	2.5	1.8	–1.0	–0.9	2.5	2.5	2.1	1.1	1.0	4.4
Norway	2.9	2.3	2.7	0.1	–1.6	0.5	1.3	2.9	0.6	1.8	1.9	2.1	1.2	2.2	1.6
Israel	3.7	5.8	6.3	3.5	1.9	5.8	4.2	3.0	3.2	2.5	2.8	3.2	3.0	2.1	3.3
Denmark	2.1	3.4	1.6	–0.8	–5.7	1.4	1.1	–0.4	0.4	1.5	1.8	2.0	0.7	2.1	1.8
New Zealand	3.5	2.8	3.4	–0.8	–1.4	2.1	1.9	2.5	2.8	3.6	2.8	2.5	3.3	3.4	2.5
Iceland	4.6	4.7	6.0	1.2	–6.6	–4.1	2.7	1.5	3.3	2.9	3.0	3.0	3.8	3.3	3.5
San Marino	. . .	3.8	7.1	3.4	–9.5	–5.0	–8.5	–5.1	–3.2	0.0	2.2	2.9	. . .	. . .	. . .
Memorandum															
Major Advanced Economies	2.6	2.6	2.2	–0.3	–3.8	2.9	1.5	1.4	1.5	1.7	2.3	2.1	2.4	1.6	2.2
Real Total Domestic Demand															
Advanced Economies	**2.9**	**2.8**	**2.4**	**–0.3**	**–3.8**	**3.0**	**1.4**	**0.9**	**1.0**	**1.7**	**2.3**	**2.2**	**2.0**	**1.6**	**2.5**
United States	3.9	2.6	1.1	–1.3	–3.8	2.9	1.6	2.2	1.9	2.3	3.2	2.6	2.8	2.5	3.3
Euro Area	2.1	3.1	2.8	0.3	–3.8	1.2	0.7	–2.2	–0.9	0.7	1.0	1.5	0.3	0.3	1.7
Germany	0.6	2.8	2.0	1.0	–2.3	2.3	2.8	–0.2	0.8	1.6	1.4	1.2	1.1	1.5	2.1
France	2.4	2.4	3.1	0.5	–2.5	2.1	2.0	–0.3	0.2	0.3	0.6	1.7	0.7	0.1	1.0
Italy	1.8	2.1	1.4	–1.2	–4.4	2.1	–0.9	–5.0	–2.7	–0.4	0.5	1.0	–1.2	–0.2	1.0
Spain	4.4	5.2	4.1	–0.5	–6.3	–0.6	–2.0	–4.1	–2.7	1.3	1.2	1.7	–0.6	1.4	2.0
Japan	0.7	0.9	1.1	–1.3	–4.0	2.9	0.4	2.3	1.8	0.9	0.6	0.9	2.9	–0.2	0.4
United Kingdom	3.8	2.4	3.4	–1.6	–6.3	2.4	–0.1	1.2	1.8	2.9	2.6	2.4	2.6	3.1	1.9
Canada	3.4	3.9	3.4	2.8	–2.7	5.2	2.9	2.2	1.8	2.0	2.2	1.9	2.3	1.9	2.2
Other Advanced Economies[4]	3.3	4.2	5.0	1.6	–2.8	6.5	2.9	2.1	1.4	2.3	3.0	3.4	2.5	1.8	3.6
Memorandum															
Major Advanced Economies	2.8	2.4	1.7	–0.8	–3.7	2.8	1.4	1.2	1.4	1.8	2.2	2.0	2.2	1.7	2.3

[1]In this and other tables, when countries are not listed alphabetically, they are ordered on the basis of economic size.
[2]From the fourth quarter of the preceding year.
[3]Owing to the unusual macroeconomic uncertainty, quarterly real GDP projections are not available.
[4]In this table, Other Advanced Economies means advanced economies excluding the G7 (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and euro area countries.

Table A3. Advanced Economies: Components of Real GDP

(Annual percent change)

	Averages										Projections	
	1996–2005	2006–15	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Private Consumer Expenditure												
Advanced Economies	**3.0**	**1.4**	**2.6**	**2.4**	**0.1**	**–1.1**	**2.0**	**1.5**	**1.0**	**1.5**	**1.6**	**2.2**
United States	3.9	1.7	3.0	2.2	–0.3	–1.6	1.9	2.3	1.8	2.4	2.4	2.9
Euro Area	2.0	0.4	2.1	1.7	0.4	–1.0	1.0	0.3	–1.3	–0.7	0.7	1.2
Germany	0.9	1.0	1.6	–0.2	0.7	0.3	1.0	2.3	0.7	1.0	1.1	1.3
France	2.4	0.9	2.2	2.5	0.4	0.2	1.8	0.5	–0.4	0.2	0.3	1.2
Italy	1.6	–0.5	1.4	1.1	–0.8	–1.6	1.5	–0.3	–4.0	–2.6	0.1	0.6
Spain	3.8	0.1	4.0	3.5	–0.6	–3.7	0.2	–1.2	–2.8	–2.1	2.0	1.6
Japan	1.0	0.8	1.1	0.9	–0.9	–0.7	2.8	0.3	2.0	2.0	–0.5	1.1
United Kingdom	4.1	1.0	1.8	2.7	–1.0	–3.6	1.0	–0.4	1.4	2.2	2.6	3.0
Canada	3.4	2.6	4.1	4.2	2.9	0.3	3.4	2.3	1.9	2.4	2.5	2.2
Other Advanced Economies[1]	3.6	2.6	3.6	4.7	1.2	0.2	3.8	2.9	2.1	2.1	2.3	3.0
Memorandum												
Major Advanced Economies	2.8	1.3	2.4	1.9	–0.2	–1.2	1.9	1.5	1.2	1.7	1.6	2.2
Public Consumption												
Advanced Economies	**2.6**	**1.0**	**1.7**	**1.9**	**2.3**	**3.0**	**0.9**	**–0.6**	**0.2**	**0.1**	**0.4**	**0.4**
United States	2.0	0.4	1.1	1.4	2.5	3.7	0.1	–2.7	–0.6	–1.3	–0.2	0.0
Euro Area	1.8	1.0	2.1	2.2	2.3	2.6	0.6	–0.1	–0.6	0.1	0.4	0.2
Germany	0.9	1.4	0.9	1.4	3.2	3.0	1.3	1.0	1.0	0.4	0.7	1.2
France	1.4	1.3	1.3	1.8	1.1	2.4	1.3	1.0	1.7	2.0	0.6	0.0
Italy	1.8	–0.2	0.5	1.0	0.6	0.8	–0.4	–1.3	–2.6	–0.8	0.3	–0.3
Spain	4.2	1.2	4.6	5.6	5.9	3.7	1.5	–0.5	–4.8	–2.3	0.0	–0.7
Japan	2.4	1.1	0.0	1.1	–0.1	2.3	1.9	1.2	1.7	2.0	0.3	0.5
United Kingdom	2.8	0.9	2.2	0.7	2.1	0.7	0.5	0.0	1.6	0.7	1.2	–0.5
Canada	1.7	2.0	3.1	2.8	4.6	3.3	2.7	0.8	1.1	0.6	0.3	0.9
Other Advanced Economies[1]	2.9	2.5	3.3	3.1	2.9	3.5	2.8	1.6	2.0	2.2	1.7	1.7
Memorandum												
Major Advanced Economies	1.9	0.7	1.1	1.4	2.0	2.9	0.7	–1.0	0.2	–0.2	0.2	0.2
Gross Fixed Capital Formation												
Advanced Economies	**3.5**	**0.5**	**3.9**	**2.5**	**–2.9**	**–11.6**	**1.9**	**2.6**	**1.8**	**0.8**	**3.1**	**4.2**
United States	5.1	0.5	2.2	–1.2	–4.8	–13.1	1.1	3.7	5.3	2.7	3.9	6.9
Euro Area	2.7	–0.8	5.6	5.2	–1.4	–12.8	–0.4	1.6	–4.0	–2.9	0.7	2.0
Germany	0.0	1.8	8.9	5.1	0.7	–12.1	5.4	7.0	–1.4	–0.7	3.2	3.1
France	3.2	0.2	3.6	5.5	0.8	–9.1	2.1	2.1	0.3	–1.0	–1.6	–0.3
Italy	2.6	–2.5	3.4	1.8	–3.7	–11.7	0.6	–2.2	–8.0	–4.7	–1.4	1.5
Spain	6.2	–3.4	7.1	4.5	–4.7	–18.0	–5.5	–5.4	–7.0	–5.1	0.3	2.4
Japan	–0.8	–0.2	1.5	0.3	–4.1	–10.6	–0.2	1.4	3.4	2.6	4.3	–0.2
United Kingdom	4.5	0.2	5.6	7.5	–6.9	–16.7	2.8	–2.4	0.8	–0.8	9.3	5.6
Canada	5.9	2.0	6.2	3.2	1.6	–12.0	11.3	4.2	4.3	0.0	0.0	3.2
Other Advanced Economies[1]	3.5	2.8	5.2	6.6	0.3	–5.4	6.7	3.9	2.3	2.2	3.0	3.6
Memorandum												
Major Advanced Economies	3.3	0.4	3.4	1.2	–3.5	–12.4	2.0	2.8	2.8	1.2	3.3	4.4

Table A3. Advanced Economies: Components of Real GDP *(concluded)*

(Annual percent change)

	Averages										Projections	
	1996–2005	2006–15	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Final Domestic Demand												
Advanced Economies	**2.9**	**1.1**	**2.7**	**2.3**	**–0.2**	**–2.6**	**1.8**	**1.3**	**1.0**	**1.1**	**1.7**	**2.3**
United States	3.9	1.2	2.6	1.4	–0.9	–3.1	1.5	1.7	2.1	1.9	2.3	3.2
Euro Area	2.1	0.3	2.9	2.5	0.4	–2.8	0.6	0.5	–1.7	–0.9	0.6	1.1
Germany	0.7	1.2	2.8	1.2	1.1	–1.6	1.8	2.9	0.4	0.6	1.4	1.6
France	2.3	0.8	2.3	3.0	0.7	–1.5	1.8	0.9	0.3	0.4	0.0	0.6
Italy	1.9	–0.8	1.6	1.2	–1.2	–3.2	0.9	–0.9	–4.5	–2.6	–0.1	0.6
Spain	4.5	–0.5	5.0	4.1	–0.7	–6.2	–0.9	–2.0	–4.1	–2.7	1.3	1.2
Japan	0.8	0.6	1.0	0.8	–1.6	–2.3	2.0	0.7	2.2	2.1	0.7	0.7
United Kingdom	3.9	0.8	2.5	3.1	–1.4	–4.8	1.2	–0.6	1.4	1.4	3.2	2.6
Canada	3.6	2.4	4.4	3.7	2.9	–1.9	5.0	2.4	2.3	1.4	1.5	2.2
Other Advanced Economies[1]	3.3	2.6	3.8	4.8	1.2	–0.5	4.4	2.8	2.1	2.1	2.4	3.0
Memorandum												
Major Advanced Economies	2.8	1.0	2.4	1.6	–0.5	–2.8	1.7	1.3	1.3	1.3	1.7	2.3
Stock Building[2]												
Advanced Economies	**0.0**	**0.0**	**0.1**	**0.1**	**–0.2**	**–1.1**	**1.2**	**0.1**	**–0.1**	**–0.1**	**0.0**	**0.0**
United States	0.0	0.0	0.0	–0.2	–0.5	–0.8	1.5	–0.1	0.2	0.1	0.1	0.0
Euro Area	0.0	0.0	0.3	0.3	–0.1	–1.0	0.6	0.3	–0.5	0.0	0.1	–0.1
Germany	–0.1	0.0	0.1	0.8	–0.1	–0.6	0.5	0.0	–0.5	0.2	0.1	–0.3
France	0.1	0.0	0.1	0.1	–0.2	–1.1	0.3	1.1	–0.6	–0.2	0.3	0.0
Italy	–0.1	0.0	0.5	0.2	0.0	–1.2	1.1	–0.1	–0.6	–0.1	–0.2	–0.1
Spain	0.0	0.0	0.3	–0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Japan	0.0	–0.1	–0.1	0.3	0.2	–1.5	0.9	–0.2	0.1	–0.3	0.1	–0.1
United Kingdom	0.0	0.0	–0.1	0.3	–0.2	–1.5	1.2	0.4	–0.2	0.4	–0.2	0.0
Canada	0.0	0.0	–0.1	–0.1	0.0	–0.8	0.2	0.5	0.0	0.4	–0.2	–0.1
Other Advanced Economies[1]	0.0	0.0	0.3	0.2	0.2	–2.1	2.1	0.1	–0.1	–0.7	–0.1	0.0
Memorandum												
Major Advanced Economies	0.0	0.0	0.0	0.1	–0.3	–1.0	1.1	0.0	–0.1	0.0	0.1	0.0
Foreign Balance[2]												
Advanced Economies	**–0.2**	**0.3**	**0.2**	**0.4**	**0.5**	**0.3**	**0.2**	**0.3**	**0.4**	**0.3**	**0.1**	**0.1**
United States	–0.6	0.2	–0.1	0.6	1.1	1.2	–0.5	0.0	0.0	0.2	–0.2	–0.3
Euro Area	0.1	0.4	0.2	0.2	0.1	–0.7	0.7	0.9	1.5	0.5	0.2	0.3
Germany	0.5	0.3	1.2	1.5	–0.1	–3.0	1.7	0.7	1.1	–0.2	–0.1	0.2
France	–0.1	0.0	0.0	–0.8	–0.3	–0.4	–0.1	0.0	0.7	0.1	0.1	0.4
Italy	–0.3	0.4	0.1	0.3	0.0	–1.2	–0.4	1.5	2.6	0.8	0.3	0.4
Spain	–0.7	0.9	–1.4	–0.8	1.5	2.9	0.4	2.1	2.5	1.5	0.1	0.5
Japan	0.2	0.0	0.8	1.0	0.2	–2.0	2.0	–0.8	–0.7	–0.2	0.1	0.1
United Kingdom	–0.6	0.2	0.2	–0.1	0.9	0.9	–0.5	1.2	–0.5	0.1	0.2	0.1
Canada	–0.2	–0.6	–1.4	–1.5	–1.9	0.0	–2.0	–0.4	–0.6	0.3	1.0	0.3
Other Advanced Economies[1]	0.5	0.6	0.9	0.6	0.4	1.5	0.1	0.5	0.4	0.7	0.7	0.5
Memorandum												
Major Advanced Economies	–0.3	0.2	0.2	0.5	0.5	0.0	0.1	0.1	0.2	0.1	0.0	0.0

[1]In this table, Other Advanced Economies means advanced economies excluding the G7 (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and euro area countries.
[2]Changes expressed as percent of GDP in the preceding period.

Table A4. Emerging Market and Developing Economies: Real GDP

(Annual percent change)

	Average									Projections		
	1996–2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019
Commonwealth of Independent States[1,2]	**4.2**	**8.9**	**9.0**	**5.4**	**–6.2**	**5.0**	**4.8**	**3.4**	**2.2**	**0.8**	**1.6**	**3.0**
Russia	3.8	8.2	8.5	5.2	–7.8	4.5	4.3	3.4	1.3	0.2	0.5	2.0
Excluding Russia	5.1	11.0	10.3	5.6	–2.3	6.1	6.1	3.6	4.2	2.0	4.0	5.0
Armenia	8.6	13.2	13.7	6.9	–14.1	2.2	4.7	7.1	3.5	3.2	3.5	4.5
Azerbaijan	9.5	34.5	25.0	10.8	9.3	5.0	0.1	2.2	5.8	4.5	4.3	4.2
Belarus	6.9	10.0	8.7	10.3	0.1	7.7	5.5	1.7	0.9	0.9	1.5	2.7
Georgia	6.5	9.4	12.3	2.3	–3.8	6.3	7.2	6.2	3.2	5.0	5.0	5.0
Kazakhstan	6.4	10.7	8.9	3.3	1.2	7.3	7.5	5.0	6.0	4.6	4.7	5.7
Kyrgyz Republic	4.7	3.1	8.5	7.6	2.9	–0.5	6.0	–0.9	10.5	4.1	4.9	5.3
Moldova	2.2	4.8	3.0	7.8	–6.0	7.1	6.8	–0.7	8.9	1.8	3.5	4.0
Tajikistan	6.0	7.0	7.8	7.9	3.9	6.5	7.4	7.5	7.4	6.0	6.0	5.8
Turkmenistan	9.9	11.0	11.1	14.7	6.1	9.2	14.7	11.1	10.2	10.1	11.5	8.1
Ukraine	2.8	7.3	7.9	2.3	–14.8	4.1	5.2	0.3	0.0	–6.5	1.0	4.5
Uzbekistan	4.6	7.5	9.5	9.0	8.1	8.5	8.3	8.2	8.0	7.0	6.5	5.5
Emerging and Developing Asia	**6.9**	**10.1**	**11.2**	**7.1**	**7.5**	**9.5**	**7.7**	**6.7**	**6.6**	**6.5**	**6.6**	**6.3**
Bangladesh	5.4	6.5	6.3	6.0	5.7	6.0	6.5	6.3	6.1	6.2	6.4	7.0
Bhutan	6.9	7.0	12.6	10.8	5.7	9.3	10.1	6.5	5.0	6.4	7.6	8.0
Brunei Darussalam	1.7	4.4	0.2	–1.9	–1.8	2.6	3.4	0.9	–1.8	5.3	3.0	3.3
Cambodia	8.3	10.8	10.2	6.7	0.1	6.1	7.1	7.3	7.4	7.2	7.3	7.5
China	9.2	12.7	14.2	9.6	9.2	10.4	9.3	7.7	7.7	7.4	7.1	6.3
Fiji	2.5	1.9	–0.9	1.0	–1.4	3.0	2.7	1.8	4.6	3.8	2.5	2.7
India	6.4	9.3	9.8	3.9	8.5	10.3	6.6	4.7	5.0	5.6	6.4	6.7
Indonesia	2.6	5.5	6.3	6.0	4.6	6.2	6.5	6.3	5.8	5.2	5.5	6.0
Kiribati	2.3	–4.5	7.5	2.8	–0.7	–0.5	2.7	2.8	2.9	3.0	2.7	2.1
Lao P.D.R.	6.0	8.6	7.8	7.8	7.5	8.1	8.0	7.9	8.0	7.4	7.2	7.5
Malaysia	4.7	5.6	6.3	4.8	–1.5	7.4	5.2	5.6	4.7	5.9	5.2	5.0
Maldives	6.0	19.6	10.2	10.9	4.5	7.1	6.5	0.9	3.7	4.5	4.3	4.0
Marshall Islands	. . .	1.9	3.8	–2.0	–1.8	5.9	0.6	3.2	0.8	3.2	1.7	1.5
Micronesia	0.2	–0.2	–2.1	–2.6	1.0	2.5	2.1	0.4	0.6	0.6	0.6	0.7
Mongolia	4.6	8.6	10.2	8.9	–1.3	6.4	17.5	12.4	11.7	9.1	8.4	6.8
Myanmar	. . .	13.1	12.0	3.6	5.1	5.3	5.9	7.3	8.3	8.5	8.5	7.6
Nepal	4.2	3.4	3.4	6.1	4.5	4.8	3.4	4.8	3.9	5.5	5.0	4.5
Palau	. . .	–1.4	1.7	–5.5	–10.7	3.2	5.2	5.5	–0.2	1.8	2.2	2.2
Papua New Guinea	1.5	2.3	7.2	6.6	6.1	7.7	10.7	8.1	5.5	5.8	19.6	3.5
Philippines	4.1	5.2	6.6	4.2	1.1	7.6	3.7	6.8	7.2	6.2	6.3	6.0
Samoa	4.2	1.9	1.1	2.9	–6.4	–1.7	5.2	1.5	–1.1	2.0	2.2	1.6
Solomon Islands	0.1	4.0	6.4	7.1	–4.7	7.8	10.7	3.8	3.0	0.1	3.5	3.5
Sri Lanka	4.3	7.7	6.8	6.0	3.5	8.0	8.2	6.3	7.3	7.0	6.5	6.5
Thailand	2.7	5.1	5.0	2.5	–2.3	7.8	0.1	6.5	2.9	1.0	4.6	4.3
Timor-Leste[3]	. . .	–5.7	11.4	14.2	13.0	9.4	14.7	7.8	5.4	6.6	6.8	7.4
Tonga	1.2	–2.8	–1.4	2.6	3.3	3.1	1.8	0.5	0.8	2.4	3.0	2.6
Tuvalu	. . .	2.9	6.4	8.0	–4.4	–2.7	8.5	0.2	1.3	2.2	2.5	1.9
Vanuatu	1.9	8.5	5.2	6.5	3.3	1.6	1.2	1.8	2.2	3.5	4.0	2.5
Vietnam	7.1	7.0	7.1	5.7	5.4	6.4	6.2	5.2	5.4	5.5	5.6	6.0
Emerging and Developing Europe	**4.0**	**6.4**	**5.3**	**3.2**	**–3.6**	**4.7**	**5.5**	**1.4**	**2.8**	**2.7**	**2.9**	**3.4**
Albania	5.7	5.4	5.9	7.5	3.4	3.5	2.3	1.1	0.4	2.1	3.3	4.7
Bosnia and Herzegovina	. . .	5.7	6.0	5.6	–2.7	0.8	1.0	–1.2	2.1	0.7	3.5	4.0
Bulgaria	2.4	6.5	6.4	6.2	–5.5	0.4	1.8	0.6	0.9	1.4	2.0	3.0
Croatia	3.9	4.9	5.1	2.1	–6.9	–2.3	–0.2	–2.2	–0.9	–0.8	0.5	2.0
Hungary	3.6	3.9	0.1	0.9	–6.8	1.1	1.6	–1.7	1.1	2.8	2.3	1.8
Kosovo	. . .	3.4	8.3	4.5	3.6	3.3	4.4	2.8	3.4	2.7	3.3	4.0
Lithuania	6.2	7.8	9.8	2.9	–14.8	1.6	6.0	3.7	3.3	3.0	3.3	3.7
FYR Macedonia	2.3	5.0	6.1	5.0	–0.9	2.9	2.8	–0.4	2.9	3.4	3.6	4.0
Montenegro	. . .	8.6	10.7	6.9	–5.7	2.5	3.2	–2.5	3.5	2.3	3.4	3.0
Poland	4.2	6.2	6.8	5.1	1.6	3.9	4.5	2.0	1.6	3.2	3.3	3.6
Romania	2.2	7.9	6.3	7.3	–6.6	–1.1	2.3	0.6	3.5	2.4	2.5	3.5
Serbia	. . .	3.6	5.4	3.8	–3.5	1.0	1.6	–1.5	2.5	–0.5	1.0	3.0
Turkey	4.3	6.9	4.7	0.7	–4.8	9.2	8.8	2.1	4.0	3.0	3.0	3.5

Table A4. Emerging Market and Developing Economies: Real GDP *(continued)*

(Annual percent change)

	Average									Projections		
	1996–2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019
Latin America and the Caribbean	**2.9**	**5.7**	**5.8**	**3.9**	**–1.3**	**6.0**	**4.5**	**2.9**	**2.7**	**1.3**	**2.2**	**3.3**
Antigua and Barbuda	3.9	12.7	7.1	1.5	–10.7	–8.5	–1.9	3.6	1.8	1.9	1.7	2.0
Argentina[4]	2.3	8.4	8.0	3.1	0.1	9.1	8.6	0.9	2.9	–1.7	–1.5	0.0
The Bahamas	4.0	2.5	1.4	–2.3	–4.2	1.5	1.1	1.0	0.7	1.2	2.1	1.5
Barbados	2.0	5.7	1.7	0.3	–4.1	0.2	0.8	0.0	–0.3	–0.6	0.5	2.2
Belize	5.7	4.7	1.2	3.8	0.3	3.1	2.1	4.0	0.7	2.0	2.5	2.5
Bolivia	3.3	4.8	4.6	6.1	3.4	4.1	5.2	5.2	6.8	5.2	5.0	5.0
Brazil	2.4	4.0	6.1	5.2	–0.3	7.5	2.7	1.0	2.5	0.3	1.4	3.0
Chile	4.3	5.8	5.2	3.2	–1.0	5.7	5.8	5.5	4.2	2.0	3.3	4.3
Colombia	2.3	6.7	6.9	3.5	1.7	4.0	6.6	4.0	4.7	4.8	4.5	4.5
Costa Rica	4.5	8.8	7.9	2.7	–1.0	5.0	4.5	5.1	3.5	3.6	3.6	4.3
Dominica	1.9	4.6	6.0	7.8	–1.1	1.2	0.2	–1.1	0.8	1.4	1.2	1.8
Dominican Republic	5.2	10.7	8.5	3.1	0.9	8.3	2.9	2.7	4.6	5.3	4.2	4.0
Ecuador	3.0	4.4	2.2	6.4	0.6	3.5	7.8	5.1	4.5	4.0	4.0	4.5
El Salvador	2.7	3.9	3.8	1.3	–3.1	1.4	2.2	1.9	1.7	1.7	1.8	2.0
Grenada	5.9	–4.0	6.1	0.9	–6.6	–0.5	0.8	–1.8	1.5	1.1	1.2	2.5
Guatemala	3.3	5.4	6.3	3.3	0.5	2.9	4.2	3.0	3.7	3.4	3.7	3.5
Guyana	1.6	5.1	7.0	2.0	3.3	4.4	5.4	4.8	5.2	3.3	3.8	3.2
Haiti	1.0	2.2	3.3	0.8	3.1	–5.5	5.5	2.9	4.3	3.8	3.7	4.0
Honduras	3.8	6.6	6.2	4.2	–2.4	3.7	3.8	3.9	2.6	3.0	3.1	3.0
Jamaica	0.6	2.9	1.4	–0.8	–3.4	–1.5	1.4	–0.5	0.2	1.1	1.8	2.7
Mexico	3.4	5.0	3.1	1.4	–4.7	5.1	4.0	4.0	1.1	2.4	3.5	3.8
Nicaragua	4.1	4.2	5.3	2.9	–2.8	3.3	5.7	5.0	4.6	4.0	4.0	4.0
Panama	4.9	8.5	12.1	10.1	3.9	7.5	10.9	10.8	8.4	6.6	6.4	5.8
Paraguay	1.2	4.8	5.4	6.4	–4.0	13.1	4.3	–1.2	13.6	4.0	4.5	4.5
Peru	3.6	7.5	8.5	9.1	1.0	8.5	6.5	6.0	5.8	3.6	5.1	5.5
St. Kitts and Nevis	3.9	4.6	4.8	3.4	–3.8	–3.8	–1.9	–0.9	3.8	3.5	3.2	3.1
St. Lucia	1.6	8.7	–0.4	3.4	0.6	–0.2	1.3	–1.3	–2.3	–1.1	1.4	2.2
St. Vincent and the Grenadines	3.8	6.0	3.0	–0.5	–2.0	–2.3	0.3	1.5	2.3	1.7	2.6	3.1
Suriname	3.4	5.8	5.1	4.1	3.0	4.2	5.3	4.8	4.1	3.3	3.8	4.4
Trinidad and Tobago	7.9	13.2	4.8	3.4	–4.4	0.2	–2.6	1.2	1.6	2.3	2.1	1.7
Uruguay	1.2	4.1	6.5	7.2	2.4	8.4	7.3	3.7	4.4	2.8	2.8	3.5
Venezuela	1.6	9.9	8.8	5.3	–3.2	–1.5	4.2	5.6	1.3	–3.0	–1.0	1.0
Middle East, North Africa, Afghanistan, and Pakistan	**4.9**	**6.7**	**5.8**	**5.2**	**2.3**	**5.3**	**4.4**	**4.8**	**2.5**	**2.7**	**3.9**	**4.6**
Afghanistan	. . .	5.4	13.3	3.9	20.6	8.4	6.5	14.0	3.6	3.2	4.5	5.6
Algeria	4.3	1.7	3.4	2.4	1.6	3.6	2.8	3.3	2.8	3.8	4.0	3.9
Bahrain	4.9	6.5	8.3	6.2	2.5	4.3	2.1	3.4	5.3	3.9	2.9	3.3
Djibouti	1.2	4.8	5.1	5.8	5.0	3.5	4.5	4.8	5.0	5.5	5.5	6.5
Egypt	4.8	6.8	7.1	7.2	4.7	5.1	1.8	2.2	2.1	2.2	3.5	4.0
Iran	4.7	5.7	6.4	1.5	2.3	6.6	3.9	–6.6	–1.9	1.5	2.2	2.2
Iraq	. . .	10.2	1.4	6.6	5.8	5.5	10.2	10.3	4.2	–2.7	1.5	9.1
Jordan	4.8	8.1	8.2	7.2	5.5	2.3	2.6	2.7	2.9	3.5	4.0	4.5
Kuwait	5.0	7.5	6.0	2.5	–7.1	–2.4	10.2	8.3	–0.4	1.4	1.8	3.3
Lebanon	3.5	1.6	9.4	9.1	10.3	8.0	2.0	2.5	1.5	1.8	2.5	4.0
Libya	3.1	6.5	6.4	2.7	–0.8	5.0	–62.1	104.5	–13.6	–19.8	15.0	9.4
Mauritania	3.3	11.4	1.0	3.5	–1.2	4.3	4.0	7.0	6.7	6.8	6.8	10.7
Morocco	4.4	7.8	2.7	5.6	4.8	3.6	5.0	2.7	4.4	3.5	4.7	5.4
Oman	2.3	5.4	4.5	8.2	6.1	4.8	4.1	5.8	4.8	3.4	3.4	3.4
Pakistan	4.6	5.8	5.5	5.0	0.4	2.6	3.6	3.8	3.7	4.1	4.3	5.0
Qatar	9.7	26.2	18.0	17.7	12.0	16.7	13.0	6.1	6.5	6.5	7.7	5.3
Saudi Arabia	3.3	5.6	6.0	8.4	1.8	7.4	8.6	5.8	4.0	4.6	4.5	4.4
Sudan[5]	15.5	8.9	8.5	3.0	4.7	3.0	–1.2	–2.7	3.3	3.0	3.7	5.4
Syria[6]	2.7	5.0	5.7	4.5	5.9	3.4	. . .	. . .	. . .	. . .	. . .	. . .
Tunisia	5.0	5.7	6.3	4.5	3.1	2.6	–1.9	3.7	2.3	2.8	3.7	4.5
United Arab Emirates	5.8	9.8	3.2	3.2	–5.2	1.6	4.9	4.7	5.2	4.3	4.5	4.6
Yemen	4.7	3.2	3.3	3.6	3.9	7.7	–12.7	2.4	4.8	1.9	4.6	5.6

Table A4. Emerging Market and Developing Economies: Real GDP *(concluded)*

(Annual percent change)

	Average									Projections		
	1996–2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019
Sub-Saharan Africa	**5.4**	**7.0**	**7.9**	**6.3**	**4.1**	**6.9**	**5.1**	**4.4**	**5.1**	**5.1**	**5.8**	**5.5**
Angola	8.2	20.7	22.6	13.8	2.4	3.4	3.9	5.2	6.8	3.9	5.9	6.2
Benin	4.5	3.8	4.6	5.0	2.7	2.6	3.3	5.4	5.6	5.5	5.2	4.8
Botswana	5.8	8.0	8.7	3.9	–7.8	8.6	6.2	4.3	5.9	4.4	4.2	3.8
Burkina Faso	6.6	6.3	4.1	5.8	3.0	8.4	5.0	9.0	6.6	6.7	6.8	6.6
Burundi	0.9	5.4	3.4	4.9	3.8	5.1	4.2	4.0	4.5	4.7	4.8	5.4
Cabo Verde	7.1	9.1	9.2	6.7	–1.3	1.5	4.0	1.2	0.5	1.0	3.0	4.0
Cameroon	4.2	3.2	3.3	2.9	1.9	3.3	4.1	4.6	5.5	5.1	5.2	5.3
Central African Republic	0.7	4.8	4.6	2.1	1.7	3.0	3.3	4.1	–36.0	1.0	5.3	5.7
Chad	8.6	0.6	3.3	3.1	4.2	13.6	0.1	8.9	3.9	9.6	6.7	3.3
Comoros	2.1	1.2	0.8	0.4	1.8	2.2	2.5	3.0	3.5	3.9	3.9	5.4
Democratic Republic of the Congo	–0.1	5.3	6.3	6.2	2.9	7.1	6.9	7.2	8.5	8.6	8.5	5.7
Republic of Congo	3.2	6.2	–1.6	5.6	7.5	8.7	3.4	3.8	3.3	6.0	7.5	1.9
Côte d'Ivoire	1.5	1.5	1.8	2.5	3.3	2.0	–4.4	10.7	8.7	8.5	7.9	6.0
Equatorial Guinea	38.4	1.3	13.1	12.3	–8.1	–1.3	5.0	3.2	–4.8	–2.5	–7.9	–9.0
Eritrea	1.8	–1.0	1.4	–9.8	3.9	2.2	8.7	7.0	1.3	2.0	2.1	3.6
Ethiopia	5.4	11.5	11.8	11.2	10.0	10.6	11.4	8.8	9.7	8.2	8.5	7.5
Gabon	0.5	–1.9	6.3	1.7	–2.3	6.3	6.9	5.5	5.6	5.1	5.4	6.2
The Gambia	4.4	1.1	3.6	5.7	6.4	6.5	–4.3	5.3	6.3	7.4	7.0	5.5
Ghana	4.9	6.1	6.5	8.4	4.0	8.0	15.0	8.8	7.1	4.5	4.7	3.1
Guinea	3.7	2.5	1.8	4.9	–0.3	1.9	3.9	3.8	2.3	2.4	4.1	4.2
Guinea-Bissau	0.2	2.3	3.2	3.2	3.3	4.4	9.0	–2.2	0.3	2.6	4.0	3.7
Kenya	2.8	5.6	8.0	–0.4	2.6	8.6	7.6	4.6	4.6	5.3	6.2	6.6
Lesotho	3.4	4.1	4.9	5.1	4.5	5.6	4.3	6.0	5.7	4.3	4.7	5.5
Liberia	. . .	8.2	12.7	6.0	5.1	6.1	7.5	8.3	8.7	2.5	4.5	10.4
Madagascar	3.1	5.4	6.5	7.2	–3.5	0.1	1.5	2.5	2.4	3.0	4.0	4.5
Malawi	3.2	2.1	9.5	8.3	9.0	6.5	4.3	1.9	5.2	5.7	6.0	5.0
Mali	5.1	5.3	4.3	5.0	4.5	5.8	2.7	0.0	1.7	5.9	4.8	4.7
Mauritius	4.1	4.5	5.9	5.5	3.0	4.1	3.9	3.2	3.2	3.3	3.9	4.0
Mozambique	9.1	8.7	7.3	6.8	6.3	7.1	7.3	7.2	7.1	8.3	8.2	7.7
Namibia	4.2	7.1	5.4	3.4	–1.1	6.3	5.7	5.0	4.3	4.3	4.5	4.7
Niger	4.4	5.8	3.2	9.6	–0.7	8.4	2.3	11.1	4.1	6.3	4.9	10.3
Nigeria	9.6	8.8	9.6	8.6	9.6	10.6	4.9	4.3	5.4	7.0	7.3	6.8
Rwanda	8.7	9.2	7.6	11.2	6.2	6.3	7.5	8.8	4.7	6.0	6.7	7.5
São Tomé and Príncipe	2.6	12.6	2.0	9.1	4.0	4.5	4.9	4.0	4.0	5.0	5.5	6.0
Senegal	4.4	2.5	4.9	3.7	2.4	4.2	1.7	3.4	3.5	4.5	4.6	5.3
Seychelles	2.8	9.4	10.4	–2.1	–1.1	5.9	7.9	2.8	3.5	3.7	3.8	3.4
Sierra Leone	0.7	4.2	8.0	5.2	3.2	5.3	6.0	15.2	20.1	8.0	9.9	4.9
South Africa	3.3	5.6	5.5	3.6	–1.5	3.1	3.6	2.5	1.9	1.4	2.3	2.7
South Sudan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	–47.6	27.1	–12.3	19.0	2.2
Swaziland	2.5	3.3	3.5	2.4	1.2	1.9	–0.6	1.9	2.8	2.1	2.0	1.7
Tanzania	5.5	6.7	7.1	7.4	6.0	7.0	6.4	6.9	7.0	7.2	7.0	6.9
Togo	1.6	4.1	2.3	2.4	3.5	4.1	4.8	5.9	5.1	5.6	5.7	5.1
Uganda	7.0	7.0	8.1	10.4	4.1	6.2	6.2	2.8	5.8	5.9	6.3	7.0
Zambia	4.5	7.9	8.4	7.8	9.2	10.3	6.4	6.8	6.7	6.5	7.2	6.5
Zimbabwe[7]	. . .	–3.6	–3.3	–16.4	8.2	11.4	11.9	10.6	3.3	3.1	3.2	4.4

[1]Data for some countries refer to real net material product (NMP) or are estimates based on NMP. The figures should be interpreted only as indicative of broad orders of magnitude because reliable, comparable data are not generally available. In particular, the growth of output of new private enterprises of the informal economy is not fully reflected in the recent figures.
[2]Georgia and Turkmenistan, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.
[3]In this table only, the data for Timor-Leste are based on non-oil GDP.
[4]The data for Argentina are officially reported data as revised in May 2014. On February 1, 2013, the IMF issued a declaration of censure, and in December 2013 called on Argentina to implement specified actions to address the quality of its official GDP data according to a specified timetable. On June 6, 2014, the Executive Board recognized the implementation of the specified actions it had called for by end-March 2014 and the initial steps taken by the Argentine authorities to remedy the inaccurate provision of data. The Executive Board will review this issue again as per the calendar specified in December 2013 and in line with the procedures set forth in the Fund's legal framework.
[5]Data for 2011 exclude South Sudan after July 9. Data for 2012 and onward pertain to the current Sudan.
[6]Data for Syria are excluded for 2011 onward owing the uncertain political situation.
[7]The Zimbabwe dollar ceased circulating in early 2009. Data are based on IMF staff estimates of price and exchange rate developments in U.S. dollars. IMF staff estimates of U.S. dollar values may differ from authorities' estimates. Real GDP is in constant 2009 prices.

Table A5. Summary of Inflation

(Percent)

	Average									Projections		
	1996–2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019
GDP Deflators												
Advanced Economies	**1.7**	**2.1**	**2.2**	**1.9**	**0.7**	**1.0**	**1.3**	**1.2**	**1.2**	**1.4**	**1.6**	**1.8**
United States	2.0	3.1	2.7	2.0	0.8	1.2	2.1	1.8	1.5	1.7	1.8	2.1
Euro Area	1.7	1.9	2.4	2.0	1.0	0.8	1.2	1.3	1.5	1.0	1.2	1.5
Japan	–1.0	–1.1	–0.9	–1.3	–0.5	–2.2	–1.9	–0.9	–0.6	1.3	1.4	1.3
Other Advanced Economies[1]	2.1	2.1	2.6	3.0	1.1	2.3	1.9	1.3	1.3	1.5	1.6	2.0
Consumer Prices												
Advanced Economies	**2.0**	**2.4**	**2.2**	**3.4**	**0.1**	**1.5**	**2.7**	**2.0**	**1.4**	**1.6**	**1.8**	**1.9**
United States	2.5	3.2	2.9	3.8	–0.3	1.6	3.1	2.1	1.5	2.0	2.1	2.0
Euro Area[2]	1.9	2.2	2.2	3.3	0.3	1.6	2.7	2.5	1.3	0.5	0.9	1.5
Japan	–0.1	0.2	0.1	1.4	–1.3	–0.7	–0.3	0.0	0.4	2.7	2.0	2.0
Other Advanced Economies[1]	2.0	2.1	2.1	3.8	1.3	2.4	3.4	2.1	1.7	1.6	2.1	2.3
Emerging Market and Developing Economies	**10.0**	**6.1**	**6.6**	**9.4**	**5.3**	**5.9**	**7.3**	**6.1**	**5.9**	**5.5**	**5.6**	**4.7**
Regional Groups												
Commonwealth of Independent States[3]	24.6	9.5	9.7	15.5	11.1	7.1	9.8	6.2	6.4	7.9	7.9	4.9
Emerging and Developing Asia	4.5	4.7	5.4	7.6	2.9	5.1	6.5	4.7	4.7	4.1	4.2	3.9
Emerging and Developing Europe	28.3	6.0	6.0	8.0	4.8	5.5	5.4	5.9	4.2	4.0	3.8	4.1
Latin America and the Caribbean[4]	10.2	5.4	5.5	8.1	6.1	6.2	6.8	6.1	7.1	. . .	. . .	. . .
Middle East, North Africa, Afghanistan, and Pakistan	5.7	8.3	10.1	11.7	7.1	6.5	9.2	9.7	9.0	7.6	8.0	6.9
Middle East and North Africa	5.6	8.4	10.4	11.7	6.0	6.2	8.6	9.6	9.2	7.5	8.0	7.1
Sub-Saharan Africa	14.2	7.5	5.4	13.0	9.8	8.3	9.5	9.3	6.6	6.7	7.0	5.9
Memorandum												
European Union	3.7	2.3	2.4	3.7	0.9	2.0	3.1	2.6	1.5	0.7	1.1	1.7
Analytical Groups												
By Source of Export Earnings												
Fuel	15.3	9.2	10.0	13.4	8.3	7.3	9.0	8.3	9.0	8.7	8.8	6.5
Nonfuel	8.4	5.1	5.6	8.2	4.4	5.5	6.8	5.5	5.0	4.7	4.7	4.2
Of Which, Primary Products	10.3	6.3	5.2	12.6	6.8	5.4	7.3	7.8	7.3	8.1	6.7	5.1
By External Financing Source												
Net Debtor Economies	11.2	6.7	6.2	9.5	7.3	6.8	7.8	7.2	6.6	6.4	6.3	5.2
Of Which, Official Financing	5.4	7.8	7.7	12.5	10.1	7.8	12.3	9.2	6.7	7.0	6.8	5.6
Net Debtor Economies by Debt-Servicing Experience												
Economies with Arrears and/or Rescheduling during 2009–13[4]	7.1	8.4	8.6	11.4	9.4	9.4	9.6	9.4	8.8	. . .	. . .	. . .
Memorandum												
Median Inflation Rate												
Advanced Economies	2.1	2.3	2.2	4.0	0.7	1.9	3.2	2.5	1.4	0.8	1.6	2.0
Emerging Market and Developing Economies	5.2	6.1	6.0	10.2	4.2	4.2	5.5	4.6	4.0	3.5	4.0	4.0

[1]In this table, Other Advanced Economies means advanced economies excluding the United States, euro area countries, and Japan.
[2]Based on Eurostat's harmonized index of consumer prices.
[3]Georgia and Turkmenistan, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.
[4]See note 5 to Table A7.

Table A6. Advanced Economies: Consumer Prices[1]

(Annual percent change)

	Average									Projections			End of Period[2]	Projections	
	1996–2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019	2013	2014	2015
Advanced Economies	**2.0**	**2.4**	**2.2**	**3.4**	**0.1**	**1.5**	**2.7**	**2.0**	**1.4**	**1.6**	**1.8**	**1.9**	**1.2**	**1.7**	**1.9**
United States	2.5	3.2	2.9	3.8	–0.3	1.6	3.1	2.1	1.5	2.0	2.1	2.0	1.3	2.4	2.0
Euro Area[3]	1.9	2.2	2.2	3.3	0.3	1.6	2.7	2.5	1.3	0.5	0.9	1.5	0.8	0.5	1.0
Germany	1.3	1.8	2.3	2.7	0.2	1.2	2.5	2.1	1.6	0.9	1.2	1.7	1.2	0.9	1.2
France	1.7	1.9	1.6	3.2	0.1	1.7	2.3	2.2	1.0	0.7	0.9	1.3	0.0	0.7	0.9
Italy	2.4	2.2	2.0	3.5	0.8	1.6	2.9	3.3	1.3	0.1	0.5	1.5	0.7	–0.3	0.9
Spain	2.9	3.6	2.8	4.1	–0.2	2.0	3.1	2.4	1.5	0.0	0.6	1.3	0.3	0.0	0.8
Netherlands	2.3	1.7	1.6	2.2	1.0	0.9	2.5	2.8	2.6	0.5	0.7	1.4	1.5	0.6	0.9
Belgium	1.8	2.3	1.8	4.5	0.0	2.3	3.4	2.6	1.2	0.7	1.0	1.3	1.2	0.2	1.2
Austria	1.6	1.7	2.2	3.2	0.4	1.7	3.6	2.6	2.1	1.7	1.7	1.7	2.0	1.7	1.7
Greece	4.1	3.2	2.9	4.2	1.2	4.7	3.3	1.5	–0.9	–0.8	0.3	1.6	–1.7	–0.2	0.7
Portugal	2.8	3.0	2.4	2.7	–0.9	1.4	3.6	2.8	0.4	0.0	1.1	1.5	0.2	0.5	0.2
Finland	1.5	1.3	1.6	3.9	1.6	1.7	3.3	3.2	2.2	1.2	1.5	2.0	1.9	1.0	1.5
Ireland	3.0	2.7	2.9	3.1	–1.7	–1.6	1.2	1.9	0.5	0.6	0.9	1.7	1.8	0.2	0.9
Slovak Republic	7.0	4.3	1.9	3.9	0.9	0.7	4.1	3.7	1.5	0.1	1.3	2.0	0.4	0.7	1.4
Slovenia	6.8	2.5	3.6	5.7	0.9	1.8	1.8	2.6	1.8	0.5	1.0	2.0	0.7	0.6	1.2
Luxembourg	2.2	3.0	2.7	4.1	0.0	2.8	3.7	2.9	1.7	1.1	2.1	1.9	1.5	1.0	2.3
Latvia	5.4	6.6	10.1	15.3	3.3	–1.2	4.2	2.3	0.0	0.7	1.6	2.2	–0.4	0.8	2.9
Estonia	6.6	4.4	6.7	10.6	0.2	2.7	5.1	4.2	3.2	0.8	1.4	2.3	2.0	0.5	2.0
Cyprus[3]	2.7	2.3	2.2	4.4	0.2	2.6	3.5	3.1	0.4	0.0	0.7	1.9	–1.2	0.0	0.7
Malta	2.7	2.6	0.7	4.7	1.8	2.0	2.5	3.2	1.0	1.0	1.2	1.7	1.0	0.7	1.4
Japan	–0.1	0.2	0.1	1.4	–1.3	–0.7	–0.3	0.0	0.4	2.7	2.0	2.0	1.4	2.6	3.0
United Kingdom[3]	1.5	2.3	2.3	3.6	2.2	3.3	4.5	2.8	2.6	1.6	1.8	2.0	2.1	1.5	1.8
Canada	2.0	2.0	2.1	2.4	0.3	1.8	2.9	1.5	1.0	1.9	2.0	2.0	1.0	2.2	2.0
Korea	3.6	2.2	2.5	4.7	2.8	2.9	4.0	2.2	1.3	1.6	2.4	3.0	1.1	2.0	2.8
Australia	2.5	3.6	2.3	4.4	1.8	2.9	3.3	1.8	2.4	2.7	2.6	2.5	2.7	2.3	2.8
Taiwan Province of China	1.0	0.6	1.8	3.5	–0.9	1.0	1.4	1.9	0.8	1.4	2.0	2.0	0.3	1.4	2.0
Sweden	1.0	1.4	2.2	3.4	–0.5	1.2	3.0	0.9	0.0	0.1	1.4	2.0	0.1	0.5	1.8
Hong Kong SAR	0.0	2.0	2.0	4.3	0.6	2.3	5.3	4.1	4.3	3.9	3.8	3.5	4.3	3.9	3.8
Switzerland	0.8	1.1	0.7	2.4	–0.5	0.7	0.2	–0.7	–0.2	0.1	0.2	1.0	0.1	0.1	0.2
Singapore	0.8	1.0	2.1	6.6	0.6	2.8	5.2	4.6	2.4	1.4	2.5	2.3	2.0	1.1	2.9
Czech Republic	4.5	2.5	2.9	6.3	1.0	1.5	1.9	3.3	1.4	0.6	1.9	2.0	1.4	1.4	2.0
Norway	2.0	2.3	0.7	3.8	2.2	2.4	1.3	0.7	2.1	2.0	2.0	2.5	2.0	2.0	2.0
Israel	4.0	2.1	0.5	4.6	3.3	2.7	3.5	1.7	1.5	0.8	1.8	2.0	1.8	0.7	2.0
Denmark	2.1	1.9	1.7	3.4	1.3	2.3	2.8	2.4	0.8	0.6	1.6	2.0	0.8	0.6	1.6
New Zealand	2.0	3.4	2.4	4.0	2.1	2.3	4.0	1.1	1.1	1.6	2.0	2.0	1.6	1.5	2.0
Iceland	3.5	6.7	5.1	12.7	12.0	5.4	4.0	5.2	3.9	2.5	3.3	2.5	4.1	3.0	3.0
San Marino	. . .	2.1	2.5	4.1	2.4	2.6	2.0	2.8	1.3	1.0	1.2	1.7	1.3	1.0	1.2
Memorandum															
Major Advanced Economies	1.8	2.4	2.2	3.2	–0.1	1.4	2.6	1.9	1.3	1.7	1.8	1.9	1.2	1.9	1.9

[1]Movements in consumer prices are shown as annual averages.
[2]Monthly year-over-year changes and, for several countries, on a quarterly basis.
[3]Based on Eurostat's harmonized index of consumer prices.

Table A7. Emerging Market and Developing Economies: Consumer Prices[1]

(Annual percent change)

	Average									Projections			End of Period[2]	Projections	
	1996–2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019	2013	2014	2015
Commonwealth of Independent States[3,4]	**24.6**	**9.5**	**9.7**	**15.5**	**11.1**	**7.1**	**9.8**	**6.2**	**6.4**	**7.9**	**7.9**	**4.9**	**6.1**	**9.2**	**7.0**
Russia	25.5	9.7	9.0	14.1	11.7	6.9	8.4	5.1	6.8	7.4	7.3	4.0	6.5	8.3	6.5
Excluding Russia	21.9	8.9	11.7	19.2	9.7	7.8	13.2	9.1	5.6	8.9	9.3	6.8	5.2	11.2	8.2
Armenia	5.6	3.0	4.6	9.0	3.5	7.3	7.7	2.5	5.8	1.8	3.8	4.0	5.6	2.4	3.6
Azerbaijan	3.7	8.4	16.6	20.8	1.6	5.7	7.9	1.0	2.4	2.8	3.0	4.0	3.6	2.0	3.9
Belarus	67.7	7.0	8.4	14.8	13.0	7.7	53.2	59.2	18.3	18.6	16.9	16.5	16.5	18.4	17.0
Georgia	9.7	9.2	9.2	10.0	1.7	7.1	8.5	–0.9	–0.5	4.6	4.9	5.0	2.4	5.0	5.0
Kazakhstan	11.7	8.6	10.8	17.1	7.3	7.1	8.3	5.1	5.8	6.9	6.1	5.9	4.8	8.4	6.1
Kyrgyz Republic	13.5	5.6	10.2	24.5	6.8	7.8	16.6	2.8	6.6	8.0	8.9	5.5	4.0	9.8	9.4
Moldova	16.0	12.7	12.4	12.7	0.0	7.4	7.6	4.6	4.6	5.1	5.7	5.0	5.2	5.0	6.5
Tajikistan	47.6	10.0	13.2	20.4	6.5	6.5	12.4	5.8	5.0	6.6	8.3	6.0	3.7	8.4	7.3
Turkmenistan	47.0	8.2	6.3	14.5	–2.7	4.4	5.3	5.3	6.8	5.0	5.5	5.0	4.0	6.0	5.0
Ukraine	18.2	9.1	12.8	25.2	15.9	9.4	8.0	0.6	–0.3	11.4	14.0	4.3	0.5	19.0	9.0
Uzbekistan	27.8	14.2	12.3	12.7	14.1	9.4	12.8	12.1	11.2	10.0	11.2	11.0	10.2	11.0	11.3
Emerging and Developing Asia	**4.5**	**4.7**	**5.4**	**7.6**	**2.9**	**5.1**	**6.5**	**4.7**	**4.7**	**4.1**	**4.2**	**3.9**	**4.5**	**4.0**	**4.2**
Bangladesh	4.9	6.8	9.1	8.9	5.4	8.1	10.7	6.2	7.5	7.2	6.7	5.7	7.3	6.8	6.5
Bhutan	5.7	4.9	5.2	6.3	7.1	4.8	8.6	10.1	8.7	10.2	8.8	6.7	10.0	9.6	8.4
Brunei Darussalam	0.5	0.2	1.0	2.1	1.0	0.2	0.1	0.1	0.4	0.4	0.5	0.6	0.1	0.4	0.5
Cambodia	4.2	6.1	7.7	25.0	–0.7	4.0	5.5	2.9	3.0	4.5	3.5	2.9	4.7	4.2	3.0
China	1.6	1.5	4.8	5.9	–0.7	3.3	5.4	2.6	2.6	2.3	2.5	3.0	2.5	2.3	2.5
Fiji	2.9	2.5	4.8	7.7	3.7	3.7	7.3	3.4	2.9	1.2	3.0	2.9	3.4	2.7	3.0
India	5.7	7.0	5.9	9.2	10.6	9.5	9.5	10.2	9.5	7.8	7.5	6.0	8.3	7.6	7.3
Indonesia	13.5	13.1	6.7	9.8	5.0	5.1	5.3	4.0	6.4	6.0	6.7	5.0	8.1	5.2	6.7
Kiribati	1.6	–1.0	3.6	13.7	9.8	–3.9	1.5	–3.0	–1.5	2.5	2.5	2.5	0.8	2.5	2.5
Lao P.D.R.	28.7	6.8	4.5	7.6	0.0	6.0	7.6	4.3	6.4	5.5	5.3	6.0	6.6	5.0	5.5
Malaysia	2.4	3.6	2.0	5.4	0.6	1.7	3.2	1.7	2.1	2.9	4.1	2.9	3.2	2.9	4.1
Maldives	2.1	3.5	6.8	12.0	4.5	6.1	11.3	10.9	4.0	3.0	3.1	4.3	3.1	2.7	2.9
Marshall Islands	. . .	5.3	2.6	14.7	0.5	2.2	4.9	4.5	1.5	1.7	1.8	2.2	1.5	1.7	1.8
Micronesia	. . .	4.6	3.3	8.3	6.2	3.9	5.4	4.6	4.0	3.3	2.7	2.0	4.5	3.3	2.7
Mongolia	13.7	4.5	8.2	26.8	6.3	10.2	7.7	15.0	8.6	14.1	12.4	6.5	11.2	15.8	11.2
Myanmar	. . .	26.3	30.9	11.5	2.2	8.2	2.8	2.8	5.7	6.6	6.3	5.8	6.3	5.9	6.7
Nepal	5.7	8.0	6.2	6.7	12.6	9.5	9.6	8.3	9.9	9.0	7.8	5.8	7.7	8.1	7.5
Palau	. . .	4.8	3.0	10.0	4.7	1.1	2.6	5.4	2.8	3.0	3.5	2.0	3.0	3.5	3.0
Papua New Guinea	9.8	2.4	0.9	10.8	6.9	5.1	4.4	4.5	5.0	5.3	5.0	5.0	2.9	6.3	5.0
Philippines	5.8	5.5	2.9	8.2	4.2	3.8	4.7	3.2	2.9	4.5	3.9	3.5	4.1	4.3	3.5
Samoa	4.7	3.5	4.7	6.3	14.6	–0.2	2.9	6.2	–0.2	–1.2	3.5	3.0	–1.7	0.2	2.8
Solomon Islands	8.8	11.2	7.7	17.3	7.1	0.9	7.4	5.9	5.4	7.0	5.5	4.5	2.5	4.7	2.7
Sri Lanka	9.8	10.0	15.8	22.4	3.5	6.2	6.7	7.5	6.9	3.8	5.4	5.5	4.7	5.2	5.5
Thailand	3.2	4.6	2.2	5.5	–0.9	3.3	3.8	3.0	2.2	2.1	2.0	2.0	1.7	1.7	2.3
Timor-Leste	. . .	5.2	8.6	7.4	–0.2	5.2	13.2	10.9	9.5	2.5	2.4	4.0	4.0	1.0	3.8
Tonga	6.7	6.1	7.4	7.5	3.5	3.9	4.6	2.0	1.1	1.6	2.3	4.7	0.7	1.7	2.8
Tuvalu	. . .	4.2	2.3	10.4	–0.3	–1.9	0.5	1.4	2.0	3.3	3.1	2.8	3.1	3.3	3.1
Vanuatu	2.3	2.0	3.8	4.2	5.2	2.7	0.7	1.4	1.3	1.7	2.2	2.8	1.5	1.8	2.5
Vietnam	4.2	7.5	8.3	23.1	6.7	9.2	18.7	9.1	6.6	5.2	5.2	4.5	6.0	5.3	5.0
Emerging and Developing Europe	**28.3**	**6.0**	**6.0**	**8.0**	**4.8**	**5.5**	**5.4**	**5.9**	**4.2**	**4.0**	**3.8**	**4.1**	**3.5**	**4.2**	**4.1**
Albania	7.8	2.4	2.9	3.4	2.3	3.5	3.4	2.0	1.9	1.8	2.7	3.0	1.9	1.8	3.0
Bosnia and Herzegovina	. . .	6.1	1.5	7.4	–0.4	2.1	3.7	2.0	–0.1	1.1	1.5	2.1	–0.1	1.1	1.5
Bulgaria	46.5	7.4	7.6	12.0	2.5	3.0	3.4	2.4	0.4	–1.2	0.7	2.2	–0.9	0.0	1.3
Croatia	3.5	3.2	2.9	6.1	2.4	1.0	2.3	3.4	2.2	–0.3	0.2	2.5	0.3	–0.1	0.4
Hungary	10.4	3.9	7.9	6.1	4.2	4.9	4.0	5.7	1.7	0.3	2.3	3.0	0.4	1.8	2.8
Kosovo	. . .	0.6	4.4	9.4	–2.4	3.5	7.3	2.5	1.8	1.0	1.6	1.8	0.5	1.7	1.2
Lithuania	. . .	3.8	5.8	11.1	4.2	1.2	4.1	3.2	1.2	0.3	1.3	2.3	0.5	0.5	1.8
FYR Macedonia	2.1	3.2	2.3	8.4	–0.8	1.5	3.9	3.3	2.8	1.0	1.5	2.3	1.4	0.6	2.3
Montenegro	. . .	2.1	3.5	9.0	3.6	0.7	3.1	3.6	2.2	–0.6	1.3	1.4	0.3	0.4	1.3
Poland	7.6	1.0	2.5	4.2	3.4	2.6	4.3	3.7	0.9	0.1	0.8	2.5	0.7	0.0	1.5
Romania	39.3	6.6	4.8	7.8	5.6	6.1	5.8	3.3	4.0	1.5	2.9	2.7	1.6	2.5	3.0
Serbia	. . .	10.7	6.0	12.4	8.1	6.1	11.1	7.3	7.7	2.3	3.4	4.0	2.2	3.3	4.2
Turkey	48.5	9.6	8.8	10.4	6.3	8.6	6.5	8.9	7.5	9.0	7.0	6.2	7.4	9.0	7.1

Table A7. Emerging Market and Developing Economies: Consumer Prices[1] *(continued)*

(Annual percent change)

	Average									Projections			End of Period[2]	Projections	
	1996–2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019	2013	2014	2015
Latin America and the Caribbean[5]	**10.2**	**5.4**	**5.5**	**8.1**	**6.1**	**6.2**	**6.8**	**6.1**	**7.1**	. . .	. . .	. . .	**7.8**	. . .	. . .
Antigua and Barbuda	1.8	1.8	1.4	5.3	–0.6	3.4	3.5	3.4	1.1	1.1	2.0	2.5	1.1	1.4	2.0
Argentina[5]	4.9	10.9	8.8	8.6	6.3	10.5	9.8	10.0	10.6	. . .	. . .	. . .	10.9	. . .	. . .
The Bahamas	1.6	2.1	2.5	4.7	1.9	1.3	3.2	2.0	0.4	1.4	1.9	1.4	0.8	1.4	4.4
Barbados	2.3	7.3	4.0	8.1	3.7	5.7	9.4	4.5	1.8	1.7	2.2	2.8	1.1	2.5	2.0
Belize	1.8	4.2	2.3	6.4	–1.1	0.9	1.7	1.2	0.5	1.8	2.0	2.0	1.6	2.0	2.0
Bolivia	4.7	4.3	6.7	14.0	3.3	2.5	9.9	4.5	5.7	6.0	5.3	5.0	6.5	5.5	5.2
Brazil	8.1	4.2	3.6	5.7	4.9	5.0	6.6	5.4	6.2	6.3	5.9	4.5	5.9	6.2	6.0
Chile	3.9	3.4	4.4	8.7	1.5	1.4	3.3	3.0	1.8	4.4	3.2	3.0	3.0	4.2	3.0
Colombia	10.9	4.3	5.5	7.0	4.2	2.3	3.4	3.2	2.0	2.8	2.6	3.0	1.9	3.3	3.0
Costa Rica	11.9	11.5	9.4	13.4	7.8	5.7	4.9	4.5	5.2	3.4	4.7	4.0	3.7	5.5	4.0
Dominica	1.4	2.6	3.2	6.4	0.0	2.8	1.3	1.4	–0.1	0.6	1.1	1.9	–1.7	2.4	1.0
Dominican Republic	12.2	7.6	6.1	10.6	1.4	6.3	8.5	3.7	4.8	3.6	4.2	4.0	3.9	4.5	4.0
Ecuador	27.8	3.3	2.3	8.4	5.2	3.6	4.5	5.1	2.7	3.1	3.0	3.0	2.7	3.0	3.0
El Salvador	3.6	4.0	4.6	7.3	0.5	1.2	5.1	1.7	0.8	1.2	2.0	2.0	0.8	2.0	2.0
Grenada	1.6	4.3	3.9	8.0	–0.3	3.4	3.0	2.4	0.0	1.6	1.7	2.3	–1.2	1.7	1.6
Guatemala	7.6	6.6	6.8	11.4	1.9	3.9	6.2	3.8	4.3	3.5	4.3	4.0	4.4	4.0	4.3
Guyana	5.4	6.7	12.2	8.1	3.0	3.7	5.0	2.4	2.2	2.6	4.3	3.8	0.9	4.3	4.3
Haiti	16.5	14.2	9.0	14.4	3.4	4.1	7.4	6.8	6.8	4.0	6.6	5.0	4.5	5.8	6.0
Honduras	12.1	5.6	6.9	11.4	5.5	4.7	6.8	5.2	5.2	6.1	5.4	5.0	4.9	6.8	5.5
Jamaica	11.0	8.9	9.2	22.0	9.6	12.6	7.5	6.9	9.4	8.8	8.0	6.2	9.5	8.1	7.8
Mexico	11.8	3.6	4.0	5.1	5.3	4.2	3.4	4.1	3.8	3.9	3.6	3.0	4.0	4.0	3.5
Nicaragua	9.1	9.1	11.1	19.8	3.7	5.5	8.1	7.2	7.1	6.3	7.0	7.0	5.7	7.0	7.0
Panama	1.1	2.5	4.2	8.8	2.4	3.5	5.9	5.7	4.0	3.2	3.4	2.5	3.7	3.0	3.3
Paraguay	8.7	9.6	8.1	10.2	2.6	4.7	8.3	3.7	2.7	4.8	5.0	5.0	3.7	5.1	5.0
Peru	4.4	2.0	1.8	5.8	2.9	1.5	3.4	3.7	2.8	3.2	2.3	2.0	2.9	2.9	2.2
St. Kitts and Nevis	3.2	8.5	4.5	5.3	2.1	0.6	7.1	1.4	0.7	0.6	1.4	2.2	0.4	0.9	1.8
St. Lucia	2.3	3.6	2.8	5.5	–0.2	3.3	2.8	4.2	1.5	2.1	2.2	2.3	–0.7	1.8	2.4
St. Vincent and the Grenadines	1.6	3.0	7.0	10.1	0.4	0.8	3.2	2.6	0.8	1.2	1.5	2.0	0.0	2.2	1.7
Suriname	25.2	11.1	6.6	14.9	0.0	6.9	17.7	5.0	1.9	2.6	3.5	3.0	0.6	3.8	3.2
Trinidad and Tobago	4.4	8.3	7.9	12.0	7.6	10.5	5.1	9.3	5.2	4.7	3.1	3.1	5.6	3.7	2.4
Uruguay	11.8	6.4	8.1	7.9	7.1	6.7	8.1	8.1	8.6	8.8	8.3	6.5	8.5	8.6	8.4
Venezuela	31.0	13.7	18.7	30.4	27.1	28.2	26.1	21.1	40.6	64.3	62.9	33.1	56.2	69.8	55.9
Middle East, North Africa, Afghanistan, and Pakistan	**5.7**	**8.3**	**10.1**	**11.7**	**7.1**	**6.5**	**9.2**	**9.7**	**9.0**	**7.6**	**8.0**	**6.9**	**6.9**	**7.7**	**7.9**
Afghanistan	. . .	6.8	8.7	26.4	–6.8	2.2	11.8	6.4	7.4	6.1	5.5	5.0	7.2	4.0	6.4
Algeria	4.6	2.3	3.7	4.9	5.7	3.9	4.5	8.9	3.3	3.2	4.0	4.0	1.1	4.5	4.0
Bahrain	0.7	2.0	3.3	3.5	2.8	2.0	–0.4	2.8	3.3	2.5	2.4	2.6	4.0	2.6	2.2
Djibouti	2.0	3.5	5.0	12.0	1.7	4.0	5.1	3.7	2.4	3.2	4.0	3.0	2.5	3.5	1.2
Egypt	4.7	4.2	11.0	11.7	16.2	11.7	11.1	8.6	6.9	10.1	13.5	12.0	9.8	8.2	15.0
Iran	15.9	11.9	18.4	25.3	10.8	12.4	21.5	30.5	34.7	19.8	20.0	20.0	19.7	20.0	20.0
Iraq	. . .	53.2	30.8	2.7	–2.2	2.4	5.6	6.1	1.9	4.7	6.2	3.0	3.1	8.0	6.0
Jordan	2.6	6.3	4.7	13.9	–0.7	5.0	4.4	4.6	5.6	3.0	2.6	2.0	3.3	2.5	2.4
Kuwait	1.8	3.1	5.5	6.3	4.6	4.5	4.9	3.2	2.7	3.0	3.5	4.0	2.7	3.0	3.5
Lebanon	2.4	5.6	4.1	10.8	1.2	5.1	7.2	5.9	3.2	3.5	4.0	2.5	1.7	4.6	3.5
Libya	–0.7	1.5	6.2	10.4	2.4	2.5	15.9	6.1	2.6	4.8	6.3	2.5	1.7	7.5	5.4
Mauritania	6.1	6.2	7.3	7.5	2.1	6.3	5.7	4.9	4.1	3.3	4.2	4.9	4.5	4.1	4.4
Morocco	1.6	3.3	2.0	3.9	1.0	1.0	0.9	1.3	1.9	1.1	2.0	2.3	0.4	2.2	1.8
Oman	0.2	3.2	5.9	12.6	3.5	3.3	4.0	2.9	1.2	2.8	2.8	3.7	0.3	2.8	2.8
Pakistan	6.3	8.0	7.8	10.8	17.6	10.1	13.7	11.0	7.4	8.6	8.0	6.0	5.9	8.2	7.5
Qatar	3.6	11.8	13.6	15.2	–4.9	–2.4	1.9	1.9	3.1	3.4	3.5	3.3	2.5	3.4	3.5
Saudi Arabia	–0.3	1.9	5.0	6.1	4.1	3.8	3.7	2.9	3.5	2.9	3.2	3.3	3.0	3.2	3.3
Sudan[6]	21.8	7.2	8.0	14.3	11.3	13.0	18.1	35.5	36.5	38.0	20.6	5.5	41.9	28.7	12.4
Syria[7]	2.2	10.4	4.7	15.2	2.8	4.4	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Tunisia	2.8	4.1	3.4	4.9	3.5	4.4	3.5	5.6	6.1	5.7	5.0	4.0	6.0	5.5	4.5
United Arab Emirates	3.1	9.3	11.1	12.3	1.6	0.9	0.9	0.7	1.1	2.2	2.5	4.4	1.7	2.4	2.8
Yemen	12.8	10.8	7.9	19.0	3.7	11.2	19.5	9.9	11.0	9.0	11.4	7.3	8.1	13.0	9.0

Table A7. Emerging Market and Developing Economies: Consumer Prices[1] *(concluded)*

(Annual percent change)

	Average									Projections			End of Period[2]	Projections	
	1996–2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019	2013	2014	2015
Sub-Saharan Africa	**14.2**	**7.5**	**5.4**	**13.0**	**9.8**	**8.3**	**9.5**	**9.3**	**6.6**	**6.7**	**7.0**	**5.9**	**6.1**	**7.3**	**6.7**
Angola	208.2	13.3	12.2	12.5	13.7	14.5	13.5	10.3	8.8	7.3	7.3	6.3	7.7	7.4	7.2
Benin	3.3	3.8	1.3	7.4	0.9	2.2	2.7	6.7	1.0	1.7	2.8	2.8	–1.8	4.0	2.8
Botswana	8.1	11.6	7.1	12.6	8.1	6.9	8.5	7.5	5.8	4.8	5.4	5.3	4.1	5.4	5.4
Burkina Faso	2.7	2.4	–0.2	10.7	2.6	–0.6	2.8	3.8	0.5	1.5	2.0	2.0	0.1	2.0	2.0
Burundi	12.4	9.0	14.7	25.7	4.6	4.1	14.9	11.8	9.0	7.0	5.4	5.1	9.0	7.0	5.4
Cabo Verde	2.6	4.8	4.4	6.8	1.0	2.1	4.5	2.5	1.5	0.8	2.3	2.5	0.1	2.0	2.5
Cameroon	2.5	4.9	1.1	5.3	3.0	1.3	2.9	2.4	2.1	3.2	2.6	2.2	1.7	3.2	2.6
Central African Republic	1.6	6.7	0.9	9.3	3.5	1.5	1.2	5.9	6.6	7.4	5.7	2.4	5.9	8.4	1.9
Chad	2.9	7.7	–7.4	8.3	10.1	–2.1	1.9	7.7	0.2	2.8	3.1	3.0	0.9	3.7	3.0
Comoros	3.2	3.4	4.5	4.8	4.8	3.9	2.2	5.9	1.6	3.0	2.9	2.9	3.5	3.9	3.0
Democratic Republic of the Congo	137.3	13.2	16.7	18.0	46.2	23.5	15.5	2.1	0.8	2.4	4.1	5.5	1.0	3.7	4.5
Republic of Congo	3.7	4.7	2.6	6.0	4.3	5.0	1.8	5.0	4.6	2.2	2.3	2.5	2.1	2.0	2.4
Côte d'Ivoire	3.1	2.5	1.9	6.3	1.0	1.8	4.4	1.3	2.6	0.6	2.6	2.5	0.4	1.6	1.6
Equatorial Guinea	5.4	4.5	2.8	4.7	5.7	5.3	4.8	3.4	3.2	3.9	3.7	3.0	4.9	3.7	3.4
Eritrea	14.2	15.1	9.3	19.9	33.0	12.7	13.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
Ethiopia	3.3	13.6	17.2	44.4	8.5	8.1	33.2	24.1	8.1	7.7	9.1	9.0	7.7	9.3	9.1
Gabon	1.1	–1.4	–1.0	5.3	1.9	1.4	1.3	2.7	0.5	4.7	2.5	2.5	3.3	1.7	2.5
The Gambia	5.8	2.1	5.4	4.5	4.6	5.0	4.8	4.6	5.2	5.3	5.0	5.0	5.6	5.0	5.0
Ghana	22.5	11.7	10.7	16.5	13.1	6.7	7.7	7.1	11.7	15.7	16.8	11.1	13.5	18.5	15.1
Guinea	8.6	34.7	22.9	18.4	4.7	15.5	21.4	15.2	11.9	10.1	7.8	7.1	10.5	9.4	7.1
Guinea-Bissau	10.7	0.7	4.6	10.4	–1.6	1.1	5.1	2.1	0.8	–1.3	2.9	2.5	–0.1	1.3	2.0
Kenya	7.3	6.0	4.3	15.1	10.6	4.3	14.0	9.4	5.7	7.3	6.0	5.0	7.1	7.7	5.2
Lesotho	7.5	6.1	8.0	10.7	7.4	3.6	5.0	6.2	5.3	6.5	5.9	5.4	5.1	6.3	5.8
Liberia	. . .	9.5	11.4	17.5	7.4	7.3	8.5	6.8	7.6	11.4	9.7	6.3	8.5	13.1	8.1
Madagascar	10.2	10.8	10.4	9.2	9.0	9.3	10.0	5.8	5.8	7.3	6.6	5.0	6.3	8.5	6.0
Malawi	21.9	13.9	8.0	8.7	8.4	7.4	7.6	21.3	28.3	19.6	11.5	5.1	23.5	14.7	9.6
Mali	2.0	1.5	1.5	9.1	2.2	1.3	3.1	5.3	–0.6	1.5	2.6	2.6	0.0	1.5	2.6
Mauritius	5.7	8.9	8.8	9.7	2.5	2.9	6.5	3.9	3.5	3.7	4.3	5.0	3.5	4.2	5.0
Mozambique	12.5	13.2	8.2	10.3	3.3	12.7	10.4	2.1	4.2	4.6	5.6	5.6	3.0	6.0	5.6
Namibia	7.7	5.0	6.5	9.1	9.5	4.9	5.0	6.7	5.6	5.9	5.7	5.5	4.9	5.8	5.7
Niger	2.6	0.1	0.1	11.3	4.3	–2.8	2.9	0.5	2.3	–1.1	2.1	2.0	1.1	–0.3	1.2
Nigeria	13.8	8.2	5.4	11.6	12.5	13.7	10.8	12.2	8.5	8.3	8.7	7.0	7.9	9.0	8.5
Rwanda	6.6	8.8	9.1	15.4	10.3	2.0	5.7	6.3	4.2	2.6	4.7	5.0	3.6	4.5	5.0
São Tomé and Príncipe	22.1	23.1	18.6	32.0	17.0	13.3	14.3	10.6	8.1	6.7	4.8	3.0	7.1	6.0	4.0
Senegal	1.5	2.1	5.9	6.3	–2.2	1.2	3.4	1.4	0.7	–0.5	1.5	1.4	–0.1	1.4	1.5
Seychelles	2.9	–1.9	–8.6	37.0	31.7	–2.4	2.6	7.1	4.3	3.6	2.9	3.0	3.4	3.3	3.2
Sierra Leone	13.2	9.5	11.6	14.8	9.2	17.8	18.5	13.8	9.8	8.8	10.1	5.4	8.5	10.0	9.5
South Africa	5.9	4.7	7.1	11.5	7.1	4.3	5.0	5.7	5.8	6.3	5.8	5.3	5.4	6.3	5.8
South Sudan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	45.1	0.0	0.2	12.1	5.0	–8.8	7.8	5.0
Swaziland	6.5	5.2	8.1	12.7	7.4	4.5	6.1	8.9	5.6	5.8	5.6	5.2	4.4	6.7	5.6
Tanzania	8.4	7.3	7.0	10.3	12.1	7.2	12.7	16.0	7.9	5.9	4.9	4.9	5.6	5.0	5.0
Togo	2.6	2.2	0.9	8.7	3.7	1.4	3.6	2.6	1.8	1.5	2.7	2.5	1.8	2.0	2.7
Uganda	4.8	7.2	6.1	12.0	13.1	4.0	18.7	14.0	5.0	5.5	5.9	5.0	4.8	6.2	5.7
Zambia	24.4	9.0	10.7	12.4	13.4	8.5	8.7	6.6	7.0	8.0	7.8	5.0	7.1	8.5	7.0
Zimbabwe[8]	. . .	33.0	–72.7	157.0	6.2	3.0	3.5	3.7	1.6	0.3	1.2	2.5	0.3	1.2	1.7

[1]Movements in consumer prices are shown as annual averages.
[2]Monthly year-over-year changes and, for several countries, on a quarterly basis.
[3]For many countries, inflation for the earlier years is measured on the basis of a retail price index. Consumer price index (CPI) inflation data with broader and more up-to-date coverage are typically used for more recent years.
[4]Georgia and Turkmenistan, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.
[5]Consumer price data from January 2014 onwards reflect the new national CPI (IPCNu), which differs substantively from the preceding CPI (the CPI for the Greater Buenos Aires Area, CPI-GBA). Because of the differences in geographical coverage, weights, sampling, and methodology, the IPCNu data cannot be directly compared to the earlier CPI-GBA data. Because of this structural break in the data, staff forecasts for CPI inflation are not reported in the Fall 2014 *World Economic Outlook*. Following a declaration of censure by the IMF on February 1, 2013, the public release of a new national CPI by end-March 2014 was one of the specified actions in the IMF Executive Board's December 2013 decision calling on Argentina to address the quality of its official CPI data. On June 6, 2014, the Executive Board recognized the implementation of the specified actions it had called for by end-March 2014 and the initial steps taken by the Argentine authorities to remedy the inaccurate provision of data. The Executive Board will review this issue again as per the calendar specified in December 2013 and in line with the procedures set forth in the Fund's legal framework.
[6]Data for 2011 exclude South Sudan after July 9. Data for 2012 and onward pertain to the current Sudan.
[7]Data for Syria are excluded for 2011 onward owing the uncertain political situation.
[8]The Zimbabwe dollar ceased circulating in early 2009. Data are based on IMF staff estimates of price and exchange rate developments in U.S. dollars. IMF staff estimates of U.S. dollar values may differ from authorities' estimates.

Table A8. Major Advanced Economies: General Government Fiscal Balances and Debt[1]

(Percent of GDP unless noted otherwise)

	Average							Projections		
	1998–2007	2008	2009	2010	2011	2012	2013	2014	2015	2019
Major Advanced Economies										
Net Lending/Borrowing	–3.4	–4.7	–10.3	–9.0	–7.7	–6.8	–5.1	–4.7	–3.8	–2.7
Output Gap[2]	0.5	–0.9	–5.5	–3.8	–3.3	–3.0	–2.9	–2.7	–2.0	–0.1
Structural Balance[2]	–3.7	–4.3	–6.3	–7.3	–6.3	–5.2	–4.0	–3.5	–2.9	–2.6
United States										
Net Lending/Borrowing[3]	–3.4	–7.0	–13.5	–11.3	–9.9	–8.6	–5.8	–5.5	–4.3	–4.0
Output Gap[2]	0.5	–2.6	–6.7	–5.4	–4.9	–4.0	–3.8	–3.5	–2.6	0.0
Structural Balance[2]	–3.3	–5.3	–7.2	–9.1	–7.8	–6.3	–4.8	–4.0	–3.3	–4.0
Net Debt	41.7	50.4	62.1	69.7	76.1	79.4	80.4	80.8	80.9	80.8
Gross Debt	60.7	72.8	86.1	94.8	99.0	102.5	104.2	105.6	105.1	103.7
Euro Area										
Net Lending/Borrowing	–1.9	–2.1	–6.3	–6.2	–4.1	–3.7	–3.0	–2.9	–2.5	–0.7
Output Gap[2]	0.9	2.2	–2.9	–1.8	–0.8	–1.9	–2.8	–2.8	–2.4	–0.5
Structural Balance[2]	–2.6	–3.3	–4.7	–4.7	–3.7	–2.3	–1.2	–1.1	–0.9	–0.2
Net Debt	54.3	54.0	60.0	64.1	66.4	70.1	72.3	73.9	74.0	68.2
Gross Debt	69.6	70.3	80.2	85.9	88.3	92.9	95.2	96.4	96.1	88.2
Germany										
Net Lending/Borrowing	–2.2	–0.1	–3.1	–4.2	–0.8	0.1	0.2	0.3	0.2	0.4
Output Gap[2]	–0.1	2.2	–3.8	–1.5	0.6	0.3	–0.6	–0.7	–0.7	–0.2
Structural Balance[2]	–2.4	–1.0	–1.1	–2.6	–1.2	–0.1	0.6	0.5	0.5	0.4
Net Debt	46.8	50.0	56.5	58.3	56.6	58.2	56.1	53.9	51.6	42.0
Gross Debt	63.4	66.8	74.6	82.5	80.0	81.0	78.4	75.5	72.5	60.5
France										
Net LendingBorrowing	–2.5	–3.2	–7.2	–6.8	–5.1	–4.9	–4.2	–4.4	–4.3	–1.0
Output Gap[2]	1.4	1.0	–3.1	–2.1	–0.9	–1.5	–2.2	–2.8	–3.0	–1.2
Structural Balance[2]	–3.4	–3.9	–5.4	–5.6	–4.5	–3.8	–2.8	–2.7	–2.4	–0.5
Net Debt	53.8	60.3	70.1	73.7	76.4	81.6	84.7	88.1	90.6	88.8
Gross Debt	60.9	67.0	78.0	80.8	84.4	88.7	91.8	95.2	97.7	95.9
Italy										
Net Lending/Borrowing	–2.9	–2.7	–5.4	–4.4	–3.6	–2.9	–3.0	–3.0	–2.3	–0.4
Output Gap[2]	1.7	1.9	–3.4	–1.6	–1.3	–2.8	–4.2	–4.3	–3.5	–0.6
Structural Balance[2,4]	–4.4	–4.0	–4.2	–3.8	–3.7	–1.6	–0.6	–0.8	–0.3	0.0
Net Debt	91.6	89.3	97.5	99.7	102.0	106.1	110.8	114.3	114.0	105.0
Gross Debt	107.3	106.1	116.4	119.3	120.7	127.0	132.5	136.7	136.4	125.6
Japan										
Net Lending/Borrowing	–5.8	–4.1	–10.4	–9.3	–9.8	–8.7	–8.2	–7.1	–5.8	–4.7
Output Gap[2]	–1.1	–1.4	–7.1	–3.1	–3.9	–3.1	–2.1	–1.6	–1.1	0.0
Structural Balance[2]	–5.5	–3.5	–7.4	–7.8	–8.3	–7.6	–7.6	–6.7	–5.5	–4.7
Net Debt	70.0	95.3	106.2	113.1	127.3	129.5	134.0	137.8	140.0	140.7
Gross Debt[5]	162.4	191.8	210.2	216.0	229.8	237.3	243.2	245.1	245.5	241.3
United Kingdom										
Net Lending/Borrowing	–1.3	–5.0	–11.3	–10.0	–7.8	–8.0	–5.8	–5.3	–4.1	–0.2
Output Gap[2]	1.9	1.7	–2.2	–1.9	–2.5	–3.0	–2.7	–1.2	–0.4	0.0
Structural Balance[2]	–2.7	–6.7	–10.3	–8.4	–6.0	–5.8	–3.8	–4.1	–3.6	–0.2
Net Debt	36.4	47.5	61.9	71.6	76.2	80.9	82.5	83.9	85.0	76.8
Gross Debt	41.1	51.9	67.1	78.5	84.3	89.1	90.6	92.0	93.1	84.9
Canada										
Net Lending/Borrowing	1.2	–0.3	–4.5	–4.9	–3.7	–3.4	–3.0	–2.6	–2.1	–0.8
Output Gap[2]	1.4	0.9	–3.5	–2.0	–1.4	–1.6	–1.4	–1.0	–0.6	0.0
Structural Balance[2]	0.4	–0.9	–2.4	–3.6	–2.9	–2.4	–2.2	–2.0	–1.7	–0.9
Net Debt	41.8	24.3	29.9	32.9	35.1	36.7	37.6	38.6	39.1	37.5
Gross Debt	78.4	70.8	83.0	84.6	85.9	88.1	88.8	88.1	86.8	83.1

Note: The methodology and specific assumptions for each country are discussed in Box A1. The country group composites for fiscal data are calculated as the sum of the U.S. dollar values for the relevant individual countries.

[1]Debt data refer to the end of the year and are not always comparable across countries. Gross and net debt levels reported by national statistical agencies for countries that have adopted the System of National Accounts (SNA) 2008 (Australia, Canada, Hong Kong SAR, and United States) are adjusted to exclude unfunded pension liabilities of government employees defined-benefit pension plans. Fiscal data for the aggregated Major Advanced Economies and the United States start in 2001, and the average for the aggregate and the United States is therefore for the period 2001–07.

[2]Percent of potential GDP.

[3]Figures reported by the national statistical agency are adjusted to exclude items related to the accrual-basis accounting of government employees defined-benefit pension plans.

[4]Excludes one-time measures based on the authorities data and, in the absence of the latter, receipts from the sale of assets.

[5]Includes equity shares.

Table A9. Summary of World Trade Volumes and Prices

(Annual percent change)

	Averages										Projections	
	1996–2005	2006–15	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Trade in Goods and Services												
World Trade[1]												
Volume	6.7	4.2	9.2	8.1	3.0	–10.6	12.6	6.7	2.9	3.0	3.8	5.0
Price Deflator												
In U.S. Dollars	0.7	2.6	5.0	7.7	11.4	–10.4	5.7	11.1	–1.7	–0.3	–0.3	–0.5
In SDRs	1.0	2.2	5.4	3.5	7.9	–8.2	6.9	7.4	1.3	0.4	–1.4	–0.3
Volume of Trade												
Exports												
Advanced Economies	6.0	3.6	8.9	7.1	2.2	–11.6	12.2	6.2	2.0	2.4	3.6	4.5
Emerging Market and Developing Economies	8.2	5.5	10.9	9.7	4.5	–7.6	13.5	7.2	4.6	4.4	3.9	5.8
Imports												
Advanced Economies	6.6	2.8	7.9	5.5	0.6	–12.2	11.7	5.3	1.2	1.4	3.7	4.3
Emerging Market and Developing Economies	7.8	7.2	12.0	15.4	9.0	–8.0	14.3	9.8	6.0	5.3	4.4	6.1
Terms of Trade												
Advanced Economies	–0.1	–0.3	–1.3	0.3	–2.2	2.5	–0.9	–1.8	–0.4	0.9	0.2	–0.2
Emerging Market and Developing Economies	1.5	0.9	3.1	1.8	3.5	–5.2	2.4	3.7	0.7	–0.2	0.0	–0.6
Trade in Goods												
World Trade[1]												
Volume	6.8	4.0	9.1	7.3	2.4	–11.9	14.0	6.8	2.7	2.7	3.8	5.1
Price Deflator												
In U.S. Dollars	0.5	2.8	5.5	8.0	12.5	–11.5	6.7	12.6	–1.8	–0.7	–0.4	–0.7
In SDRs	0.8	2.4	6.0	3.8	8.9	–9.3	7.9	8.9	1.2	0.1	–1.5	–0.5
World Trade Prices in U.S. Dollars[2]												
Manufactures	–0.4	1.4	2.4	5.4	6.3	–6.4	2.3	6.0	0.4	–1.1	–0.2	–0.5
Oil	12.0	6.4	20.5	10.7	36.4	–36.3	27.9	31.6	1.0	–0.9	–1.3	–3.3
Nonfuel Primary Commodities	0.0	4.6	23.1	13.9	7.9	–15.8	26.5	17.9	–10.0	–1.2	–3.0	–4.1
Food	–0.4	4.6	10.2	14.8	24.5	–14.8	11.9	19.9	–2.4	1.1	–4.1	–7.9
Beverages	–2.3	6.0	8.4	13.8	23.3	1.6	14.1	16.6	–18.6	–11.9	19.6	1.1
Agricultural Raw Materials	–1.8	3.4	8.7	5.0	–0.7	–17.1	33.2	22.7	–12.7	1.6	2.4	0.6
Metal	2.8	5.2	56.2	17.4	–7.8	–19.2	48.2	13.5	–16.8	–4.3	–7.5	–1.8
World Trade Prices in SDRs[2]												
Manufactures	–0.1	1.0	2.8	1.3	2.9	–4.1	3.4	2.4	3.5	–0.3	–1.3	–0.3
Oil	12.3	6.0	21.0	6.4	32.1	–34.8	29.3	27.2	4.1	–0.1	–2.4	–3.1
Nonfuel Primary Commodities	0.2	4.2	23.6	9.5	4.5	–13.7	27.9	13.9	–7.3	–0.4	–4.1	–3.9
Food	–0.1	4.2	10.7	10.3	20.5	–12.7	13.1	15.8	0.6	1.9	–5.2	–7.8
Beverages	–2.1	5.6	8.8	9.4	19.4	4.1	15.4	12.7	–16.1	–11.2	18.3	1.3
Agricultural Raw Materials	–1.6	3.1	9.2	0.9	–3.8	–15.1	34.6	18.6	–10.0	2.4	1.3	0.7
Metal	3.1	4.8	56.9	12.8	–10.7	–17.2	49.8	9.7	–14.3	–3.5	–8.5	–1.6
World Trade Prices in Euros[2]												
Manufactures	0.1	0.6	1.6	–3.5	–1.0	–1.1	7.4	1.0	8.7	–4.3	–2.1	0.3
Oil	12.5	5.6	19.5	1.4	27.1	–32.7	34.3	25.5	9.3	–4.1	–3.2	–2.5
Nonfuel Primary Commodities	0.5	3.8	22.1	4.3	0.5	–11.0	32.8	12.4	–2.6	–4.3	–4.9	–3.3
Food	0.1	3.8	9.3	5.1	15.9	–9.9	17.4	14.3	5.7	–2.1	–6.0	–7.2
Beverages	–1.8	5.2	7.5	4.2	14.8	7.3	19.8	11.2	–11.9	–14.7	17.3	1.9
Agricultural Raw Materials	–1.3	2.7	7.9	–3.8	–7.5	–12.5	39.8	17.0	–5.5	–1.6	0.5	1.4
Metal	3.3	4.4	55.0	7.5	–14.1	–14.6	55.5	8.3	–10.0	–7.3	–9.3	–1.0

Table A9. Summary of World Trade Volumes and Prices *(concluded)*

(Annual percent change)

	Averages										Projections	
	1996–2005	2006–15	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Trade in Goods												
Volume of Trade												
Exports												
Advanced Economies	5.8	3.3	8.9	6.1	1.4	–13.5	14.5	6.0	1.7	1.9	3.6	4.6
Emerging Market and Developing Economies	8.3	5.4	10.2	9.0	3.8	–7.8	13.5	7.3	5.1	4.3	4.0	5.7
Fuel Exporters	4.8	2.4	4.2	4.3	3.1	–6.7	3.5	5.3	5.8	0.9	0.9	3.7
Nonfuel Exporters	9.7	6.6	12.9	11.3	4.1	–8.4	17.6	8.2	4.8	5.9	5.3	6.5
Imports												
Advanced Economies	6.7	2.5	8.1	4.7	0.1	–13.7	13.5	5.2	0.5	1.3	3.4	4.5
Emerging Market and Developing Economies	8.1	7.0	11.5	15.2	8.5	–9.5	14.8	10.5	6.0	4.8	4.5	6.2
Fuel Exporters	7.9	7.7	12.8	23.5	14.3	–11.9	7.3	9.1	10.6	4.9	3.3	6.3
Nonfuel Exporters	8.2	6.9	11.2	13.2	7.0	–8.8	16.8	10.8	5.0	4.7	4.8	6.2
Price Deflators in SDRs												
Exports												
Advanced Economies	0.0	1.7	3.8	3.3	6.0	–6.6	4.4	6.4	0.2	1.2	–1.0	–0.3
Emerging Market and Developing Economies	3.8	4.0	11.2	5.9	14.8	–13.8	14.4	13.2	2.3	–0.8	–2.2	–1.1
Fuel Exporters	8.7	5.9	18.3	8.0	25.6	–26.0	24.3	23.8	3.0	–1.3	–2.8	–2.2
Nonfuel Exporters	1.8	3.1	7.9	4.9	9.8	–7.6	10.3	8.7	1.9	–0.5	–1.9	–0.7
Imports												
Advanced Economies	0.2	2.0	5.4	3.1	8.3	–9.7	5.9	8.8	1.0	0.1	–1.1	–0.2
Emerging Market and Developing Economies	2.1	2.9	7.2	4.0	10.1	–8.3	11.1	8.6	2.1	–0.6	–2.4	–0.7
Fuel Exporters	1.2	2.8	8.5	3.9	8.2	–6.0	8.4	7.3	1.8	–0.4	–1.8	–0.7
Nonfuel Exporters	2.3	2.9	6.9	4.1	10.6	–8.9	11.8	8.9	2.1	–0.7	–2.6	–0.7
Terms of Trade												
Advanced Economies	–0.2	–0.4	–1.5	0.2	–2.1	3.4	–1.4	–2.3	–0.8	1.1	0.1	–0.1
Emerging Market and Developing Economies	1.7	1.0	3.8	1.8	4.2	–6.0	3.0	4.2	0.2	–0.2	0.2	–0.4
Regional Groups												
Commonwealth of Independent States[3]	5.0	2.5	7.9	1.9	15.9	–17.4	12.9	11.3	0.8	–0.9	–2.0	–0.8
Emerging and Developing Asia	–1.4	–0.3	–0.6	0.4	–1.1	3.0	–6.0	–2.3	1.2	1.0	0.9	0.7
Emerging and Developing Europe	0.0	–0.5	–1.1	1.7	–2.7	3.5	–4.1	–2.0	0.1	0.9	0.2	–1.6
Latin America and the Caribbean	1.5	1.9	7.4	2.5	3.7	–8.3	11.9	7.8	–2.4	–2.0	0.6	–1.0
Middle East, North Africa, Afghanistan, and Pakistan	6.9	2.4	6.9	3.3	12.9	–18.2	12.0	14.9	–0.6	–0.4	–0.1	–1.9
Middle East and North Africa	7.3	2.6	7.1	3.2	13.6	–18.6	12.0	15.2	–0.1	–0.5	–0.1	–1.8
Sub-Saharan Africa	. . .	2.4	7.6	5.0	9.1	–12.9	13.3	9.9	–1.3	–1.8	–1.2	–1.0
Analytical Groups												
By Source of Export Earnings												
Fuel Exporters	7.4	3.0	9.1	3.9	16.1	–21.2	14.7	15.4	1.2	–1.0	–1.0	–1.5
Nonfuel Exporters	–0.4	0.2	1.0	0.8	–0.7	1.5	–1.3	–0.2	–0.2	0.2	0.7	0.1
Memorandum												
World Exports in Billions of U.S. Dollars												
Goods and Services	8,368	20,259	14,703	17,147	19,654	15,737	18,736	22,178	22,446	23,114	23,928	24,948
Goods	6,728	16,312	11,848	13,741	15,827	12,348	15,026	18,035	18,222	18,671	19,299	20,107
Average Oil Price[4]	1.7	–0.6	20.5	10.7	36.4	–36.3	27.9	31.6	1.0	–0.9	–1.3	–3.3
In U.S. Dollars a Barrel	26.82	88.85	64.27	71.13	97.04	61.78	79.03	104.01	105.01	104.07	102.76	99.36
Export Unit Value of Manufactures[5]	–0.3	–0.6	2.4	5.4	6.3	–6.4	2.3	6.0	0.4	–1.1	–0.2	–0.5

Note: SDRs = Special Drawing Rights.

[1]Average of annual percent change for world exports and imports.

[2]As represented, respectively, by the export unit value index for manufactures of the advanced economies and accounting for 83 percent of the advanced economies' trade (export of goods) weights; the average of U.K. Brent, Dubai Fateh, and West Texas Intermediate crude oil prices; and the average of world market prices for nonfuel primary commodities weighted by their 2002–04 shares in world commodity exports.

[3]Georgia and Turkmenistan, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.

[4]Percent change of average of U.K. Brent, Dubai Fateh, and West Texas Intermediate crude oil prices.

[5]Percent change for manufactures exported by the advanced economies.

Table A10. Summary of Current Account Balances

(Billions of U.S. dollars)

									Projections		
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019
Advanced Economies	**–446.5**	**–341.9**	**–517.5**	**–68.0**	**–16.7**	**–80.8**	**–45.1**	**181.6**	**125.2**	**93.7**	**95.2**
United States	–806.7	–718.6	–686.6	–380.8	–443.9	–459.3	–460.8	–400.3	–430.9	–483.6	–615.3
Euro Area	–20.6	3.3	–212.4	–16.4	13.0	16.7	171.2	302.6	259.0	262.4	288.0
Germany	173.4	237.3	217.5	199.4	194.6	228.1	252.3	254.9	237.0	228.4	227.3
France	–13.0	–25.9	–49.6	–35.0	–33.8	–49.0	–57.1	–36.9	–41.3	–30.7	0.4
Italy	–27.5	–27.6	–65.9	–41.0	–70.3	–65.6	–6.0	20.5	25.5	25.9	–5.9
Spain	–110.9	–144.3	–154.1	–70.4	–62.3	–54.2	–16.0	10.6	1.4	5.2	22.8
Japan	174.5	212.1	142.6	145.3	217.6	126.5	58.7	33.6	45.4	54.9	76.4
United Kingdom	–70.7	–62.5	–25.5	–31.4	–61.9	–36.0	–94.6	–113.8	–120.0	–113.1	–52.8
Canada	17.9	11.4	1.8	–40.0	–56.7	–49.0	–62.3	–58.5	–47.9	–47.5	–42.6
Other Advanced Economies[1]	194.0	184.2	158.5	198.8	268.7	247.5	272.9	364.5	346.3	345.9	354.4
Emerging Market and Developing Economies	**633.7**	**603.6**	**670.8**	**246.7**	**323.0**	**416.9**	**387.9**	**231.2**	**229.9**	**176.9**	**163.8**
Regional Groups											
Commonwealth of Independent States[2]	93.9	65.3	108.2	42.8	69.1	107.9	67.2	17.0	52.8	58.0	57.8
Russia	92.3	71.3	103.9	50.4	67.5	97.3	71.3	32.8	55.9	64.6	58.1
Excluding Russia	1.6	–6.0	4.3	–7.6	1.6	10.6	–4.1	–15.7	–3.1	–6.6	–0.3
Emerging and Developing Asia	272.7	395.7	425.9	274.9	237.2	99.7	122.5	140.0	149.9	178.3	357.6
China	231.8	353.2	420.6	243.3	237.8	136.1	215.4	182.8	185.3	220.6	459.0
India	–9.6	–15.7	–27.9	–38.2	–45.9	–78.2	–88.2	–32.4	–42.5	–50.2	–81.3
ASEAN-5[3]	44.8	53.3	31.1	65.8	45.2	50.0	8.0	–0.3	14.8	13.2	–7.6
Emerging and Developing Europe	–84.1	–129.7	–154.5	–50.3	–84.5	–120.0	–82.8	–74.5	–61.7	–73.5	–110.4
Latin America and the Caribbean	46.2	6.0	–38.9	–29.8	–63.7	–81.4	–107.2	–152.5	–145.2	–159.7	–194.1
Brazil	13.6	1.6	–28.2	–24.3	–47.3	–52.5	–54.2	–81.1	–79.6	–85.8	–102.4
Mexico	–7.8	–14.7	–20.0	–8.2	–3.9	–12.6	–15.1	–25.9	–25.2	–27.7	–37.6
Middle East, North Africa, Afghanistan, and Pakistan	275.6	256.0	332.4	39.1	175.1	420.3	418.9	339.6	277.5	231.0	131.5
Sub-Saharan Africa	29.5	10.3	–2.2	–30.1	–10.2	–9.6	–30.7	–38.5	–43.3	–57.2	–78.6
South Africa	–13.9	–19.9	–19.6	–11.5	–7.2	–9.4	–20.0	–20.4	–19.6	–19.9	–19.8
Analytical Groups											
By Source of Export Earnings											
Fuel	472.7	412.2	578.1	135.7	311.6	628.7	593.4	457.0	411.6	367.5	256.7
Nonfuel	161.0	191.4	92.7	111.1	11.5	–211.8	–205.5	–225.8	–181.7	–190.5	–92.9
Of Which, Primary Products	–10.7	–16.0	–31.8	–20.9	–13.2	–24.7	–59.1	–60.2	–51.4	–49.5	–55.4
By External Financing Source											
Net Debtor Economies	–111.8	–232.0	–370.4	–206.8	–284.3	–399.6	–458.0	–448.4	–422.3	–468.6	–604.6
Of Which, Official Financing	–13.5	–20.4	–31.0	–13.9	–9.8	–11.8	–18.2	–13.1	–18.2	–20.5	–25.5
Net Debtor Economies by Debt-Servicing Experience											
Economies with Arrears and/or Rescheduling during 2009–13	3.5	–1.2	–7.0	–15.8	–21.2	–28.2	–42.3	–47.5	–42.2	–60.0	–67.3
Memorandum											
World	**187.2**	**261.7**	**153.3**	**178.7**	**306.3**	**336.1**	**342.8**	**412.8**	**355.2**	**270.6**	**259.0**
European Union	–33.1	–71.1	–178.7	9.6	5.1	64.5	168.6	295.0	262.3	269.9	353.4
Low-Income Developing Countries	26.8	2.9	–10.2	–24.7	–18.8	–27.1	–40.2	–40.5	–41.9	–51.0	–88.1
Middle East and North Africa	280.6	262.3	345.7	48.2	178.6	419.5	422.7	341.2	279.4	234.5	139.4

Table A10. Summary of Current Account Balances *(continued)*

(Percent of GDP)

	2006	2007	2008	2009	2010	2011	2012	2013	Projections 2014	2015	2019
Advanced Economies	**–1.2**	**–0.8**	**–1.2**	**–0.2**	**0.0**	**–0.2**	**–0.1**	**0.4**	**0.3**	**0.2**	**0.2**
United States	–5.8	–5.0	–4.7	–2.6	–3.0	–3.0	–2.9	–2.4	–2.5	–2.6	–2.8
Euro Area	–0.2	0.0	–1.6	–0.1	0.1	0.1	1.4	2.4	2.0	1.9	1.8
Germany	6.0	7.1	6.0	6.0	5.9	6.3	7.4	7.0	6.2	5.8	5.0
France	–0.6	–1.0	–1.7	–1.3	–1.3	–1.7	–2.1	–1.3	–1.4	–1.0	0.0
Italy	–1.5	–1.3	–2.8	–1.9	–3.4	–3.0	–0.3	1.0	1.2	1.2	–0.2
Spain	–9.0	–10.0	–9.6	–4.8	–4.5	–3.7	–1.2	0.8	0.1	0.4	1.4
Japan	4.0	4.9	2.9	2.9	4.0	2.1	1.0	0.7	1.0	1.1	1.4
United Kingdom	–2.8	–2.2	–0.9	–1.4	–2.7	–1.5	–3.8	–4.5	–4.2	–3.8	–1.4
Canada	1.4	0.8	0.1	–2.9	–3.5	–2.8	–3.4	–3.2	–2.7	–2.5	–2.0
Other Advanced Economies[1]	4.5	3.7	3.0	4.1	4.8	3.9	4.3	5.5	5.1	4.8	4.0
Emerging Market and Developing Economies	**4.8**	**3.7**	**3.5**	**1.3**	**1.5**	**1.6**	**1.4**	**0.8**	**0.8**	**0.5**	**0.4**
Regional Groups											
Commonwealth of Independent States[2]	7.2	3.8	5.0	2.6	3.4	4.3	2.5	0.6	1.9	2.1	1.6
Russia	9.3	5.5	6.3	4.1	4.4	5.1	3.5	1.6	2.7	3.1	2.2
Excluding Russia	0.5	–1.5	0.8	–1.8	0.3	1.8	–0.6	–2.2	–0.5	–0.9	0.0
Emerging and Developing Asia	5.6	6.6	5.8	3.4	2.5	0.9	1.0	1.0	1.0	1.1	1.6
China	8.3	10.1	9.2	4.8	4.0	1.9	2.6	1.9	1.8	2.0	3.0
India	–1.0	–1.3	–2.3	–2.8	–2.7	–4.2	–4.7	–1.7	–2.1	–2.2	–2.6
ASEAN-5[3]	4.9	4.8	2.4	5.2	2.8	2.7	0.4	0.0	0.7	0.6	–0.2
Emerging and Developing Europe	–6.5	–8.1	–8.2	–3.2	–4.9	–6.4	–4.6	–3.9	–3.2	–3.5	–4.2
Latin America and the Caribbean	1.4	0.2	–0.9	–0.7	–1.3	–1.4	–1.9	–2.7	–2.5	–2.6	–2.6
Brazil	1.3	0.1	–1.7	–1.5	–2.2	–2.1	–2.4	–3.6	–3.5	–3.6	–3.5
Mexico	–0.8	–1.4	–1.8	–0.9	–0.4	–1.1	–1.3	–2.1	–1.9	–2.0	–2.2
Middle East, North Africa, Afghanistan, and Pakistan	15.5	12.3	12.8	1.7	6.5	13.2	12.7	10.0	7.8	6.2	2.7
Sub-Saharan Africa	3.7	1.1	–0.2	–3.0	–0.8	–0.7	–2.0	–2.4	–2.6	–3.2	–3.3
South Africa	–5.3	–7.0	–7.2	–4.0	–2.0	–2.3	–5.2	–5.8	–5.7	–5.6	–4.6
Analytical Groups											
By Source of Export Earnings											
Fuel	15.0	10.6	11.7	3.4	6.4	10.5	9.4	7.0	6.2	5.3	2.9
Nonfuel	1.6	1.6	0.6	0.8	0.1	–1.1	–1.0	–1.0	–0.8	–0.7	–0.3
Of Which, Primary Products	–1.8	–2.3	–4.4	–2.9	–1.5	–2.4	–5.7	–5.7	–4.9	–4.4	–3.8
By External Financing Source											
Net Debtor Economies	–1.6	–2.7	–3.8	–2.2	–2.6	–3.2	–3.7	–3.5	–3.2	–3.3	–3.3
Of Which, Official Financing	–3.7	–4.9	–6.3	–2.8	–1.9	–2.2	–3.2	–2.1	–2.7	–2.8	–2.5
Net Debtor Economies by Debt-Servicing Experience											
Economies with Arrears and/or Rescheduling during 2009–13	0.6	–0.2	–0.8	–1.8	–2.0	–2.4	–3.3	–3.6	–3.2	–4.3	–3.6
Memorandum											
World	**0.4**	**0.5**	**0.2**	**0.3**	**0.5**	**0.5**	**0.5**	**0.6**	**0.5**	**0.3**	**0.3**
European Union	–0.2	–0.4	–1.0	0.1	0.0	0.4	1.0	1.7	1.4	1.4	1.6
Low-Income Developing Countries	3.5	0.3	–0.9	–2.3	–1.5	–1.8	–2.5	–2.3	–2.2	–2.4	–3.1
Middle East and North Africa	17.2	13.6	14.4	2.2	7.1	14.2	13.8	10.9	8.6	6.8	3.2

Table A10. Summary of Current Account Balances *(concluded)*

(Percent of exports of goods and services)

	2006	2007	2008	2009	2010	2011	2012	2013	Projections 2014	2015	2019
Advanced Economies	**–4.5**	**–3.0**	**–4.0**	**–0.7**	**–0.1**	**–0.6**	**–0.3**	**1.3**	**0.9**	**0.6**	**0.5**
United States	–55.3	–43.5	–37.3	–24.1	–23.9	–21.6	–20.8	–17.6	–18.4	–19.8	–20.2
Euro Area	–0.9	0.1	–6.9	–0.7	0.5	0.5	5.2	8.8	. . .	. . .	. . .
Germany	14.0	16.0	13.3	15.4	13.5	13.6	15.6	15.0	13.4	12.4	9.6
France	–2.2	–3.8	–6.6	–5.3	–4.8	–6.0	–7.4	–4.6	–5.0	–3.6	0.0
Italy	–5.3	–4.5	–10.0	–8.2	–12.9	–10.4	–1.0	3.3	3.9	3.8	–0.7
Spain	–33.9	–36.8	–36.0	–20.0	–16.3	–12.1	–3.7	2.3	0.3	1.0	3.3
Japan	24.0	26.4	16.0	21.7	25.1	13.6	6.4	4.1	5.4	6.2	7.6
United Kingdom	–9.9	–8.2	–3.2	–5.0	–8.9	–4.6	–12.0	–14.4	–14.3	–12.8	–4.5
Canada	3.9	2.3	0.3	–10.3	–12.1	–9.0	–11.4	–10.7	–8.5	–8.1	–6.1
Other Advanced Economies[1]	8.0	6.6	5.0	7.6	8.3	6.5	7.1	9.2	8.4	8.0	6.6
Emerging Market and Developing Economies	**13.7**	**10.9**	**9.9**	**4.6**	**4.8**	**5.0**	**4.5**	**2.6**	**2.5**	**1.8**	**1.3**
Regional Groups											
Commonwealth of Independent States[2]	19.5	11.2	13.7	8.2	10.3	12.2	7.4	1.9	5.9	6.4	5.6
Russia	27.7	18.3	19.9	14.7	15.3	17.0	12.1	5.5	9.4	10.7	8.8
Excluding Russia	1.1	–3.1	1.6	–4.2	0.7	3.4	–1.3	–5.1	–1.0	–2.2	–0.1
Emerging and Developing Asia	15.5	18.1	16.6	12.5	8.3	2.9	3.3	3.6	3.6	4.0	6.1
China	23.8	28.1	28.2	19.3	14.4	6.8	9.8	7.7	7.4	8.2	12.7
India	–4.7	–6.1	–9.5	–13.7	–12.0	–17.3	–19.5	–6.9	–8.6	–9.4	–11.5
ASEAN-5[3]	8.4	8.7	4.4	10.9	6.0	5.5	0.9	0.0	1.5	1.2	–0.6
Emerging and Developing Europe	–18.5	–22.8	–22.3	–9.1	–13.6	–16.2	–11.2	–9.4	–7.3	–8.4	–9.8
Latin America and the Caribbean	6.0	0.7	–3.9	–3.7	–6.4	–6.7	–8.6	–12.2	–11.6	–12.4	–11.9
Brazil	8.7	0.8	–12.4	–13.5	–20.4	–18.0	–19.4	–29.1	–28.4	–30.5	–27.5
Mexico	–2.9	–5.1	–6.5	–3.3	–1.2	–3.4	–3.9	–6.5	–6.2	–6.5	–6.4
Middle East, North Africa, Afghanistan, and Pakistan	31.4	24.9	24.9	4.0	14.7	27.4	25.5	20.8	17.0	13.9	6.5
Sub-Saharan Africa	11.1	3.2	–0.6	–10.3	–2.7	–2.0	–6.5	–8.2	–9.0	–11.5	–13.0
South Africa	–17.7	–22.1	–20.0	–14.8	–6.9	–7.6	–17.5	–18.7	–18.2	–18.2	–15.1
Analytical Groups											
By Source of Export Earnings											
Fuel	34.0	25.3	26.7	9.2	16.7	25.1	22.4	17.4	15.7	13.8	8.4
Nonfuel	5.0	4.9	2.0	2.9	0.2	–3.6	–3.4	–3.6	–2.8	–2.7	–1.0
Of Which, Primary Products	–5.2	–6.5	–11.8	–9.3	–4.5	–7.2	–18.2	–18.5	–15.5	–14.1	–12.7
By External Financing Source											
Net Debtor Economies	–5.7	–9.9	–13.3	–9.0	–10.0	–11.7	–13.3	–12.7	–11.6	–12.2	–12.1
Of Which, Official Financing	–14.3	–19.1	–23.4	–11.9	–7.0	–8.0	–12.0	–8.2	–10.9	–11.6	–10.8
Net Debtor Economies by Debt-Servicing Experience											
Economies with Arrears and/or Rescheduling during 2009–13	2.2	–0.6	–3.0	–7.9	–9.0	–10.3	–15.9	–17.4	–15.2	–21.2	–18.3
Memorandum											
World	**1.3**	**1.5**	**0.8**	**1.1**	**1.6**	**1.5**	**1.5**	**1.8**	**1.5**	**1.1**	**0.8**
European Union	–0.6	–1.1	–2.4	0.2	0.1	0.9	2.3	3.9	3.3	3.2	3.4
Low-Income Developing Countries	11.2	1.0	–2.9	–8.2	–4.9	–5.6	–8.1	–7.6	–7.3	–8.2	–10.6
Middle East and North Africa	32.8	26.1	26.4	5.1	15.4	28.0	26.2	21.3	17.5	14.4	7.1

[1]In this table, Other Advanced Economies means advanced economies excluding the United States, euro area countries, and Japan.
[2]Georgia and Turkmenistan, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.
[3]Indonesia, Malaysia, Philippines, Thailand, Vietnam.

Table A11. Advanced Economies: Balance on Current Account

(Percent of GDP)

									Projections		
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019
Advanced Economies	**–1.2**	**–0.8**	**–1.2**	**–0.2**	**0.0**	**–0.2**	**–0.1**	**0.4**	**0.3**	**0.2**	**0.2**
United States	–5.8	–5.0	–4.7	–2.6	–3.0	–3.0	–2.9	–2.4	–2.5	–2.6	–2.8
Euro Area[1]	–0.2	0.0	–1.6	–0.1	0.1	0.1	1.4	2.4	2.0	1.9	1.8
Germany	6.0	7.1	6.0	6.0	5.9	6.3	7.4	7.0	6.2	5.8	5.0
France	–0.6	–1.0	–1.7	–1.3	–1.3	–1.7	–2.1	–1.3	–1.4	–1.0	0.0
Italy	–1.5	–1.3	–2.8	–1.9	–3.4	–3.0	–0.3	1.0	1.2	1.2	–0.2
Spain	–9.0	–10.0	–9.6	–4.8	–4.5	–3.7	–1.2	0.8	0.1	0.4	1.4
Netherlands	8.8	6.3	4.0	4.8	6.9	8.5	8.9	10.2	9.9	9.6	8.8
Belgium	1.9	1.9	–1.3	–0.6	1.9	–1.1	–1.9	–1.9	–1.3	–1.0	0.2
Austria	2.8	3.5	4.8	2.7	3.5	1.6	2.4	2.7	3.0	3.2	3.4
Greece	–11.3	–14.6	–15.0	–11.2	–10.3	–9.9	–2.5	0.7	0.7	0.1	1.1
Portugal	–10.7	–10.1	–12.6	–10.9	–10.6	–7.0	–2.0	0.5	0.6	0.8	2.0
Finland	5.3	5.2	3.1	2.7	2.4	–0.6	–1.2	–0.9	–0.6	–0.5	–0.3
Ireland	–3.6	–5.4	–5.7	–3.0	0.6	0.8	1.6	4.4	3.3	2.4	2.5
Slovak Republic	–7.8	–5.3	–6.2	–2.6	–3.7	–3.8	2.2	2.1	1.9	2.2	2.8
Slovenia	–1.7	–4.0	–5.2	–0.4	–0.1	0.5	3.5	6.8	5.9	5.8	2.1
Luxembourg	10.4	10.1	5.4	7.3	7.7	6.6	5.8	5.2	5.1	4.0	4.0
Latvia	–22.6	–22.4	–13.2	8.6	2.9	–2.1	–2.5	–0.8	–0.1	–1.5	–2.0
Estonia	–15.0	–15.0	–8.7	2.5	1.8	0.0	–2.1	–1.4	–2.2	–2.4	–2.6
Cyprus	–7.0	–11.8	–15.6	–10.7	–9.8	–3.4	–6.9	–1.9	–1.1	–0.8	–0.2
Malta	–9.7	–4.0	–5.0	–8.6	–6.5	–1.9	0.9	0.9	0.3	0.3	0.4
Japan	4.0	4.9	2.9	2.9	4.0	2.1	1.0	0.7	1.0	1.1	1.4
United Kingdom	–2.8	–2.2	–0.9	–1.4	–2.7	–1.5	–3.8	–4.5	–4.2	–3.8	–1.4
Canada	1.4	0.8	0.1	–2.9	–3.5	–2.8	–3.4	–3.2	–2.7	–2.5	–2.0
Korea	0.4	1.1	0.3	3.7	2.6	1.6	4.2	6.1	5.8	5.8	4.3
Australia	–5.8	–6.7	–4.9	–4.6	–3.6	–3.0	–4.4	–3.3	–3.7	–3.8	–3.7
Taiwan Province of China	7.0	8.9	6.9	11.4	9.3	9.0	10.6	11.7	11.9	11.3	9.6
Sweden	8.7	9.4	9.2	6.2	6.3	6.1	6.0	6.2	5.7	6.1	5.5
Hong Kong SAR	12.7	13.0	15.0	9.9	7.0	5.6	1.6	1.9	2.1	2.2	3.7
Switzerland	14.2	9.7	1.5	6.8	14.3	6.7	11.2	16.0	13.0	12.5	10.2
Singapore	25.0	26.0	14.4	16.8	23.7	22.8	17.5	18.3	17.6	16.6	14.5
Czech Republic	–2.1	–4.4	–2.1	–2.5	–3.8	–2.9	–1.3	–1.4	–0.2	–0.3	–0.4
Norway	16.4	12.6	16.1	11.9	11.9	13.5	14.5	11.2	10.6	10.2	8.5
Israel	4.5	3.1	1.5	3.8	3.4	1.5	0.8	2.0	1.9	2.0	1.8
Denmark	3.0	1.4	2.9	3.5	5.8	6.0	5.9	7.3	7.1	7.0	7.3
New Zealand	–7.2	–6.9	–7.8	–2.3	–2.3	–2.9	–4.1	–3.4	–4.2	–6.0	–5.9
Iceland	–25.6	–15.7	–28.4	–11.6	–8.0	–6.3	–5.3	3.9	2.1	2.3	2.1
San Marino	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Memorandum											
Major Advanced Economies	–1.9	–1.2	–1.4	–0.6	–0.8	–0.9	–1.1	–0.9	–0.9	–1.0	–0.9
Euro Area[2]	0.4	0.3	–0.8	0.3	0.5	0.7	1.9	2.8	2.5	2.5	2.4

[1]Corrected for reporting discrepancies in intra-area transactions.

[2]Calculated as the sum of the balances of individual euro area countries.

Table A12. Emerging Market and Developing Economies: Balance on Current Account

(Percent of GDP)

	2006	2007	2008	2009	2010	2011	2012	2013	Projections 2014	2015	2019
Commonwealth of Independent States[1]	**7.2**	**3.8**	**5.0**	**2.6**	**3.4**	**4.3**	**2.5**	**0.6**	**1.9**	**2.1**	**1.6**
Russia	9.3	5.5	6.3	4.1	4.4	5.1	3.5	1.6	2.7	3.1	2.2
Excluding Russia	0.5	–1.5	0.8	–1.8	0.3	1.8	–0.6	–2.2	–0.5	–0.9	0.0
Armenia	–3.9	–8.5	–15.0	–17.6	–14.2	–11.1	–11.1	–8.0	–7.7	–7.3	–6.5
Azerbaijan	17.6	27.3	35.5	23.0	28.0	26.5	21.8	17.0	14.6	10.4	7.2
Belarus	–3.9	–6.7	–8.2	–12.6	–15.0	–8.5	–2.9	–10.1	–8.5	–7.4	–5.0
Georgia	–15.2	–19.8	–22.0	–10.5	–10.2	–12.8	–11.7	–5.9	–8.4	–7.9	–5.0
Kazakhstan	–2.5	–8.0	4.7	–3.6	0.9	5.4	0.5	–0.1	0.3	–0.7	0.4
Kyrgyz Republic	–3.1	–6.2	–15.6	–2.5	–6.4	–9.6	–15.9	–14.8	–14.2	–14.8	–6.6
Moldova	–11.3	–15.2	–16.1	–8.2	–7.8	–11.2	–6.8	–4.8	–6.2	–7.3	–7.1
Tajikistan	–2.8	–8.6	–7.6	–5.9	–1.2	–4.8	–1.5	–1.4	–4.7	–3.6	–2.8
Turkmenistan	15.7	15.5	16.5	–14.7	–10.6	2.0	0.0	–2.9	–1.9	–0.3	4.1
Ukraine	–1.5	–3.7	–7.1	–1.5	–2.2	–6.3	–8.1	–9.2	–2.5	–2.5	–3.2
Uzbekistan	9.2	7.3	8.7	2.2	6.2	5.8	1.2	0.1	0.1	0.5	1.6
Emerging and Developing Asia	**5.6**	**6.6**	**5.8**	**3.4**	**2.5**	**0.9**	**1.0**	**1.0**	**1.0**	**1.1**	**1.6**
Bangladesh	1.0	0.7	1.2	2.4	0.4	–1.0	0.7	1.2	0.1	–0.6	–0.9
Bhutan	–4.4	14.6	–2.2	–2.0	–10.3	–23.7	–17.6	–22.1	–21.9	–26.2	–7.7
Brunei Darussalam	50.1	47.8	48.9	40.3	45.5	36.4	33.5	31.5	31.6	30.1	33.2
Cambodia	–0.6	–1.9	–5.7	–4.5	–3.9	–8.1	–8.7	–8.5	–8.7	–7.7	–6.6
China	8.3	10.1	9.2	4.8	4.0	1.9	2.6	1.9	1.8	2.0	3.0
Fiji	–15.4	–10.4	–15.9	–4.2	–4.5	–5.3	–1.8	–20.7	–10.2	–8.8	–9.5
India	–1.0	–1.3	–2.3	–2.8	–2.7	–4.2	–4.7	–1.7	–2.1	–2.2	–2.6
Indonesia	2.6	1.6	0.0	2.0	0.7	0.2	–2.8	–3.3	–3.2	–2.9	–2.5
Kiribati	–23.6	–19.4	–20.1	–23.3	–16.9	–32.2	–26.3	–27.4	–53.4	–53.4	–31.7
Lao P.D.R.	–10.0	–15.7	–18.5	–21.0	–18.3	–15.5	–27.7	–27.7	–25.4	–21.2	–16.1
Malaysia	16.1	15.4	17.1	15.5	10.9	11.6	5.8	3.9	4.3	4.2	4.1
Maldives	–23.2	–17.2	–32.3	–11.4	–8.9	–20.2	–22.0	–20.8	–19.6	–20.6	–20.3
Marshall Islands	–4.3	–5.4	–3.5	–17.4	–28.8	–9.0	–8.1	–9.4	–20.6	–10.9	–11.2
Micronesia	–13.7	–9.2	–16.2	–18.3	–14.9	–17.4	–12.0	–7.1	–6.9	–6.4	–5.2
Mongolia	6.5	6.3	–12.9	–8.9	–15.0	–31.5	–32.6	–27.7	–14.1	–15.0	–19.7
Myanmar	6.8	–0.7	–4.2	–1.3	–1.2	–1.9	–4.3	–5.4	–5.3	–5.1	–4.4
Nepal	2.1	–0.1	2.7	4.2	–2.4	–1.0	4.8	3.3	4.6	3.2	–1.2
Palau	–24.7	–16.7	–16.8	–4.7	–7.2	–4.1	–5.0	–6.5	–5.5	–5.3	–5.6
Papua New Guinea	–1.7	3.9	8.5	–15.2	–21.5	–23.6	–53.6	–30.8	–11.4	13.5	5.6
Philippines	5.7	5.4	0.1	5.0	3.6	2.5	2.8	3.5	3.2	2.6	0.5
Samoa	–8.8	–13.5	–5.5	–5.3	–6.7	–3.5	–7.8	–2.0	–5.4	–5.2	–5.1
Solomon Islands	–9.1	–15.7	–20.5	–21.4	–30.8	–6.7	0.2	–8.4	–14.7	–15.5	–9.9
Sri Lanka	–5.3	–4.3	–9.5	–0.5	–2.2	–7.8	–6.7	–3.9	–3.3	–3.3	–2.7
Thailand	1.1	6.3	0.8	8.3	3.1	2.6	–0.4	–0.6	2.9	2.1	0.8
Timor-Leste	19.2	39.4	46.0	38.9	39.8	41.1	47.8	45.0	24.3	29.6	9.6
Tonga	–5.7	–5.7	–8.2	–6.7	–3.7	–4.8	–6.1	–4.4	–3.1	–4.5	–0.9
Tuvalu	31.9	–13.0	7.1	6.9	–11.9	–36.5	25.3	26.4	27.7	–37.2	–10.9
Vanuatu	–6.2	–7.3	–10.8	–7.9	–5.4	–8.1	–6.4	–4.5	–5.8	–5.9	–5.5
Vietnam	–0.2	–9.0	–11.0	–6.5	–3.8	0.2	6.0	5.6	4.1	3.4	–1.9
Emerging and Developing Europe	**–6.5**	**–8.1**	**–8.2**	**–3.2**	**–4.9**	**–6.4**	**–4.6**	**–3.9**	**–3.2**	**–3.5**	**–4.2**
Albania	–5.6	–10.4	–15.6	–14.3	–11.2	–13.3	–10.0	–10.4	–11.0	–12.7	–8.3
Bosnia and Herzegovina	–7.9	–9.1	–14.1	–6.5	–6.2	–9.8	–9.3	–5.4	–11.0	–9.1	–5.5
Bulgaria	–17.6	–25.2	–23.0	–8.9	–1.5	0.1	–0.9	1.9	–0.2	–2.3	–3.2
Croatia	–6.7	–7.3	–8.9	–5.1	–1.1	–0.9	–0.1	0.9	2.2	2.2	–1.5
Hungary	–7.4	–7.3	–7.4	–0.2	0.2	0.4	0.9	3.0	2.5	2.0	–1.7
Kosovo	–7.2	–10.2	–16.2	–9.2	–11.7	–13.7	–7.5	–6.4	–7.2	–7.6	–6.6
Lithuania	–10.6	–14.5	–13.3	3.9	0.0	–3.7	–0.2	1.5	0.9	0.1	–2.0
FYR Macedonia	–0.4	–7.1	–12.8	–6.8	–2.0	–2.5	–3.0	–1.9	–4.6	–5.7	–4.7
Montenegro	–31.3	–39.5	–49.8	–27.9	–22.9	–17.7	–18.7	–14.6	–17.8	–23.7	–17.5
Poland	–3.8	–6.2	–6.6	–4.0	–5.1	–5.0	–3.7	–1.4	–1.5	–2.1	–2.9
Romania	–10.4	–13.4	–11.6	–4.1	–4.4	–4.5	–4.4	–1.1	–1.2	–1.8	–3.3
Serbia	–10.1	–17.8	–21.7	–6.6	–6.8	–9.1	–12.3	–6.5	–6.1	–5.1	–6.0
Turkey	–6.0	–5.8	–5.5	–2.0	–6.2	–9.7	–6.1	–7.9	–5.8	–6.0	–5.7

Table A12. Emerging Market and Developing Economies: Balance on Current Account *(continued)*

(Percent of GDP)

									Projections		
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2019
Latin America and the Caribbean	**1.4**	**0.2**	**–0.9**	**–0.7**	**–1.3**	**–1.4**	**–1.9**	**–2.7**	**–2.5**	**–2.6**	**–2.6**
Antigua and Barbuda	–25.7	–29.9	–26.7	–14.0	–14.7	–10.4	–13.8	–14.1	–15.3	–14.1	–10.8
Argentina[2]	2.7	2.0	1.5	2.0	–0.3	–0.7	–0.2	–0.8	–0.8	–1.1	0.6
The Bahamas	–17.7	–11.5	–10.6	–10.3	–10.1	–15.2	–18.2	–19.4	–16.6	–10.9	–7.4
Barbados	–8.2	–5.4	–10.7	–6.8	–5.8	–12.8	–9.5	–10.4	–8.8	–8.0	–6.5
Belize	–2.1	–4.0	–10.6	–4.9	–2.4	–1.1	–1.2	–4.5	–5.4	–6.2	–7.3
Bolivia	11.2	11.4	11.9	4.3	3.9	0.3	8.3	3.3	2.6	2.8	0.5
Brazil	1.3	0.1	–1.7	–1.5	–2.2	–2.1	–2.4	–3.6	–3.5	–3.6	–3.5
Chile	4.6	4.1	–3.2	2.0	1.6	–1.2	–3.4	–3.4	–1.8	–1.4	–1.7
Colombia	–1.8	–2.9	–2.6	–2.0	–3.0	–2.9	–3.1	–3.3	–3.9	–3.8	–3.4
Costa Rica	–4.5	–6.3	–9.3	–2.0	–3.5	–5.4	–5.3	–5.1	–5.2	–5.3	–5.7
Dominica	–13.0	–21.1	–28.7	–22.7	–17.4	–14.5	–18.9	–16.6	–16.6	–15.2	–13.5
Dominican Republic	–3.4	–5.0	–9.4	–4.8	–7.4	–7.5	–6.6	–4.0	–4.1	–4.6	–3.3
Ecuador	3.7	3.7	2.8	0.5	–2.3	–0.4	–0.4	–1.3	–0.8	–2.4	–1.8
El Salvador	–4.1	–6.1	–7.1	–1.5	–2.7	–4.9	–5.3	–6.5	–6.5	–6.1	–6.1
Grenada	–30.8	–29.7	–28.0	–22.2	–22.1	–21.8	–19.2	–27.1	–23.8	–20.6	–17.2
Guatemala	–5.0	–5.2	–3.6	0.7	–1.4	–3.4	–2.6	–2.7	–2.0	–2.2	–2.4
Guyana	–13.4	–9.5	–13.7	–9.1	–9.6	–13.1	–11.6	–12.8	–14.6	–15.9	–9.1
Haiti	–1.5	–1.5	–3.1	–1.9	–1.5	–4.3	–5.7	–6.7	–6.8	–5.9	–4.9
Honduras	–3.7	–9.1	–15.4	–3.8	–4.3	–8.0	–8.6	–9.0	–8.0	–7.3	–6.5
Jamaica	–10.0	–15.3	–17.7	–11.0	–8.7	–13.4	–13.0	–11.1	–8.3	–6.5	–4.5
Mexico	–0.8	–1.4	–1.8	–0.9	–0.4	–1.1	–1.3	–2.1	–1.9	–2.0	–2.2
Nicaragua	–12.6	–16.5	–17.7	–9.3	–9.6	–12.8	–12.7	–11.4	–11.3	–11.4	–9.9
Panama	–3.2	–8.0	–10.9	–0.7	–11.4	–15.9	–10.6	–11.9	–10.8	–10.6	–7.0
Paraguay	1.6	5.7	1.0	3.0	–0.3	0.5	–0.9	2.1	1.0	–1.1	–0.5
Peru	3.3	1.5	–4.3	–0.5	–2.4	–1.9	–3.3	–4.5	–5.2	–5.0	–3.6
St. Kitts and Nevis	–13.5	–16.3	–27.5	–26.6	–20.9	–15.5	–11.9	–9.0	–13.5	–18.1	–17.2
St. Lucia	–29.0	–30.1	–29.0	–11.6	–16.3	–18.8	–14.0	–8.8	–8.9	–11.0	–12.8
St. Vincent and the Grenadines	–19.5	–28.0	–33.1	–29.2	–30.6	–29.4	–27.8	–29.2	–32.7	–30.2	–20.0
Suriname	8.4	11.1	9.2	2.9	11.4	5.8	3.4	–3.9	–3.6	–3.7	1.3
Trinidad and Tobago	39.6	23.9	30.5	8.5	20.3	12.4	5.0	11.8	11.9	11.2	9.9
Uruguay	–2.0	–0.9	–5.7	–1.3	–1.9	–2.9	–5.4	–5.6	–6.5	–6.4	–4.5
Venezuela	14.9	7.2	11.0	1.0	3.2	8.2	3.7	5.0	7.6	6.4	0.8
Middle East, North Africa, Afghanistan, and Pakistan	**15.5**	**12.3**	**12.8**	**1.7**	**6.5**	**13.2**	**12.7**	**10.0**	**7.8**	**6.2**	**2.7**
Afghanistan	–1.1	6.0	5.2	1.9	3.1	3.1	3.9	4.3	4.8	0.1	–3.7
Algeria	24.7	22.7	20.1	0.3	7.5	9.9	5.9	0.4	–3.0	–2.9	–3.7
Bahrain	11.8	13.4	8.8	2.4	3.0	11.2	7.2	7.8	7.0	6.4	2.1
Djibouti	–11.5	–21.4	–24.3	–9.3	–5.4	–13.7	–18.4	–23.8	–31.4	–35.0	–16.7
Egypt	1.6	2.1	0.5	–2.3	–2.0	–2.6	–3.9	–2.7	–0.4	–4.0	–4.9
Iran	8.5	10.6	6.5	2.6	6.5	11.0	6.6	7.5	4.2	1.7	–1.0
Iraq	12.9	7.7	12.8	–8.0	3.0	12.0	6.7	–0.8	3.0	2.4	1.0
Jordan	–11.5	–16.8	–9.3	–3.3	–5.3	–12.0	–15.4	–9.8	–10.0	–6.9	–4.5
Kuwait	44.6	36.8	40.9	26.7	32.0	43.6	45.5	40.5	40.8	38.6	32.1
Lebanon	–7.3	–7.2	–11.1	–12.5	–13.3	–12.8	–12.7	–12.9	–12.7	–12.3	–10.5
Libya	51.1	44.1	42.5	14.9	19.5	9.1	29.1	13.6	–27.1	–20.9	–1.1
Mauritania	–1.3	–14.4	–13.7	–16.2	–10.1	–6.3	–31.9	–30.1	–26.8	–39.4	–6.0
Morocco	2.2	–0.1	–5.2	–5.4	–4.1	–8.0	–9.7	–7.6	–6.8	–5.8	–3.9
Oman	15.7	6.0	8.5	–1.3	10.3	15.8	13.3	11.9	9.9	5.6	–2.8
Pakistan	–3.6	–4.5	–8.1	–5.5	–2.2	0.1	–2.1	–1.1	–1.2	–1.3	–1.9
Qatar	15.5	14.4	23.1	6.5	19.1	30.6	32.7	30.9	27.1	23.2	9.6
Saudi Arabia	26.3	22.5	25.5	4.9	12.7	23.7	22.4	17.7	15.1	12.4	7.8
Sudan[3]	–8.8	–6.0	–1.6	–9.6	–2.1	–0.4	–9.2	–8.6	–6.3	–6.3	–4.5
Syria[4]	1.4	–0.2	–1.3	–2.9	–2.8	. . .	. . .	. . .	. . .	. . .	. . .
Tunisia	–1.8	–2.4	–3.8	–2.8	–4.8	–7.4	–8.2	–8.4	–7.7	–6.6	–3.1
United Arab Emirates	16.3	6.9	7.1	3.1	2.5	14.7	18.5	16.1	11.1	11.8	5.7
Yemen	1.2	–7.0	–4.6	–10.1	–3.4	–3.0	–1.7	–3.1	–1.3	–1.1	–2.6

Table A12. Emerging Market and Developing Economies: Balance on Current Account *(concluded)*

(Percent of GDP)

	2006	2007	2008	2009	2010	2011	2012	2013	Projections 2014	2015	2019
Sub-Saharan Africa	**3.7**	**1.1**	**–0.2**	**–3.0**	**–0.8**	**–0.7**	**–2.0**	**–2.4**	**–2.6**	**–3.2**	**–3.3**
Angola	25.6	17.5	8.5	–10.0	8.1	12.6	11.6	5.5	4.1	2.0	–0.4
Benin	–4.9	–10.2	–8.1	–8.9	–8.7	–7.8	–7.9	–14.5	–9.2	–7.2	–6.8
Botswana	19.3	15.0	0.0	–11.2	–6.0	–0.7	–3.8	10.4	5.8	4.4	2.6
Burkina Faso	–9.3	–8.3	–11.5	–4.5	–2.0	–1.5	–4.5	–7.0	–7.2	–7.0	–7.2
Burundi	–21.5	–5.4	–1.0	1.7	–12.2	–13.6	–17.3	–20.7	–17.4	–17.7	–15.7
Cabo Verde	–4.8	–12.9	–13.7	–14.6	–12.4	–16.3	–11.4	–4.0	–5.8	–7.0	–6.1
Cameroon	1.6	1.4	–1.2	–3.1	–2.8	–2.7	–3.6	–3.7	–3.5	–3.4	–3.5
Central African Republic	–3.0	–6.2	–9.9	–9.2	–10.9	–8.3	–5.1	–5.5	–11.8	–16.9	–12.4
Chad	4.6	8.2	3.7	–9.2	–9.0	–5.6	–8.7	–9.5	–7.2	–7.1	–4.7
Comoros	–6.0	–5.8	–11.7	–8.0	–5.5	–11.3	–8.3	–6.5	–12.9	–11.4	–13.4
Democratic Republic of the Congo	0.3	3.2	–0.8	–6.2	–10.6	–5.4	–6.2	–10.2	–9.3	–9.2	–6.1
Republic of Congo	2.8	–6.5	–0.5	–5.9	3.9	6.0	–1.2	–3.4	–3.2	–3.2	0.9
Côte d'Ivoire	2.6	–0.6	2.0	6.3	1.9	11.1	–0.2	–2.1	–3.0	–3.1	–3.6
Equatorial Guinea	16.9	16.0	12.3	–7.7	–9.6	–0.5	–4.5	–12.1	–10.5	–10.3	–5.4
Eritrea	–3.6	–6.1	–5.5	–7.6	–5.6	0.6	2.3	0.3	0.2	–1.2	–3.1
Ethiopia	–11.9	–4.3	–6.9	–6.9	–1.4	–2.5	–7.0	–6.0	–7.1	–7.3	–4.7
Gabon	17.1	15.3	23.4	7.5	8.7	13.2	14.0	12.1	12.2	6.0	1.3
The Gambia	–6.9	–8.3	–12.3	–12.3	–16.0	–9.6	–15.5	–9.3	–10.7	–11.6	–4.8
Ghana	–8.2	–8.7	–11.9	–5.4	–8.6	–9.0	–11.8	–11.9	–9.9	–8.5	–7.1
Guinea	–4.6	–11.6	–10.5	–8.5	–10.2	–19.3	–25.9	–21.1	–17.1	–20.1	–54.6
Guinea-Bissau	–5.3	–4.5	–4.7	–6.7	–9.4	1.0	–5.7	–4.6	1.6	–0.6	–2.2
Kenya	–2.0	–3.2	–5.4	–4.6	–5.9	–8.9	–8.4	–8.7	–8.0	–8.1	–6.1
Lesotho	26.3	24.6	23.4	8.9	–4.7	–8.6	–4.2	–1.2	–0.8	–6.8	–10.4
Liberia	–18.1	–12.1	–55.1	–28.8	–37.9	–34.5	–27.9	–34.7	–36.4	–40.5	–31.3
Madagascar	–3.8	–12.7	–20.6	–21.2	–9.7	–6.9	–6.8	–5.4	–4.3	–4.0	–4.4
Malawi	–11.2	1.0	–9.7	–4.8	–1.3	–5.9	–4.5	–2.8	–6.0	–5.2	–4.5
Mali	–3.6	–8.1	–12.1	–7.3	–12.6	–6.2	–2.7	–5.3	–8.9	–9.5	–6.0
Mauritius	–9.1	–5.4	–10.1	–7.4	–10.3	–13.8	–7.3	–9.9	–9.2	–9.2	–6.2
Mozambique	–8.6	–10.9	–12.9	–12.2	–11.7	–24.4	–45.4	–39.5	–48.4	–48.2	–47.0
Namibia	13.6	8.5	2.9	–1.4	1.0	–1.2	–2.6	–5.1	–7.0	–4.9	0.2
Niger	–8.6	–8.2	–12.0	–24.4	–19.8	–22.3	–15.4	–17.0	–24.7	–24.2	–10.3
Nigeria	17.1	10.9	9.1	5.2	3.9	3.0	4.4	4.0	3.7	2.2	1.1
Rwanda	–4.5	–2.3	–5.2	–7.3	–7.4	–7.5	–11.3	–7.1	–12.3	–12.4	–7.8
São Tomé and Príncipe	–32.3	–29.7	–34.9	–23.6	–22.5	–26.0	–20.9	–19.9	–18.0	–16.5	–11.3
Senegal	–9.2	–11.6	–14.1	–6.7	–4.4	–7.9	–10.8	–10.4	–9.8	–9.4	–8.2
Seychelles	–13.2	–18.8	–27.2	–22.4	–22.1	–26.5	–24.7	–16.9	–20.9	–19.3	–16.2
Sierra Leone	–5.0	–7.4	–9.0	–13.3	–22.7	–65.2	–29.1	–10.4	–10.9	–8.2	–6.1
South Africa	–5.3	–7.0	–7.2	–4.0	–2.0	–2.3	–5.2	–5.8	–5.7	–5.6	–4.6
South Sudan	. . .	. . .	. . .	. . .	. . .	17.5	–27.7	4.0	–2.5	0.9	–4.7
Swaziland	–6.7	–2.1	–7.6	–13.0	–10.0	–8.2	3.8	5.3	0.8	–1.4	–3.2
Tanzania	–9.6	–10.9	–10.3	–9.8	–9.3	–14.5	–15.9	–13.8	–13.7	–13.1	–10.7
Togo	–8.0	–8.6	–7.0	–5.6	–6.3	–8.0	–9.5	–8.5	–9.0	–7.7	–6.7
Uganda	–4.0	–5.0	–8.5	–7.1	–10.8	–12.3	–9.5	–8.5	–10.4	–10.5	–9.6
Zambia	–0.4	–5.4	–5.8	3.8	5.9	3.0	3.1	0.7	1.9	2.3	1.7
Zimbabwe[5]	–6.5	–5.4	–16.7	–44.6	–18.0	–29.8	–24.4	–27.4	–28.1	–26.2	–16.5

[1]Georgia and Turkmenistan, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.
[2]Calculations are based on Argentina's official GDP data. See note to Table A4.
[3]Data for 2011 exclude South Sudan after July 9. Data for 2012 and onward pertain to the current Sudan.
[4]Data for Syria are excluded for 2011 onward owing the uncertain political situation.
[5]The Zimbabwe dollar ceased circulating in early 2009. Data are based on IMF staff estimates of price and exchange rate developments in U.S. dollars. IMF staff estimates of U.S. dollar values may differ from authorities' estimates.

Table A13. Summary of Financial Account Balances

(Billions of U.S. dollars)

	2006	2007	2008	2009	2010	2011	2012	2013	Projections 2014	Projections 2015
Advanced Economies										
Financial Account Balance	–454.6	–312.6	–519.7	90.9	–66.1	–137.3	–57.1	295.9	167.5	182.0
Direct Investment, Net	214.2	609.8	645.0	331.2	353.8	371.7	255.3	234.3	391.8	362.0
Portfolio Investment, Net	–859.8	–1,015.5	–1,145.0	–398.3	–746.0	–827.6	–137.0	–304.1	–144.8	–82.8
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	171.6	–59.9	–390.4	–256.7	115.1	–17.1	–383.7	147.1	–241.5	–247.5
Change in Reserves	102.4	66.1	76.6	472.3	346.0	338.3	269.9	154.2	188.7	149.6
United States										
Financial Account Balance	–809.1	–617.3	–730.6	–231.0	–437.0	–515.8	–423.5	–370.7	–387.8	–398.5
Direct Investment, Net	1.8	192.9	19.0	159.9	95.2	183.0	157.8	113.3	282.9	243.1
Portfolio Investment, Net	–633.4	–775.8	–808.0	18.5	–620.8	–226.3	–507.2	–1.1	–317.4	–223.7
Financial Derivatives, Net	–29.7	–6.2	32.9	–44.8	–14.1	–35.0	7.1	2.2	11.5	10.7
Other Investment, Net	–145.5	–28.2	20.6	–416.9	100.9	–453.4	–85.6	–482.0	–363.9	–428.5
Change in Reserves	–2.4	0.1	4.8	52.3	1.8	15.9	4.5	–3.1	–1.0	0.0
Euro Area										
Financial Account Balance	5.1	–9.9	–187.7	–14.3	17.8	70.9	212.2	335.8	. . .	. . .
Direct Investment, Net	199.6	122.1	320.6	90.3	102.7	141.5	92.0	42.7	. . .	. . .
Portfolio Investment, Net	–232.3	–171.1	–357.1	–347.6	–106.4	–332.0	–122.7	–146.4	. . .	. . .
Financial Derivatives, Net	0.7	91.5	124.6	–26.5	–13.6	7.7	–6.8	–23.0	. . .	. . .
Other Investment, Net	35.5	–59.4	–280.7	275.9	21.2	239.3	230.5	456.7	. . .	. . .
Change in Reserves	1.6	7.0	4.9	–6.4	14.0	14.3	19.2	5.9	. . .	. . .
Germany										
Financial Account Balance	223.5	293.2	247.9	207.4	148.7	224.1	274.4	326.5	237.0	228.4
Direct Investment, Net	61.1	89.2	63.7	44.9	59.9	20.2	65.4	30.5	42.0	43.0
Portfolio Investment, Net	23.0	–210.8	–47.0	119.0	149.7	–38.9	83.2	219.2	159.2	153.4
Financial Derivatives, Net	5.7	114.5	40.7	–9.5	18.0	37.2	32.9	24.1	17.5	16.9
Other Investment, Net	137.5	299.0	187.6	40.7	–81.1	201.6	91.2	51.6	18.3	15.1
Change in Reserves	–3.7	1.3	3.0	12.4	2.1	3.9	1.7	1.1	0.0	0.0
France										
Financial Account Balance	–32.0	–43.0	–33.4	–31.7	–33.5	–74.3	–95.3	–21.4	–57.7	–44.3
Direct Investment, Net	38.9	68.2	91.3	83.1	31.0	21.0	12.1	–7.4	–0.6	6.3
Portfolio Investment, Net	135.5	166.1	–36.8	–337.4	–156.6	–318.0	–50.4	–132.2	–176.9	–166.7
Financial Derivatives, Net	–4.2	–59.0	16.6	22.9	–34.1	–19.6	–18.5	–21.5	–18.9	–16.2
Other Investment, Net	–213.7	–219.0	–92.9	191.3	118.5	249.5	–43.8	141.7	139.1	132.5
Change in Reserves	11.6	0.7	–11.6	8.4	7.7	–7.3	5.3	–2.0	–0.3	–0.3
Italy										
Financial Account Balance	–47.8	–41.7	–8.0	–46.3	–118.8	–83.6	–24.5	28.8	25.5	25.9
Direct Investment, Net	1.2	52.5	78.2	1.2	23.5	19.3	7.9	15.2	16.2	16.9
Portfolio Investment, Net	–39.5	–5.6	–75.2	–55.5	56.7	12.4	–33.3	–19.4	–31.1	10.3
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	–9.0	–90.7	–19.1	8.1	–200.3	–116.7	–1.0	31.0	40.4	–1.2
Change in Reserves	–0.6	2.1	8.2	–0.1	1.4	1.3	1.9	2.0	0.0	0.0

Table A13. Summary of Financial Account Balances *(continued)*

(Billions of U.S. dollars)

	2006	2007	2008	2009	2010	2011	2012	2013	Projections 2014	Projections 2015
Spain										
Financial Account Balance	–105.0	–144.1	–159.2	–80.4	–46.0	–45.1	10.5	38.0	12.1	16.1
Direct Investment, Net	73.5	72.9	–2.3	2.7	–2.0	12.8	–29.7	–13.1	–6.2	–5.3
Portfolio Investment, Net	–233.4	–123.2	0.8	–70.7	–47.0	42.3	53.1	–66.9	–33.7	–26.6
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	54.3	–93.9	–158.6	–14.5	1.9	–114.1	–15.8	117.4	52.1	47.9
Change in Reserves	0.6	0.2	0.9	2.2	1.1	13.9	2.8	0.6	0.0	0.0
Japan										
Financial Account Balance	138.2	224.3	187.3	174.8	253.5	165.8	62.9	–16.7	41.4	51.0
Direct Investment, Net	60.2	51.7	89.1	61.2	72.5	117.8	119.2	132.4	94.0	95.8
Portfolio Investment, Net	–127.3	–68.3	294.7	217.6	154.1	–155.5	38.5	–269.8	25.5	25.8
Financial Derivatives, Net	–2.5	–2.9	–24.9	–10.5	–11.9	–17.1	6.7	58.1	–17.8	–15.4
Other Investment, Net	175.8	207.3	–202.3	–120.9	–5.5	43.4	–63.6	23.9	–51.6	–54.1
Change in Reserves	32.0	36.5	30.8	27.2	44.3	177.3	–37.9	38.7	–8.6	–1.1
United Kingdom										
Financial Account Balance	–68.1	–86.7	–18.8	–17.7	–49.5	–18.4	–102.4	–112.4	–118.3	–111.0
Direct Investment, Net	–73.5	125.4	94.9	–37.2	–10.2	55.6	–10.9	–42.4	–28.4	–37.3
Portfolio Investment, Net	–104.8	–223.3	–467.2	–72.4	–27.9	43.6	295.4	–62.3	122.8	28.3
Financial Derivatives, Net	–38.0	54.0	225.5	–45.5	–50.7	4.7	–47.6	23.0	–12.8	5.9
Other Investment, Net	149.0	–45.3	130.5	128.4	29.9	–130.1	–351.5	–38.5	–210.3	–117.5
Change in Reserves	–0.8	2.4	–2.5	9.0	9.4	7.9	12.1	7.8	10.6	9.5
Canada										
Financial Account Balance	19.9	14.7	–2.6	–41.0	–55.0	–56.0	–63.9	–56.9	–48.0	–47.0
Direct Investment, Net	–14.1	–52.2	17.7	16.9	6.3	12.5	12.4	–21.7	–16.0	–14.9
Portfolio Investment, Net	41.8	73.5	–40.8	–89.7	–96.1	–82.6	–48.1	–14.8	–30.0	–31.0
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	–8.7	–10.8	18.9	21.7	30.9	6.0	–29.9	–25.1	–2.0	–1.1
Change in Reserves	0.9	4.3	1.6	10.2	3.9	8.1	1.7	4.7	0.0	0.0
Other Advanced Economies[1]										
Financial Account Balance	197.2	116.6	77.4	154.2	268.8	260.7	261.7	373.6	348.5	345.7
Direct Investment, Net	21.0	14.2	13.4	31.6	91.8	–16.7	–15.7	53.4	36.1	43.0
Portfolio Investment, Net	180.6	183.6	178.4	–106.9	–49.7	24.8	130.0	96.4	124.8	137.3
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	–74.3	–92.0	–145.4	–123.9	–28.4	96.5	–97.0	126.5	18.4	47.5
Change in Reserves	71.7	11.4	42.6	333.9	273.1	115.4	271.6	102.1	164.9	110.0
Emerging Market and Developing Economies										
Financial Account Balance	618.7	571.7	612.0	79.2	176.3	270.5	169.5	63.7	242.8	192.4
Direct Investment, Net	–297.9	–444.8	–463.7	–331.2	–415.2	–515.7	–459.9	–469.0	–425.2	–439.5
Portfolio Investment, Net	84.4	–24.7	136.9	–76.9	–240.4	–119.3	–239.9	–155.4	–157.1	–128.2
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	67.9	–183.4	232.0	–40.8	–10.5	156.1	430.2	130.6	344.9	223.2
Change in Reserves	765.6	1,218.2	703.8	523.6	835.2	745.0	441.4	557.3	479.2	536.0

Table A13. Summary of Financial Account Balances *(continued)*

(Billions of U.S. dollars)

	2006	2007	2008	2009	2010	2011	2012	2013	Projections 2014	Projections 2015
Regional Groups										
Commonwealth of Independent States[2]										
Financial Account Balance	102.1	44.4	98.1	23.3	70.7	95.5	49.0	–3.5	42.3	56.8
Direct Investment, Net	–22.1	–28.3	–49.4	–17.2	–9.4	–16.1	–27.8	–4.8	–0.6	–9.4
Portfolio Investment, Net	–6.9	3.8	35.8	–6.3	–14.4	17.9	3.5	0.2	15.7	9.6
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	3.5	–98.8	137.2	36.4	40.6	68.6	45.6	25.4	78.5	49.5
Change in Reserves	127.5	167.7	–26.7	7.2	52.1	23.9	26.2	–24.7	–51.6	7.0
Emerging and Developing Asia										
Financial Account Balance	270.0	410.9	446.9	215.7	142.4	63.5	4.1	34.2	140.7	172.5
Direct Investment, Net	–126.1	–172.4	–151.9	–115.6	–220.5	–279.4	–222.1	–245.1	–217.1	–192.1
Portfolio Investment, Net	45.4	–56.4	8.1	–65.6	–99.3	–56.8	–118.2	–69.3	–114.3	–96.4
Financial Derivatives, Net	. . .	. . .	. . .	. . .	0.5	–0.4	–3.1	3.0	0.5	0.3
Other Investment, Net	–15.8	19.9	112.7	–63.7	–105.2	–34.2	209.9	–103.3	6.3	–5.6
Change in Reserves	366.6	619.1	476.5	462.5	566.9	434.3	135.2	450.9	465.2	466.2
Emerging and Developing Europe										
Financial Account Balance	–85.6	–131.8	–165.2	–48.3	–81.8	–106.6	–63.0	–55.9	–33.8	–54.6
Direct Investment, Net	–60.9	–76.0	–65.2	–31.8	–28.0	–40.6	–26.5	–19.9	–26.9	–35.8
Portfolio Investment, Net	–11.1	5.2	15.9	–12.3	–45.2	–53.1	–72.6	–36.6	–28.2	–25.4
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	–41.6	–103.6	–123.0	–39.0	–48.6	–27.5	10.5	–16.1	19.5	1.9
Change in Reserves	29.0	37.2	7.7	32.5	36.3	13.7	28.1	17.9	1.8	4.7
Latin America and the Caribbean										
Financial Account Balance	48.4	15.3	–36.7	–24.1	–82.3	–94.4	–132.1	–187.5	–145.9	–159.7
Direct Investment, Net	–33.5	–94.1	–99.7	–70.1	–85.9	–126.8	–131.7	–150.6	–135.3	–144.9
Portfolio Investment, Net	5.7	–44.1	–7.5	–19.5	–103.7	–95.8	–88.7	–92.8	–83.1	–70.9
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	21.2	23.5	27.4	9.7	16.6	15.3	29.3	49.0	60.6	48.7
Change in Reserves	54.6	129.2	41.6	54.9	89.7	110.5	59.2	6.2	11.2	6.7
Middle East, North Africa, Afghanistan, and Pakistan										
Financial Account Balance	224.0	224.4	269.9	–40.9	133.6	321.2	338.3	330.3	279.5	234.1
Direct Investment, Net	–47.7	–52.1	–62.5	–66.2	–48.7	–20.5	–25.9	–23.5	–18.5	–23.4
Portfolio Investment, Net	68.3	72.8	60.7	35.6	31.3	69.7	56.4	60.9	58.2	63.2
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	47.3	–33.4	84.6	13.1	59.8	131.1	134.8	181.2	189.8	150.7
Change in Reserves	156.2	237.1	187.0	–23.4	91.3	141.0	173.0	111.8	50.0	43.7
Sub-Saharan Africa										
Financial Account Balance	59.8	8.5	–0.8	–46.5	–6.4	–8.8	–26.7	–53.9	–40.0	–56.7
Direct Investment, Net	–7.6	–21.8	–35.1	–30.2	–22.7	–32.4	–25.8	–25.0	–26.8	–33.9
Portfolio Investment, Net	–17.0	–6.0	23.9	–8.7	–9.0	–1.1	–20.2	–17.7	–5.4	–8.3
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	53.2	9.0	–7.0	2.7	26.3	2.9	0.2	–5.6	–9.8	–21.9
Change in Reserves	31.7	27.9	17.6	–10.0	–1.0	21.7	19.7	–4.7	2.6	7.6

Table A13. Summary of Financial Account Balances *(concluded)*

(Billions of U.S. dollars)

	2006	2007	2008	2009	2010	2011	2012	2013	Projections 2014	Projections 2015
Analytical Groups										
By Source of Export Earnings										
Fuel Exporters										
Financial Account Balance	416.4	341.3	464.3	11.7	252.2	504.4	488.3	390.0	391.4	360.3
Direct Investment, Net	–48.4	–53.6	–83.9	–62.6	–34.3	–27.5	–45.9	–12.1	–10.1	–23.5
Portfolio Investment, Net	84.4	86.6	98.4	16.7	23.8	83.2	44.7	62.9	82.8	72.8
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	81.3	–86.0	277.1	104.8	147.4	251.9	236.0	251.1	319.2	273.5
Change in Reserves	299.0	394.3	171.5	–50.3	113.4	195.5	252.0	87.6	–0.7	37.4
Nonfuel Exporters										
Financial Account Balance	202.4	230.4	147.7	67.4	–75.9	–233.9	–318.8	–326.2	–148.6	–167.8
Direct Investment, Net	–249.4	–391.1	–379.8	–268.5	–380.9	–488.3	–414.0	–456.9	–415.1	–416.0
Portfolio Investment, Net	0.0	–111.3	38.5	–93.6	–264.2	–202.5	–284.6	–218.3	–239.8	–201.1
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	–13.4	–97.4	–45.1	–145.7	–157.9	–95.8	194.2	–120.5	25.7	–50.2
Change in Reserves	466.7	823.9	532.3	574.0	721.8	549.5	189.4	469.7	479.9	498.6
By External Financing Source										
Net Debtor Economies										
Financial Account Balance	–74.1	–208.8	–347.8	–205.5	–279.7	–406.0	–471.7	–468.5	–389.0	–445.8
Direct Investment, Net	–153.6	–266.4	–292.0	–201.6	–201.8	–275.4	–279.0	–285.3	–282.5	–316.9
Portfolio Investment, Net	–50.4	–92.9	54.3	–68.4	–219.3	–155.2	–192.3	–160.3	–173.6	–144.9
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	–38.7	–180.3	–146.1	–76.4	–72.7	–97.5	–77.7	–60.2	–11.9	–79.5
Change in Reserves	169.7	324.6	35.8	137.9	209.3	118.7	80.2	38.5	78.7	94.8
Official Financing										
Financial Account Balance	–8.4	–15.0	–21.5	–12.2	–5.8	–12.7	–16.9	–7.7	–12.5	–19.3
Direct Investment, Net	–13.6	–16.5	–17.3	–13.0	–12.1	–12.6	–9.1	–12.0	–13.2	–15.3
Portfolio Investment, Net	–1.1	–3.5	0.4	0.8	–1.8	–1.9	–1.4	1.0	–3.4	–2.0
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	–0.2	–4.3	–6.3	–8.4	–0.8	–1.5	–3.4	–2.2	–6.6	–12.4
Change in Reserves	6.5	9.3	1.8	8.3	8.8	3.2	–3.1	5.5	10.7	10.4
Net Debtor Economies by Debt-Servicing Experience										
Economies with Arrears and/or Rescheduling during 2009–13										
Financial Account Balance	9.9	7.1	4.5	–2.1	–16.5	–29.6	–49.3	–54.4	–43.1	–55.9
Direct Investment, Net	–18.7	–27.1	–33.5	–21.1	–29.8	–28.2	–35.7	–33.3	–29.2	–35.6
Portfolio Investment, Net	–8.7	–10.2	11.2	17.1	–18.2	7.0	8.4	–0.7	–7.7	–0.6
Financial Derivatives, Net	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Other Investment, Net	26.8	19.9	16.8	–1.2	19.7	5.9	–6.7	–11.1	–5.5	–18.5
Change in Reserves	10.4	24.4	10.0	3.2	11.8	–14.3	–15.3	–9.3	–0.7	–1.2
Memorandum										
World										
Financial Account Balance	164.2	259.2	92.3	170.0	110.2	133.2	112.3	359.6	410.4	374.5

Note: The estimates in this table are based on individual countries' national accounts and balance of payments statistics. Country group composites are calculated as the sum of the U.S. dollar values for the relevant individual countries. Some group aggregates for the financial derivatives are not shown because of incomplete data. Projections for the euro area are not available because of data constraints.

[1]In this table, Other Advanced Economies means advanced economies excluding the G7 (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and euro area countries. Group aggregates for financial derivatives are not shown because of incomplete data.

[2]Georgia and Turkmenistan, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.

Table A14. Summary of Net Lending and Borrowing

(Percent of GDP)

	Averages								Projections		
	1992–99	2000–07	2008	2009	2010	2011	2012	2013	2014	2015	Average 2016–19
Advanced Economies											
Net Lending and Borrowing	0.0	–0.9	–1.2	–0.2	0.0	–0.1	–0.1	0.5	0.3	0.2	0.2
Current Account Balance	0.0	–0.9	–1.2	–0.2	0.0	–0.2	–0.1	0.4	0.3	0.2	0.1
Savings	22.6	21.6	20.8	18.6	19.5	20.0	20.0	20.1	20.4	20.6	21.5
Investment	23.0	22.4	22.3	19.1	19.9	20.3	20.3	20.0	20.3	20.6	21.5
Capital Account Balance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
United States											
Net Lending and Borrowing	–1.7	–4.7	–4.6	–2.6	–3.0	–3.0	–2.8	–2.4	–2.5	–2.6	–2.8
Current Account Balance	–1.7	–4.8	–4.7	–2.6	–3.0	–3.0	–2.9	–2.4	–2.5	–2.6	–2.8
Savings	19.2	18.4	15.4	14.4	15.1	15.7	16.3	17.0	17.3	17.8	19.0
Investment	21.6	22.5	20.8	17.5	18.4	18.5	19.2	19.3	19.8	20.5	21.8
Capital Account Balance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Euro Area											
Net Lending and Borrowing	. . .	0.1	–1.4	0.0	0.2	0.2	1.5	2.6	. . .	. . .	. . .
Current Account Balance	. . .	0.0	–1.6	–0.1	0.1	0.1	1.4	2.4	2.0	1.9	1.9
Savings	22.4	22.6	22.4	20.2	20.8	21.4	21.6	21.6	21.6	21.7	22.2
Investment	21.3	21.3	22.2	18.8	19.2	19.6	18.4	17.8	18.0	18.1	18.8
Capital Account Balance	. . .	0.1	0.1	0.1	0.1	0.1	0.1	0.2	. . .	. . .	. . .
Germany											
Net Lending and Borrowing	–1.1	3.0	5.9	6.0	5.9	6.3	7.4	7.1	6.2	5.8	5.2
Current Account Balance	–1.0	3.0	6.0	6.0	5.9	6.3	7.4	7.0	6.2	5.8	5.2
Savings	21.1	21.8	25.2	22.4	23.2	24.5	24.6	24.0	23.9	23.7	23.6
Investment	22.1	18.9	19.3	16.4	17.3	18.3	17.3	17.0	17.7	17.8	18.4
Capital Account Balance	–0.1	0.0	0.0	–0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0
France											
Net Lending and Borrowing	1.4	0.4	–1.7	–1.3	–1.3	–1.7	–2.1	–1.2	–1.3	–1.0	–0.3
Current Account Balance	1.4	0.4	–1.7	–1.3	–1.3	–1.7	–2.1	–1.3	–1.4	–1.0	–0.3
Savings	21.7	22.7	22.4	20.0	20.6	21.5	20.6	20.7	20.7	20.7	21.6
Investment	20.3	22.3	24.1	21.3	21.9	23.2	22.7	22.0	22.1	21.8	22.0
Capital Account Balance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Italy											
Net Lending and Borrowing	1.5	–0.5	–2.9	–1.9	–3.4	–2.9	0.0	1.0	1.2	1.2	0.3
Current Account Balance	1.3	–0.6	–2.8	–1.9	–3.4	–3.0	–0.3	1.0	1.2	1.2	0.3
Savings	21.2	20.6	18.8	16.9	16.6	16.8	17.7	18.2	18.6	18.8	19.4
Investment	20.0	21.2	21.6	18.9	20.1	19.8	18.0	17.2	17.4	17.6	19.0
Capital Account Balance	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0
Spain											
Net Lending and Borrowing	–0.4	–4.9	–9.1	–4.4	–3.9	–3.2	–0.6	1.5	0.9	1.1	1.8
Current Account Balance	–1.3	–5.8	–9.6	–4.8	–4.5	–3.7	–1.2	0.8	0.1	0.4	1.0
Savings	21.1	22.5	19.5	19.1	18.3	17.5	18.5	19.0	18.1	18.4	19.0
Investment	22.4	28.3	29.1	23.9	22.8	21.2	19.8	18.2	18.0	18.1	18.0
Capital Account Balance	0.9	0.8	0.5	0.4	0.6	0.5	0.6	0.8	0.8	0.8	0.8
Japan											
Net Lending and Borrowing	2.3	3.3	2.8	2.8	3.9	2.1	1.0	0.5	0.9	1.0	1.2
Current Account Balance	2.5	3.4	2.9	2.9	4.0	2.1	1.0	0.7	1.0	1.1	1.3
Savings	30.3	26.5	25.9	22.6	23.8	22.3	21.8	21.7	23.1	23.1	23.7
Investment	27.9	23.1	23.0	19.7	19.8	20.2	20.8	21.0	22.2	21.9	22.4
Capital Account Balance	–0.1	–0.1	–0.1	–0.1	–0.1	0.0	0.0	–0.2	–0.1	–0.1	–0.1
United Kingdom											
Net Lending and Borrowing	–1.0	–2.2	–0.9	–1.4	–2.6	–1.4	–3.8	–4.4	–4.2	–3.7	–2.4
Current Account Balance	–1.0	–2.2	–0.9	–1.4	–2.7	–1.5	–3.8	–4.5	–4.2	–3.8	–2.4
Savings	16.2	15.3	16.1	12.7	12.3	13.5	10.9	10.0	10.8	11.8	14.5
Investment	17.2	17.5	17.1	14.1	15.0	14.9	14.7	14.5	15.0	15.5	16.9
Capital Account Balance	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Table A14. Summary of Net Lending and Borrowing *(continued)*

(Percent of GDP)

	Averages								Projections		
											Average
	1992–99	2000–07	2008	2009	2010	2011	2012	2013	2014	2015	2016–19
Canada											
Net Lending and Borrowing	–1.3	1.7	0.1	–3.0	–3.5	–2.8	–3.4	–3.2	–2.7	–2.5	–2.2
Current Account Balance	–1.6	1.7	0.1	–2.9	–3.5	–2.8	–3.4	–3.2	–2.7	–2.5	–2.2
Savings	17.8	23.4	24.1	18.9	19.8	21.1	21.2	21.1	21.2	21.4	22.1
Investment	19.8	21.7	24.0	21.8	23.3	23.8	24.7	24.3	23.8	24.0	24.3
Capital Account Balance	0.3	0.0	0.0	–0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Advanced Economies[1]											
Net Lending and Borrowing	1.3	3.9	3.0	4.1	4.8	3.9	4.2	5.6	5.1	4.9	4.3
Current Account Balance	1.4	4.0	3.0	4.1	4.8	3.9	4.3	5.5	5.1	4.8	4.3
Savings	. . .	28.3	29.5	27.2	29.0	29.1	29.3	29.2	29.0	28.9	28.8
Investment	26.3	24.8	26.1	23.0	24.7	25.2	25.4	24.4	24.4	24.5	24.9
Capital Account Balance	0.0	–0.1	–0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Emerging Market and Developing Economies											
Net Lending and Borrowing	. . .	2.7	3.6	1.4	1.7	1.7	1.5	0.9	0.9	0.7	0.5
Current Account Balance	. . .	2.6	3.5	1.3	1.5	1.6	1.4	0.8	0.8	0.5	0.4
Savings	23.4	28.7	33.4	31.7	32.6	33.2	32.9	32.4	32.6	32.6	32.8
Investment	24.4	25.9	29.8	30.2	31.0	31.4	31.5	31.6	31.9	32.0	32.4
Capital Account Balance	. . .	0.2	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1
Regional Groups											
Commonwealth of Independent States[2]											
Net Lending and Borrowing	0.7	7.3	5.0	1.9	3.8	4.3	2.3	0.6	1.6	2.1	1.8
Current Account Balance	0.7	7.8	5.0	2.6	3.4	4.3	2.5	0.6	1.9	2.1	1.8
Savings	25.6	29.7	30.0	22.0	26.1	28.8	26.4	23.8	23.4	23.2	23.6
Investment	25.1	22.0	25.1	19.2	22.5	24.5	23.8	23.1	21.4	21.1	21.9
Capital Account Balance	0.0	–0.5	0.0	–0.7	0.4	0.0	–0.2	0.0	–0.4	0.0	0.0
Emerging and Developing Asia											
Net Lending and Borrowing	. . .	3.5	5.9	3.5	2.6	0.9	1.0	1.1	1.0	1.1	1.4
Current Account Balance	. . .	3.4	5.8	3.4	2.5	0.9	1.0	1.0	1.0	1.1	1.4
Savings	32.3	37.5	44.3	44.6	44.6	43.3	43.4	43.3	43.4	43.3	43.1
Investment	32.8	34.2	38.5	41.2	42.0	42.3	42.4	42.3	42.3	42.2	41.7
Capital Account Balance	. . .	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Emerging and Developing Europe											
Net Lending and Borrowing	–2.0	–4.6	–7.7	–2.4	–4.2	–5.6	–3.6	–2.7	–1.8	–2.4	–3.0
Current Account Balance	–2.6	–4.9	–8.2	–3.2	–4.9	–6.4	–4.6	–3.9	–3.2	–3.5	–4.0
Savings	19.3	16.9	16.7	15.7	15.7	16.5	16.1	16.1	17.3	17.2	17.3
Investment	21.6	21.4	24.9	18.9	20.6	22.8	20.6	20.0	20.4	20.7	21.2
Capital Account Balance	0.5	0.3	0.5	0.7	0.7	0.9	1.0	1.2	1.3	1.2	1.0
Latin America and the Caribbean											
Net Lending and Borrowing	–2.7	–0.1	–0.9	–0.7	–1.1	–1.4	–1.9	–2.6	–2.5	–2.6	–2.6
Current Account Balance	–2.7	–0.2	–0.9	–0.7	–1.3	–1.4	–1.9	–2.7	–2.5	–2.6	–2.6
Savings	18.1	19.9	21.9	19.2	19.8	19.8	18.7	17.7	17.3	17.3	18.3
Investment	19.4	19.8	22.9	19.9	21.1	21.3	20.6	20.4	20.0	20.1	20.9
Capital Account Balance	0.1	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Middle East, North Africa, Afghanistan, and Pakistan											
Net Lending and Borrowing	–1.2	9.5	12.9	1.7	6.8	13.3	12.7	10.0	8.0	6.3	3.9
Current Account Balance	–1.3	9.3	12.8	1.7	6.5	13.2	12.7	10.0	7.8	6.2	3.8
Savings	23.0	34.3	42.3	32.6	35.9	40.2	38.5	36.4	35.1	33.6	31.9
Investment	22.6	23.6	28.2	29.8	28.4	26.1	24.9	26.0	26.8	26.9	27.5
Capital Account Balance	0.0	0.2	0.1	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0
Sub-Saharan Africa											
Net Lending and Borrowing	–1.1	2.2	0.5	–2.1	0.9	–0.2	–1.7	–2.1	–2.2	–2.7	–2.9
Current Account Balance	–2.0	0.8	–0.2	–3.0	–0.8	–0.7	–2.0	–2.4	–2.6	–3.2	–3.3
Savings	13.5	19.2	20.5	18.4	19.6	19.5	18.7	17.7	17.2	16.9	17.0
Investment	16.8	18.4	20.4	21.1	20.2	20.0	20.4	19.8	19.8	20.1	20.3
Capital Account Balance	1.0	1.4	0.7	0.8	1.7	0.5	0.4	0.4	0.4	0.4	0.4

Table A14. Summary of Net Lending and Borrowing *(concluded)*

(Percent of GDP)

	Averages								Projections		
	1992–99	2000–07	2008	2009	2010	2011	2012	2013	2014	2015	Average 2016–19
Analytical Groups											
By Source of Export Earnings											
Fuel Exporters											
Net Lending and Borrowing	–0.2	10.2	11.7	3.0	6.7	10.5	9.3	7.0	6.0	5.3	3.7
Current Account Balance	–0.1	10.3	11.7	3.4	6.4	10.5	9.4	7.0	6.2	5.3	3.7
Savings	23.7	33.8	37.8	29.3	32.2	35.9	34.0	31.6	30.6	29.5	28.4
Investment	23.2	22.8	25.5	25.2	25.1	24.9	24.2	24.4	24.2	24.1	24.4
Capital Account Balance	0.0	0.0	0.0	–0.3	0.4	0.0	–0.1	0.0	–0.2	0.0	0.0
Nonfuel Exporters											
Net Lending and Borrowing	. . .	0.7	0.8	1.0	0.3	–0.9	–0.8	–0.8	–0.6	–0.6	–0.3
Current Account Balance	. . .	0.5	0.6	0.8	0.1	–1.1	–1.0	–1.0	–0.8	–0.7	–0.4
Savings	23.4	27.4	31.9	32.4	32.8	32.4	32.6	32.7	33.2	33.4	33.9
Investment	24.6	26.8	31.2	31.6	32.6	33.3	33.5	33.6	33.9	34.1	34.4
Capital Account Balance	. . .	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1
By External Financing Source											
Net Debtor Economies											
Net Lending and Borrowing	–2.3	–1.3	–3.6	–2.0	–2.1	–3.0	–3.4	–3.2	–2.9	–3.1	–3.1
Current Account Balance	–2.6	–1.5	–3.8	–2.2	–2.6	–3.2	–3.7	–3.5	–3.2	–3.3	–3.3
Savings	18.8	20.7	21.7	21.3	22.1	21.7	20.5	20.0	20.2	20.4	21.4
Investment	20.7	22.0	25.5	23.5	24.6	24.7	24.1	23.4	23.4	23.7	24.7
Capital Account Balance	0.2	0.3	0.2	0.3	0.5	0.2	0.2	0.3	0.3	0.3	0.2
Official Financing											
Net Lending and Borrowing	–2.0	–1.0	–5.6	–2.0	–0.3	–1.7	–2.6	–1.5	–1.9	–2.3	–2.2
Current Account Balance	–3.3	–2.1	–6.3	–2.8	–1.9	–2.2	–3.2	–2.1	–2.7	–2.8	–2.6
Savings	15.9	19.0	17.8	18.9	19.4	19.2	18.6	19.6	19.2	19.7	20.3
Investment	19.1	20.6	23.7	21.4	21.1	20.6	21.5	21.5	21.6	22.5	24.2
Capital Account Balance	1.3	1.1	0.7	0.8	1.5	0.5	0.6	0.7	0.8	0.5	0.4
Net Debtor Economies by Debt-Servicing Experience											
Economies with Arrears and/or Rescheduling during 2009–13											
Net Lending and Borrowing	–2.6	0.7	–0.3	–1.3	–1.0	–2.1	–3.1	–3.4	–2.9	–4.1	–3.7
Current Account Balance	–3.0	0.0	–0.8	–1.8	–2.0	–2.4	–3.3	–3.6	–3.2	–4.3	–3.9
Savings	14.4	18.4	21.2	17.0	18.6	18.5	15.7	15.7	16.2	15.1	16.1
Investment	17.4	18.3	21.6	18.5	20.1	20.2	19.0	19.3	19.4	19.4	20.0
Capital Account Balance	0.4	0.7	0.5	0.5	1.0	0.2	0.2	0.2	0.3	0.2	0.2
Memorandum											
World											
Net Lending and Borrowing	–0.2	0.0	0.3	0.3	0.6	0.5	0.5	0.6	0.5	0.4	0.3
Current Account Balance	–0.3	–0.1	0.2	0.3	0.5	0.5	0.5	0.6	0.5	0.3	0.3
Savings	22.8	23.3	24.7	22.8	24.1	24.8	24.9	25.0	25.2	25.5	26.2
Investment	23.3	23.2	24.6	22.5	23.7	24.3	24.5	24.5	24.8	25.2	26.0
Capital Account Balance	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: The estimates in this table are based on individual countries' national accounts and balance of payments statistics. Country group composites are calculated as the sum of the U.S. dollar values for the relevant individual countries. This differs from the calculations in the April 2005 and earlier issues of the WEO, in which the composites were weighted by GDP valued at purchasing power parities as a share of total world GDP. The estimates of gross national savings and investment (or gross capital formation) are from individual countries' national accounts statistics. The estimates of the current account balance, the capital account balance, and the financial account balance (or net lending/net borrowing) are from the balance of payments statistics. The link between domestic transactions and transactions with the rest of the world can be expressed as accounting identities. Savings (S) minus investment (I) is equal to the current account balance (CAB) (S – I = CAB). Also, net lending/net borrowing (NLB) is the sum of the current account balance and the capital account balance (KAB) (NLB = CAB + KAB). In practice, these identities do not hold exactly; imbalances result from imperfections in source data and compilation as well as from asymmetries in group composition due to data availability.
[1]In this table, Other Advanced Economies means advanced economies excluding the G7 (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and euro area countries.
[2]Georgia and Turkmenistan, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.

Table A15. Summary of World Medium-Term Baseline Scenario

	Averages				Projections		Averages	
	1996–2003	2004–11	2012	2013	2014	2015	2012–15	2016–19
			Annual Percent Change					
World Real GDP	**3.6**	**4.3**	**3.4**	**3.3**	**3.3**	**3.8**	**3.5**	**4.1**
Advanced Economies	2.8	1.6	1.2	1.4	1.8	2.3	1.7	2.4
Emerging Market and Developing Economies	4.6	6.8	5.1	4.7	4.4	5.0	4.8	5.2
Memorandum								
Potential Output								
Major Advanced Economies	2.5	1.6	1.0	1.4	1.4	1.6	1.4	1.7
World Trade, Volume[1]	**6.1**	**5.7**	**2.9**	**3.0**	**3.8**	**5.0**	**3.7**	**5.6**
Imports								
Advanced Economies	6.2	4.1	1.2	1.4	3.7	4.3	2.6	5.2
Emerging Market and Developing Economies	6.3	9.8	6.0	5.3	4.4	6.1	5.5	6.3
Exports								
Advanced Economies	5.5	4.9	2.0	2.4	3.6	4.5	3.1	5.1
Emerging Market and Developing Economies	7.2	7.6	4.6	4.4	3.9	5.8	4.7	6.1
Terms of Trade								
Advanced Economies	0.1	–0.7	–0.4	0.9	0.2	–0.2	0.1	0.0
Emerging Market and Developing Economies	0.8	2.2	0.7	–0.2	0.0	–0.6	0.0	–0.4
World Prices in U.S. Dollars								
Manufactures	–1.3	2.8	0.4	–1.1	–0.2	–0.5	–0.3	0.4
Oil	6.7	17.4	1.0	–0.9	–1.3	–3.3	–1.1	–1.6
Nonfuel Primary Commodities	–2.5	11.1	–10.0	–1.2	–3.0	–4.1	–4.6	–0.7
Consumer Prices								
Advanced Economies	1.9	2.1	2.0	1.4	1.6	1.8	1.7	2.0
Emerging Market and Developing Economies	11.0	6.6	6.1	5.9	5.5	5.6	5.8	4.9
Interest Rates			*Percent*					
Real Six-Month LIBOR[2]	2.7	0.4	–1.1	–1.1	–1.3	–1.2	–1.2	1.0
World Real Long-Term Interest Rate[3]	3.0	1.5	0.1	0.8	0.6	0.9	0.6	2.0
Current Account Balances			*Percent of GDP*					
Advanced Economies	–0.4	–0.7	–0.1	0.4	0.3	0.2	0.2	0.1
Emerging Market and Developing Economies	. . .	2.8	1.4	0.8	0.8	0.5	0.9	0.4
Total External Debt								
Emerging Market and Developing Economies	36.2	27.1	25.1	25.7	26.1	26.1	25.8	25.5
Debt Service								
Emerging Market and Developing Economies	9.5	8.8	8.5	8.9	9.3	9.1	9.0	8.9

[1]Data refer to trade in goods and services.
[2]London interbank offered rate on U.S. dollar deposits minus percent change in U.S. GDP deflator.
[3]GDP-weighted average of 10-year (or nearest-maturity) government bond rates for Canada, France, Germany, Italy, Japan, United Kingdom, and United States.

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