



Strategic Asset Allocation over the Long-Term (SAALT)

Survey of Financial and Macroeconomic Prospects for 2016-2017

A summary note

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Introduction

The survey presents a summary of current developments and prospects for the world economy, in the short and middle terms, according to reports of selected international organizations, financial market institutions and the specialized media.

It is part of a project conceived to provide financial guidance for private investments and to enhance financial literacy.

The two first sections, Financial and Macroeconomic Developments and Prospects, contain two subsections: Emerging Market and Developing Economies; Advanced Economies. Besides the analyses of group of economies by level of development and region, there are analyses for selected countries.

Along the text, we placed occasional figures and tables related to current issues. The statistical appendix contains time series for group of economies and individual countries.

After the bibliographic reference, there is a lexicon with brief explanations and a list of abbreviations used in the text. Words that we mark in italics along the text can be found in the lexicon, or we make explicit references.

Comments and suggestions are very welcome.

Financial Developments and Prospects

Overview

1. Recent Developments and Short Run Prospects

In the IMF view, main challenges are ahead for the global policy and they are summarized by the following triad:

Figure 1: Triad of Global Policy Challenges



Source: IMF staff.

(Source: IMF, 2015d, p. 8)

- **Emerging Markets' Vulnerabilities**

One main issue in the current global scenario is China's attempts to move from a growth model based on exports to a more consumption-driven growth. The challenge is to make the transition without slowing the economic activity too much.

The current deceleration of China contributes to the ongoing fall in commodity prices, which affects commodity exporters like Brazil, Chile, Malaysia, Russia and South Africa, whose currencies depreciated considerably against the dollar as shown later.

China is also aiming to develop a more market-based financial system, which could reduce the dependency on public banks and improve capital allocation. However, the transition is not being smooth. The observed volatility in the stock market since mid-2014 is a source of concern. In addition, a recent shift in the exchange rate policy, which was poorly communicated, had further affected commodity prices and exchange rates in emerging markets.

Another main issue in the current global scenario is the prospect of a gradual rise of interest rates by the U.S. Federal Reserve (FED).

Several emerging markets economies are more vulnerable to a tightening in global financial conditions, due to higher leverage of the private sector and foreign currency exposure.

However, there is considerable heterogeneity among emerging markets economies, as many economies improved their resilience to external shocks through a

combination of "increased exchange rate flexibility, higher foreign exchange reserves, increased reliance on FDI flows and domestic-currency external financing, and generally stronger policy frameworks" (IMF, 2015d, p. X).

- **Advanced Economies Legacies**

Advanced economies face legacies from the financial crisis, high public and private debts in particular, besides banking vulnerabilities and remaining gaps in the euro area architecture.

Spillovers from Greece to the Euro area are limited so far, but the threat of further imbalances are not eradicated, nor the possibility of ruptures in the European Union.

Nevertheless, the GFSR of October 2015 notices financial stability improvements in advanced economies, in comparison to the GFSR of April 2015:

"(...) This progress reflects a strengthening macrofinancial environment in advanced economies as the recovery has broadened, confidence in monetary policies has firmed, and deflation risks have abated somewhat in the euro area.

The Federal Reserve is poised to raise interest rates as the preconditions for liftoff are nearly in place. This increase should help slow the further buildup of excesses in financial risk taking. Partly due to confidence in the European Central Bank's (ECB's) policies, credit conditions are improving and credit demand is picking up. Corporate sectors are showing tentative signs of improvement that could spawn increased investment and economic risk taking, including in the United States and Japan, albeit from low levels." (IMF, 2015d, p. IX).

- **Weak systemic market liquidity**

The policy response to the economic crisis created abnormal financial conditions:

"(...) Extraordinarily accommodative policies have contributed to a compression of risk premiums across a range of markets including sovereign bonds and corporate credit, as well as a compression of liquidity and equity risk premiums. (...)" (IMF, 2015d, p. X).

With the prospect of the gradual rise of interest rate by the FED:

"(...) the global financial system faces an unprecedented adjustment as risk premiums 'normalize' from historically low levels alongside rising policy rates and a modest cyclical recovery. Abnormal market conditions will need to adjust smoothly to the new environment. But there are risks from a rapid decompression, particularly given what appears to be more brittle market structures and market fragilities concentrated in credit intermediation channels, which could come to the fore as financial conditions normalize (...). Indeed, recent episodes of high market volatility and liquidity dislocations across advanced and emerging market asset classes highlight this challenge." (IMF, 2015d, p. X).

2. Middle Term Prospects

In a longer time perspective, a sharper-than-expected growth decline of China represents a considerable risk for other countries due to the potential spillovers.

Regarding the expected tighter U.S. monetary policy and the consequent decompression of risk premiums, the IMF works with three possible scenarios:

Figure 2: Three Scenarios for Decompression of Risk Premiums

Global Asset Market Disruption	Baseline	Successful Normalization
<ul style="list-style-type: none"> • Loss of confidence in policies • Growth declines • Delayed or stalled monetary normalization • Abrupt decompression of risk premiums amplified by low market liquidity • Credit cycle downturns in most emerging markets, along with disorderly deleveraging 	<ul style="list-style-type: none"> • Current policies • Mediocre growth • Only partial handover from financial risk taking to economic risk taking • Asynchronous monetary normalization in systemic advanced economies 	<ul style="list-style-type: none"> • Policy implementation complete • Higher medium-term growth driven by improved fundamentals • Handover from financial risk taking to economic risk taking • Smooth and converging monetary normalization in systemic advanced economies • Smooth decompression of risk premiums • Emerging market resilience, orderly deleveraging

Source: IMF staff.

(Source: IMF, 2015d, p. 8)

We discuss these scenarios at the end of the section Financial Prospects.

3. Long Run Issues

Nearly all economies are or will be confronted with the implications of population ageing, brought about by demographic transitions (lower fertility rates and longer life expectancy). There is an extensive and ongoing literature on the subject, which permeates several fields of Economics. Since the pioneer reform of the Chilean pension system in the beginning of the 80's, the economic debate is intense.

Another current issue with long run implications is the displacement of populations due to ethnical and religious conflicts and geopolitical disputes.

Finally yet importantly are the questions related to climate change and sustainable development.

The above issues are out of the scope of the present analysis, as we look at current developments and prospects in the short and middle terms.

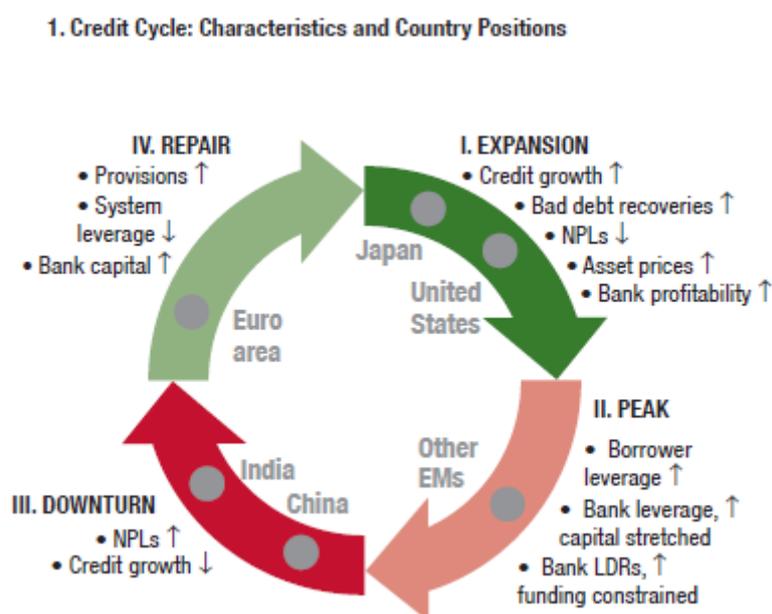
Emerging Market and Developing Economies

• Credit Cycle and Financial Health

“(…) Credit cycles describe the consequences of credit growth on economic growth, asset quality, and leverage. In expansion, borrower profits and asset quality are robust, but high credit growth also increases banks’ and borrowers’ leverage. Leverage in banks and borrowers then peaks, followed by a contraction or slowdown in credit growth, downturn in asset quality, and rising nonperforming loans (NPLs). The process culminates in balance sheet repair and recapitalization, which sets the stage for a new credit cycle.” (IMF, 2015d, p. 10).

The position in the credit cycle summarizes current credit conditions and provides a broad picture of the financial health of economies as shown below.

Figure 3: Credit Cycle: Characteristics and Country Positions



(Source: IMF, 2015d, p.10)

EM = Emerging Market, NPL = Nonperforming Loan, LDR = Loan-to-Deposit Ratio.

Before the financial crisis, banks in a number of emergent markets were in better shape than their advanced economy peers due to differences in regulatory frameworks.

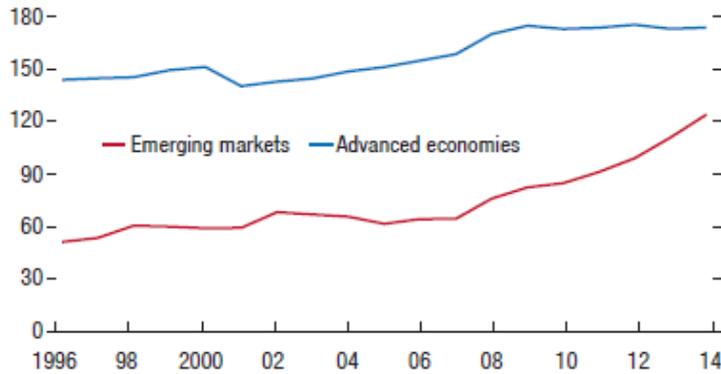
In the process of adjustment to the crisis:

“(…) Advanced economies have spent the past few years traversing a sharp downturn and painful balance sheet deleveraging and repair. (…)”, while “(…) key emerging market economies relied on rapid credit creation to sidestep the worst impacts of the global crisis. (…)”. (IMF, 2015d, p. 10).

Now, leverages are increasing and bank’s balancing sheets are deteriorating in other EMs economies, while India and China are in the downturn phase. The Euro area is improving its financial health, while Japan and U.S. are already initiating a new phase of credit expansion.

The following three charts show the trajectories of key financial health indicators in EMs and advanced economies (Source: IMF, 2015d, p. 11):

**Figure 4: Private Sector Debt to GDP
(Percent)**



Sources: Bank for International Settlements (BIS); Haver Analytics; and IMF Staff calculations

Note: Private sector debt refers to the sum of credit to households (BIS: adjusted credit by all sectors to households and nonprofit institutions serving households) and credit to nonfinancial firms (BIS: adjusted credit by all sectors to nonfinancial corporations). In the case of Argentina, Brazil, China, India, Malaysia, Russia, Saudi Arabia, and South Africa, it refers to the BIS series of adjusted credit by all sectors to the nonfinancial private sector.

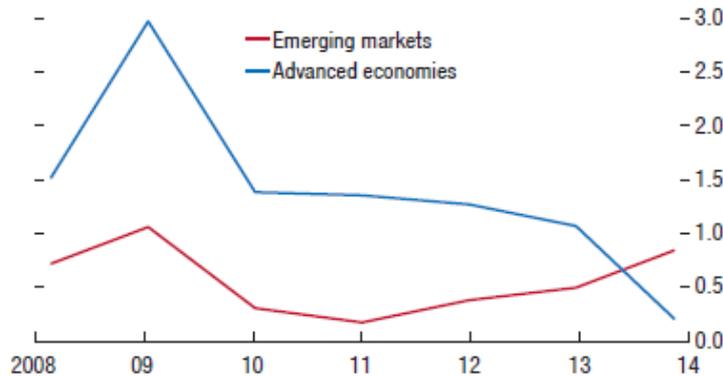
**Figure 5: Corporate Debt to EBITDA
(Times)**



Sources: Standard & Poor's Capital IQ; and IMF staff calculations.

Note: EBITDA = earnings before interest, taxes, depreciation, and amortization.

**Figure 6: New Nonperforming Loans to Risk-Weighted Assets
(Percent)**



Sources: Bankscope; and IMF staff calculations.

Note: Loans are net of recoveries.

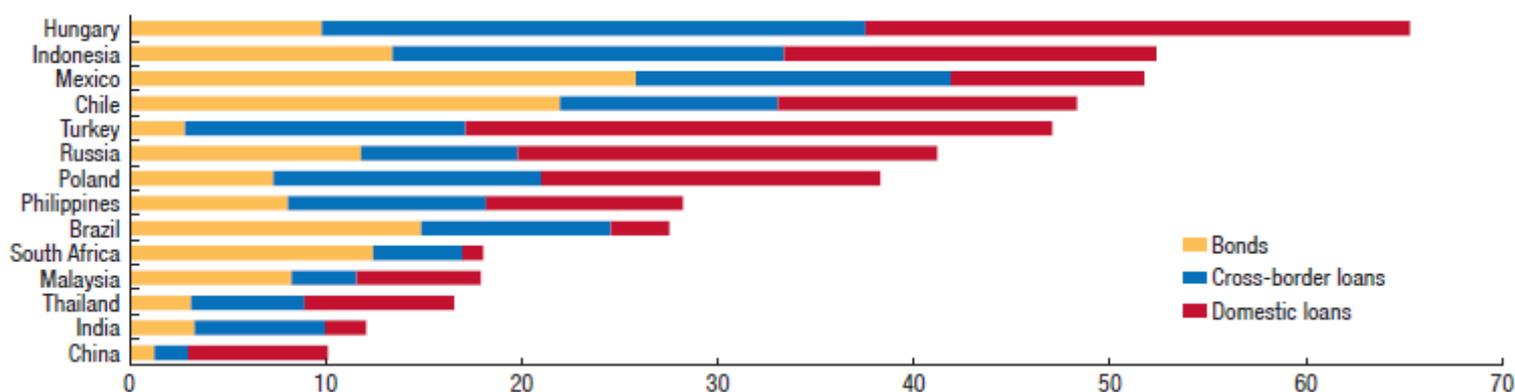
In EM economies, the private sector debt to GDP is growing faster since 2010 (Figure 4). The debt-servicing capacity of corporations is declining (Figure 5). The share of nonperforming loans is rising and now it exceeds the levels of banks in advanced economies, which are declining (Figure 6).

“(…) Household leverage is also high in some emerging markets, but household borrowing is a small portion of total borrowing across virtually all emerging markets. Public sector leverage is generally low both in absolute terms and relative to advanced economy peers.” (Source: IMF, 2015d, p. 9).

In EM companies, the rising debt-to-EBITDA ratios increases the liquidity risk, as lenders can decline to roll over funding. Next to it, there are “two additional risk factors that have become much more severe in recent months: external and foreign currency borrowing and borrower cash flows linked to weakening commodity prices.” (Source: IMF, 2015d, p. 9).

Figure 7 shows the share of nonfinancial corporate debt denominated in foreign currency, usually U.S. dollars, in selected EM economies.

Figure 7: Foreign Currency Nonfinancial Corporate Debt
(Percent of total corporate debt, 2014:Q4)



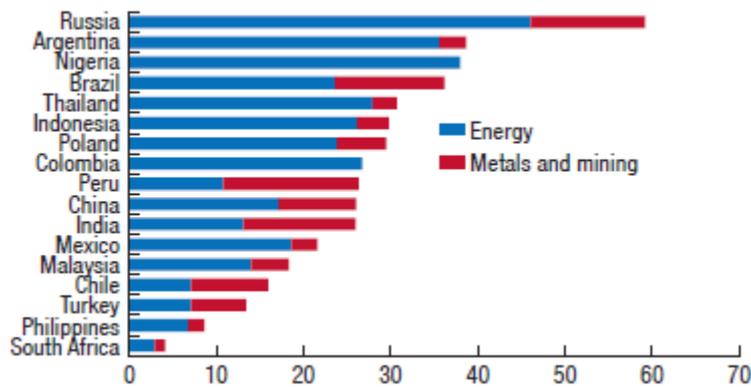
Sources: Bank for International Settlements (BIS); Bloomberg, L.P.; CEIC; IMF, Monetary and Banking database; and IMF staff calculations
Note: Bonds include securities issued abroad and are as of September 2015 (Bloomberg). Cross-border loans are for the nonbank sector. We approximate cross-border loans denominated in foreign currency using the level of cross-border loans for each country denominated in specific currencies as reported in the bank for International Settlements international banking statistics. Indian domestic loans are as of 2013:Q3.

(Source: IMF, 2015d, p.12)

A considerable share of nonfinancial corporate debt is subject to risk of currency depreciation (Figure 7).

Figure 8 shows the indebtedness of commodity producers relative to total corporate debt, computed out of a sample of 442 energy firms and 660 metals and mining firms from 18 emerging markets. The numerator is the outstanding debt of energy and metals and mining companies in the sample, whereas the denominator is the aggregate debt of the sample of firms.

Figure 8: Borrowings of Commodity Producers
(Percent of total corporate debt)



(Source: IMF, 2015d, p.12)

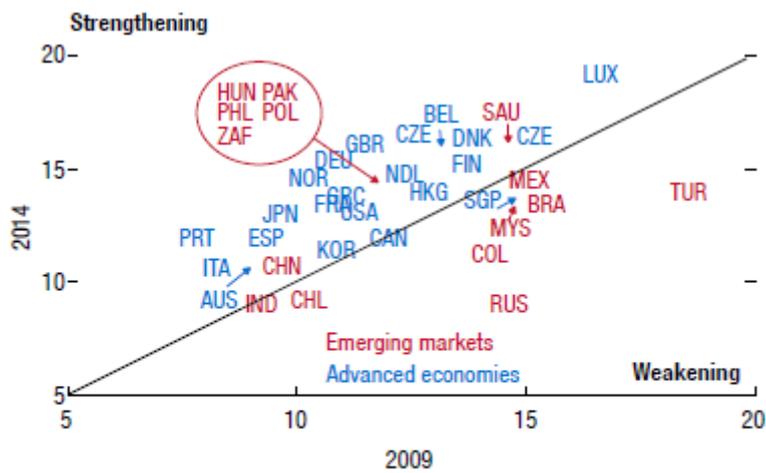
“(…) Economies whose firms display both high external and foreign currency borrowings and high exposure to commodity prices are particularly at risk of rising defaults and banking system losses.” (IMF, 2015d, p. 10).

Turning to the financial health of banks:

“(…) Capital ratios in most advanced economy banking systems have improved during the past five years, mainly through a combination of very low credit growth and modest profitability. Despite their more robust profitability, emerging market systems’ much faster new asset growth has absorbed essentially all of the retained earnings and new capital raised during the past five years. (…)” (IMF, 2015d, p. 10).

Figure 9 shows the average *Tier One Capital* ratio in selected economies, in 2009 (x axis) and 2014 (y axis). Countries above the line improved their funding level.¹

Figure 9: Banking System Average Regulatory Tier 1 Ratio
(Percent of risk-weighted assets)



Source: IMF, Financial Soundness Indicators.

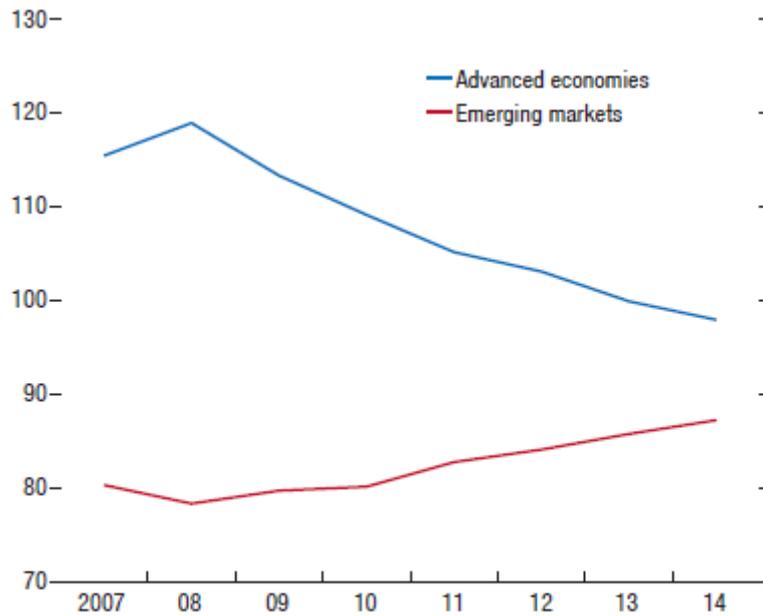
Note: Data labels in the figure use International Organization for Standardization (ISO) country codes.

(Source: IMF, 2015d, p.13)

¹ For obtaining the country name, given the three-digit code: <https://www.iso.org/obp/ui/#home>.

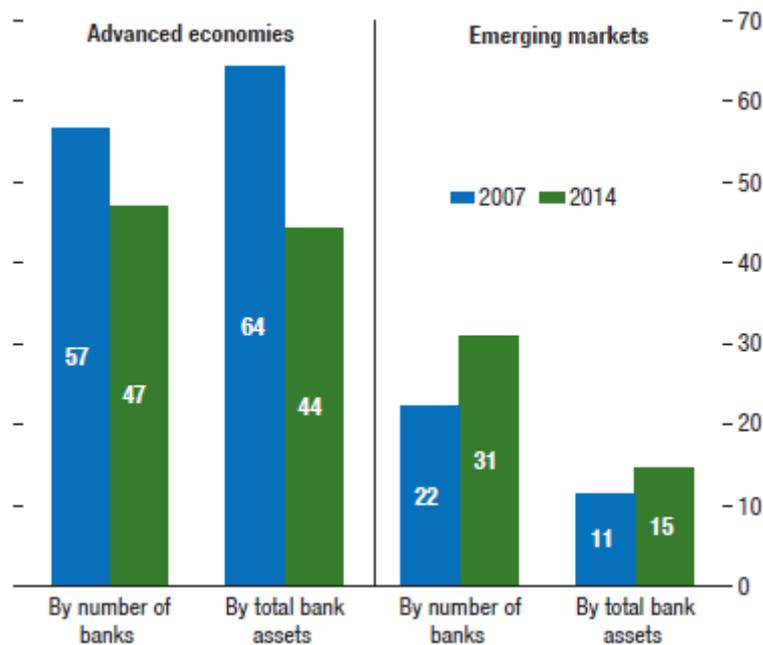
Figure 10 and Figure 11 complement the comparative evolution of banks' financial health in advanced and EM economies (source: IMF, 2015d, p. 15):

**Figure 10: Loan-to-Deposit Ratio
(Percent)**



Sources: Bankscope; and IMF staff calculations.

**Figure 11: Share of Banks with Loan-to-Deposit Ratios Greater than 100 Percent
(Percent)**



Sources: Bankscope; and IMF staff calculations.

“(…) Emerging market banks have historically relied heavily on deposits, which are a stable, low-cost source of funding that has been a cornerstone of their performance and stability (…). But funding positions in some countries are now approaching statutory ceilings (domestic liquidity regulations or the Basel III liquidity requirements) or an “economic” ceiling that is effectively set by banks’ access to funding at a reasonable cost. This deterioration in funding positions is a further constraint on banks’ ability to underwrite the credit needed to drive growth.” (IMF, 2015d, p. 12).

China

- Recent developments in China’s equity market and its implications

The development and consolidation of financial institutions in China are necessary steps in its transition to a market-based economy. So far, it is an ongoing process with mishaps.

“(…) A deeper Chinese equity market would help facilitate needed deleveraging by providing an avenue for firms to raise equity capital and reduce reliance on banks. However, progressive relaxation of rules on margin borrowing to buy equities, a perception of official support for rising equity prices, and shortcomings in supervision created the conditions for a debt-fueled rally that pushed valuations to bubble territory by June 2015 (…).” (IMF, 2015d, p. 13).

“The dramatic upswing in Chinese equity prices that began in mid-2014 was driven by a combination of factors. Perceptions of official support for equities, a reallocation of household saving from a weaker property market, and optimism about reforms in state-owned enterprises all contributed. The defining feature, however, was the surge in individual investor leverage in the form of margin financing. (…).” (IMF, 2015d, p. 13).²

When the market started to adjust equity prices, Chinese authorities intervened to prevent sharp price declines, which caused uncertainties regarding the supposed liberalization policy:

“(…) The subsequent correction in equity prices was fueled by a self-reinforcing dynamic of margin calls and forced selling, prompting heavy-handed official efforts to arrest precipitous price declines. Although equities have had limited systemic implications in China (partly because of limited wealth effects), actions to stem price declines have created uncertainty about the direction and consistency of policy.” (IMF, 2015d, p. 13-14).

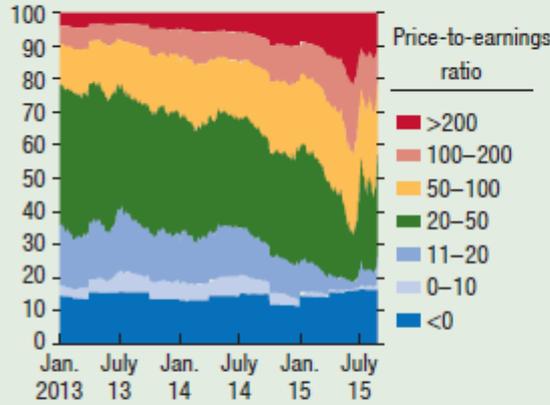
Figure 12 contains the data that document these developments:

² See the short and elucidative Financial Times article ‘Explainer: Margin finance in China’: <https://next.ft.com/content/7d667138-9fd3-11e4-aa89-00144feab7de#axzz3zm1V2ftd>, accessed in 02/22/16.

Figure 12: Chinese Equity Market

At the June 2015 peak, valuations touched very high levels for a wide range of stocks...

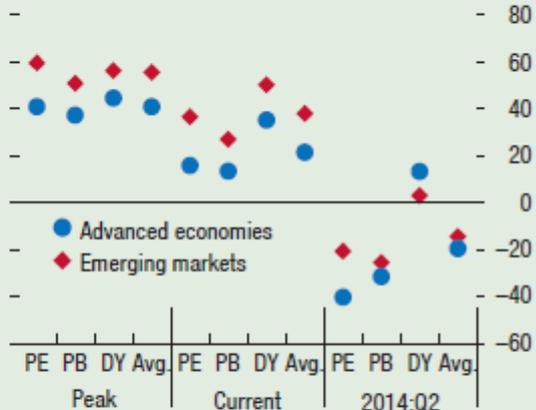
1. A-Share Price-to-Earnings Ratios (Distribution, percent)



Sources: Wind Info Co.; and IMF staff calculations.
Note: Price over reported earnings for the previous four quarters.

...pushing China's market valuation to rich premiums over international peers.

2. Equity Market Valuations Relative to Peers (Percent premium over peers)



Sources: Bloomberg, L.P.; Morgan Stanley Capital International; and IMF staff calculations.
Note: "Advanced economies" is the market-capitalization-weighted average of Group of Seven economies. "Emerging markets" is the market-capitalization-weighted average of Group of 20 emerging market economies. Avg. = average; DY = dividend yield; PB = price to book; PE = price to earnings.

A surge in margin borrowing by individual investors fueled the rally...

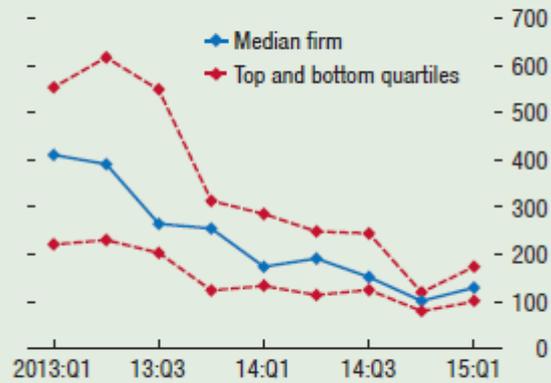
3. Outstanding Amount of Margin Lending for Equities, 2015



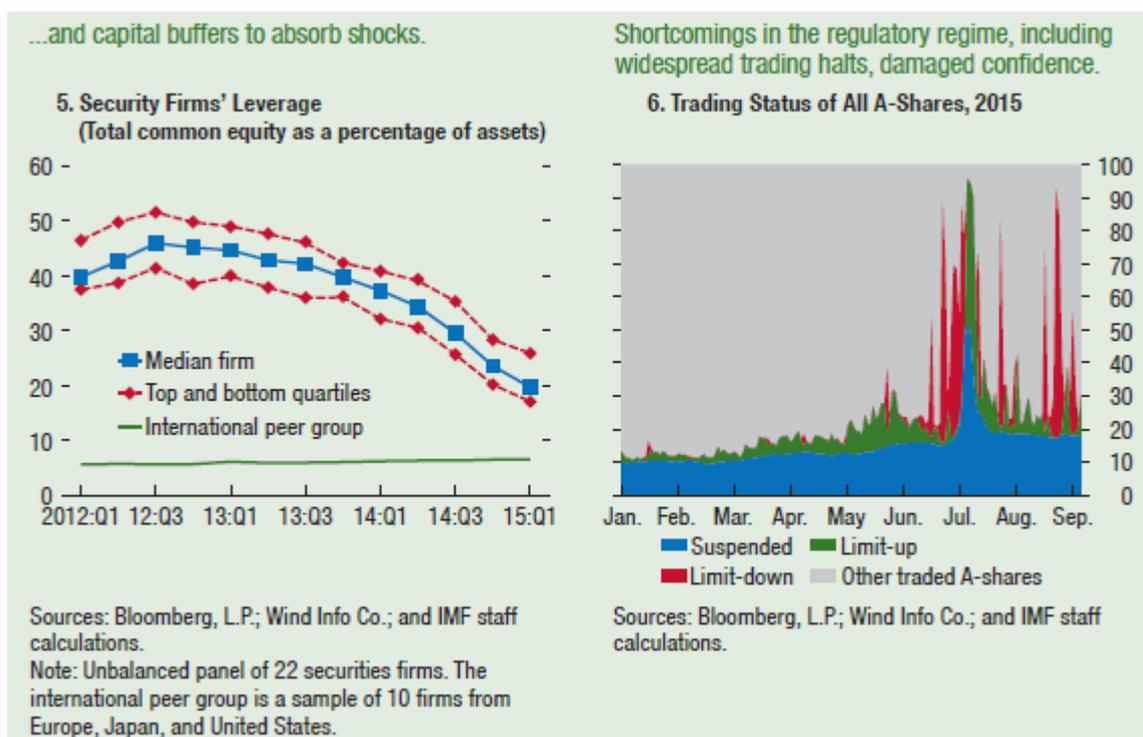
Source: CEIC.

...but for now, the securities firms that provided margin finance have adequate liquidity...

4. Liquidity of Securities Firms (Cash as a percentage of short-term debt)



Sources: Bloomberg, L.P.; Wind Info Co.; and IMF staff calculations.
Note: Unbalanced panel of 22 securities firms.



(Source: IMF, 2015d, p. 19-20)

The recent turmoil shows the incipency of the Chinese equity market and the degree of policy intervention, in light of the intended liberalization policy. However, as notice before, the upswings in equity prices had limited effects on the Chinese economy, due to the current marginal role of this market institution.

An article in the Financial Times discussed the scope of the recent turmoil in equity market for the Chinese economy. From it, we highlight the a-d points below:³

a. The wealth effect is limited

“(...) ‘Domestic wealth invested in stock markets is insignificant as a proportion of Chinese household wealth,’ says Chen Long of Gavekal Dragonomics, an investment research firm, who estimates that households hold about 5 per cent of their total assets in the stock market.”;

b. China’s stock market plays only a small role in financing the real economy

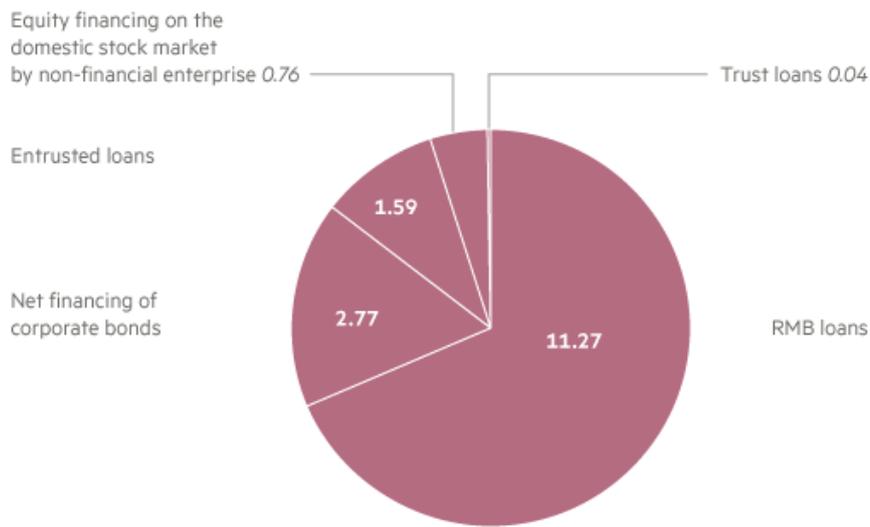
“(...) In 2015, China’s domestic stock market supplied Rmb760bn in funding to non-financial firms, through initial public offerings and follow-on offerings. This represents only 5 per cent of total financing flows to the real economy.”;

c. The role played by state-owned banks

“(...) Instead of stock markets, banks run the financial system. Bank loans made up 69 per cent of new financing in 2015. The sector is dominated by the Big Four state-owned banks, which loosen their purse-strings when the economy needs stimulus. Because of this, there is no threat of China’s finances drying up.”;

³ <https://next.ft.com/content/9062c7da-c379-11e5-808f-8231cd71622e#axzz3zm1V2ftd>, accessed in 02/22/16.

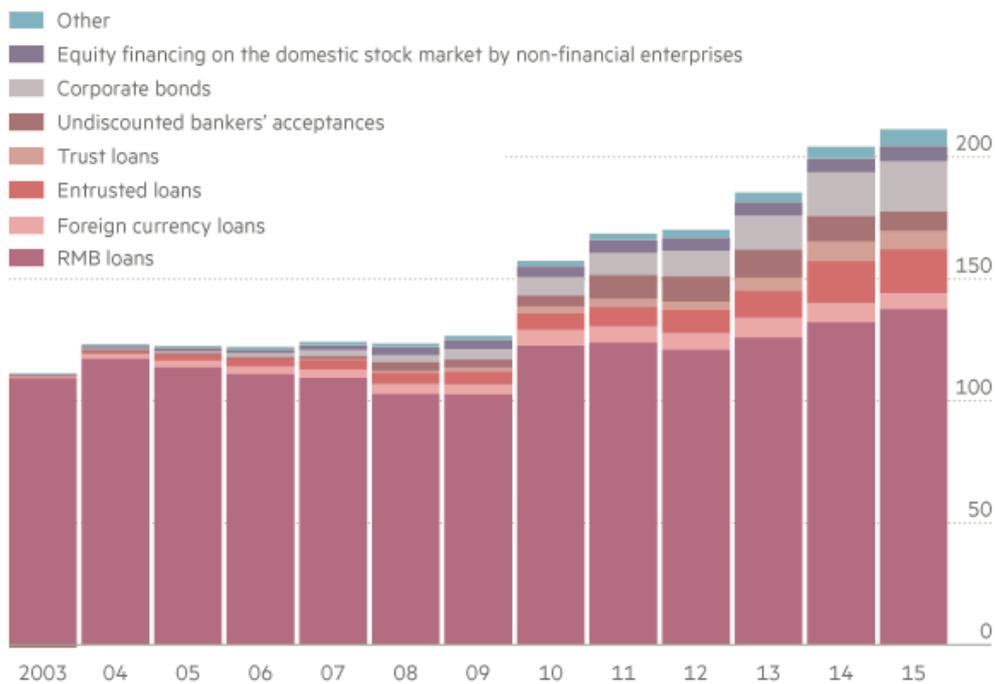
**Figure 13: Flow of financing to the Chinese real economy 2015
(Rmb tn)**



Source: People's Bank of China

FT

**Figure 14: China's total social financing (stock)
(Percent of GDP)**



Total Social Financing is the term used by the Chinese authorities to measure the supply of credit to the real economy
Sources: People's Bank of China; IMF

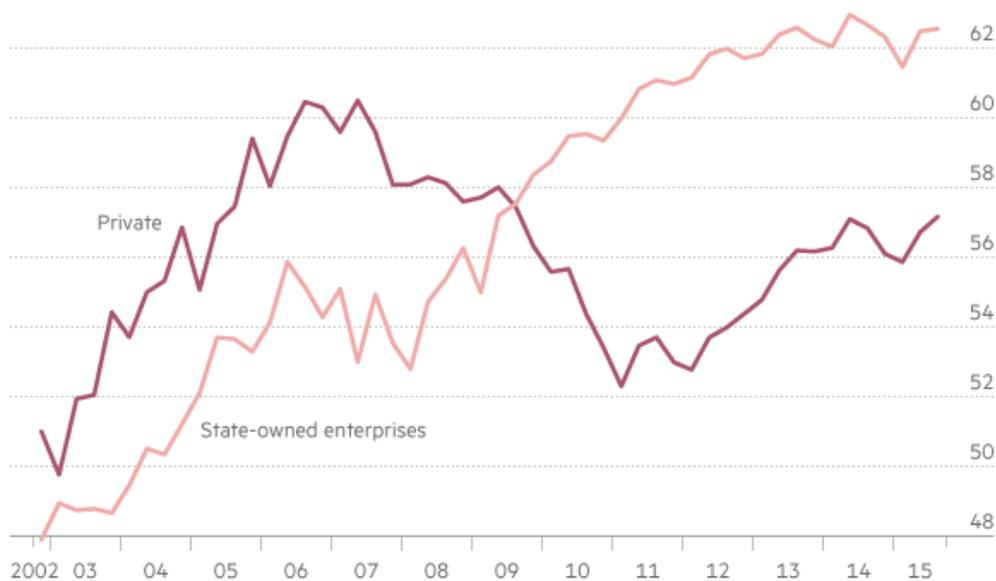
FT

d. Main problems with the Chinese financing model

“(…) Currently, private firms suffer because capital does not go where it is most needed. State-owned enterprises get the lion's share of bank lending. A study by Wenlang Zhang and colleagues at the Hong Kong Institute for Monetary Research found that SOEs have increased their leverage, which they define as loans relative to assets, by 10 per cent since 2008. In particular, SOEs in the construction sector

increased their loan-to-assets ratio by almost 50 per cent. Over the same period, the private sector deleveraged.”

**Figure 15: Total debt/total assets held by non-financial firms in China
(Percent)**



Source: Hong Kong Institute for Monetary Research

FT

Apart from probably misallocating resources, the current financing model concentrates risks, which leads to further misallocations:

“Because the Big Four banks form the foundation of the financial system, risk is concentrated. The failure of any single Big Four bank would be catastrophic (...).

Such a Lehman-style collapse is unlikely as the government implicitly guarantees the banks. But this leaves a lack of discipline in the sector because banks expect their bad loans to be rescued. If funding came from a wider range of sources, the effect of any one failure would be lessened and some funds would be allowed to fail. (...).

In sum,

“(...) Moving from debt-funded growth to equity-funded growth could put China’s economy on more stable ground. Equity investors accept that share prices change, whereas bond investors or bankers making loans systematically overestimate how safe their assets are. This leads to economies shouldering too much debt because creditors underestimate risk. China, with debt totaling more than 240 per cent of its GDP, is no exception.”

- **The Financial Health of the Chinese Bank System**

Figure 16 provides a self-explained picture of the current state of affairs in Chinese banks. Here, we just add that:

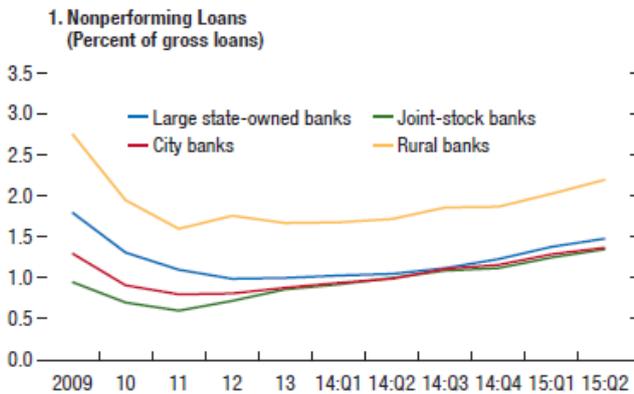
- charge-off* and *joint-stock bank* are defined in the lexicon in the appendix;
- the loan classification by Chinese banks is: “(...) normal, special mention, substandard, doubtful and loss -- depending on the number of overdue days and the probability of losses. The last three categories are counted as nonperforming.

When repayment on a loan is overdue by 91 to 180 days and the borrower can't fully repay the amount, it should be marked as substandard.”⁴

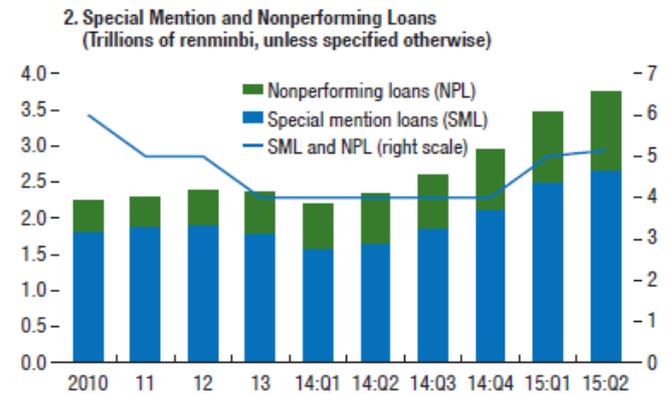
Figure 16: Chinese Banks: Asset Quality Challenges

China's slowing economic and credit growth reveals a gradual deterioration in asset quality, albeit from low levels...

...reflected in rising nonperforming and special mention loans.



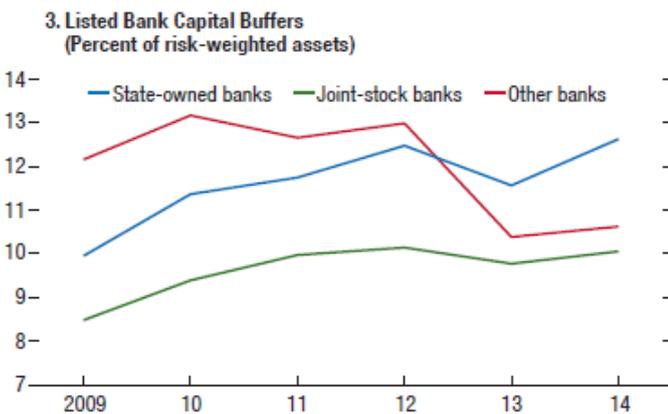
Sources: CEIC; and China Banking Regulatory Commission.



Sources: CEIC; and China Banking Regulatory Commission.

Deteriorating asset quality will contribute to an erosion of loss-absorbing buffers.

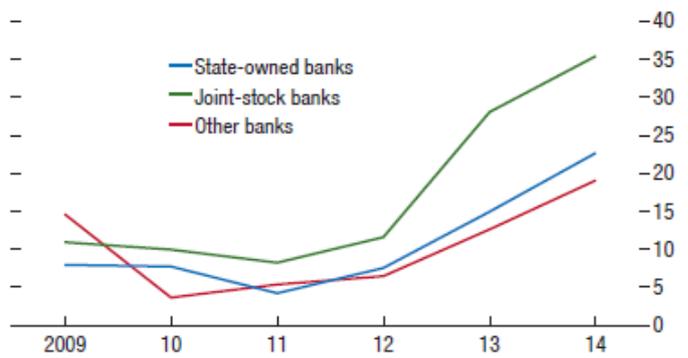
Banks are selling an increasing proportion of nonperforming loans.



Sources: Wind Info Co.; and IMF staff calculations.

Note: Capital buffers are defined as Tier 1 capital plus provisions less nonperforming loans. The sample of listed banks refers to 22 listed banks with combined assets of 55.8 trillion renminbi at the end of 2015:Q1, which accounts for 79 percent of the commercial banking system's gross loans.

4. Listed Bank Charge-Offs and Disposals (Percent of gross nonperforming loans)



Sources: Wind Info Co.; and IMF staff calculations.

Note: Gross nonperforming loans are calculated as the sum of previous nonperforming loans and gross flows (net increase and charge-offs). The sample covers 18 listed Chinese banks.

(Source: IMF, 2015d, p.14)

⁴ <http://www.bloomberg.com/news/articles/2015-09-07/china-s-banks-getting-less-strict-on-bad-loans-moody-s-says>, accessed in 02/22/16.

“(…) In China, banks have only recently begun to address the growing asset quality challenges associated with rising weaknesses in key areas of the corporate sector. Banks are doing this in part by accelerating charge-offs, which rose quickly to about 26 percent of gross nonperforming loans in 2014. Chinese banks will need to enhance loss-absorbing buffers if they are to meet the likely challenges from the exit of nonviable firms in industries with overcapacity and excessive indebtedness (…).” (IMF, 2015d, p. 11).

- **Chinese exchange rate policy**

In what follows, we clarify some peculiarities involving the Chinese currency, briefly look at the Chinese exchange rate policy in retrospect, bring current developments, present views about the current state of affairs and the prospects ahead.

1. Characteristics of the Chinese currency

- a. ‘Renminbi’ vs. ‘Yuan’

The ‘Renminbi’ (RMB) is the official name of China’s currency. ‘Yuan’ is the unit of account. This distinction is similar to ‘Sterling’ and ‘Pound’, the British currency and its unit of account respectively.

- b. Onshore vs. offshore exchange rates

There are two exchange rates: the onshore, Chinese Yuan (CNY) rate; the offshore, CNH rate.

The CNY rate applies at mainland China and it is under control of the Chinese monetary authority – the People's Bank of China (PBOC). It is the main exchange rate, as it is the official rate used by people in mainland China when they exchange with the rest of the world.

The CNH rate was established in 2004, when China partially opened its capital controls and allowed limited RMB deposits in Hong Kong. Later, in 2007, a RMB denominated bond market took place. Since 2010, the offshore RMB bond market is growing fast and, consequently, the offshore RMB market. Foreign exporters arbitrage between the RMB rates: they receive RMBs from importers at mainland China, according to the CNY rate, and trade for dollars offshore at the CNH rate. Therefore, the RMB offshore market tends to grow through trade and through the relaxation of Chinese capital controls.⁵

- c. One currency and two exchange rate systems

The CNH rate is free to float since it was established. In contrast, in mainland China, the PBOC controls the CNY.

⁵ <http://www.businessinsider.com/difference-between-onshore-and-offshore-renminbi-2013-2> , accessed in 02/22/16.

2. The exchange rate policies before August 2015

On January 1994, the RMB was 'pegged' to the U.S. dollar, i.e. the CNY rate was fixed, with the exception of some initial oscillations due to PBOC's interventions.

On July 2005, the exchange rate system changed to 'managed float'. The CNY rate was allowed to float daily within a narrow band around a central parity. The intraday band was gradually widened. By mid-2015, it was two percent around the central parity (IMF Country Report No. 15/234, p. 44).

In regarding the central parity determination, which is a fundamental feature in this exchange rate system:

"(...) Officially, the parity is determined by the weighted average of preopening market quotes, without any limit on day-to-day movements. Thus, in theory the parity could move significantly from day-to-day, while in reality it moves very little and much less than suggested by market conditions." (IMF Country Report No. 15/234, p. 44).⁶

Nevertheless,

"(...) Since the reform in July 2005, the intraday band has been gradually widened and the regime has facilitated considerable adjustment (the renminbi appreciated about 30 percent against the U.S. dollar since 2005). (...)" (IMF Country Report No. 15/234, p. 44).

Figure 17: Nominal Yuan/Dollar Rate 1994-2016



(Source: FRED, <https://research.stlouisfed.org/fred2/series/DEXCHUS>, accessed on 02/25/16)

⁶ The PBOC announced that the central parity is determined according to a basket of currencies, but it did not provide the weights assigned to the currencies in this basket. The central parity determination remained unknown until the PBOC announced the weights on December 2015.

During the period 1994-2005, there were frequent claims that China held its currency undervalued in order to gain advantage in foreign trade.

Figure 17 contains the monthly (end of period), nominal Yuan/Dollar exchange rate, from 1994 till February 19, 2016. It shows that the RMB initially has strengthened against the dollar in nominal terms. Then, from June 1995 until June 2005, the nominal exchange rate remained almost flat, which probably helped China to consolidate its exports-driven growth model, since the nominal exchange rate was not reflecting, among other factors, the expressive trade surpluses that were materializing in the same period.

From 2005 until August 2015, with a halt in 2008-2010 due to the financial crisis, China allowed the appreciation of its currency (Figure 17), in order to deal with growing domestic imbalances, rising inflation among them, in consequence of the accelerated growth.

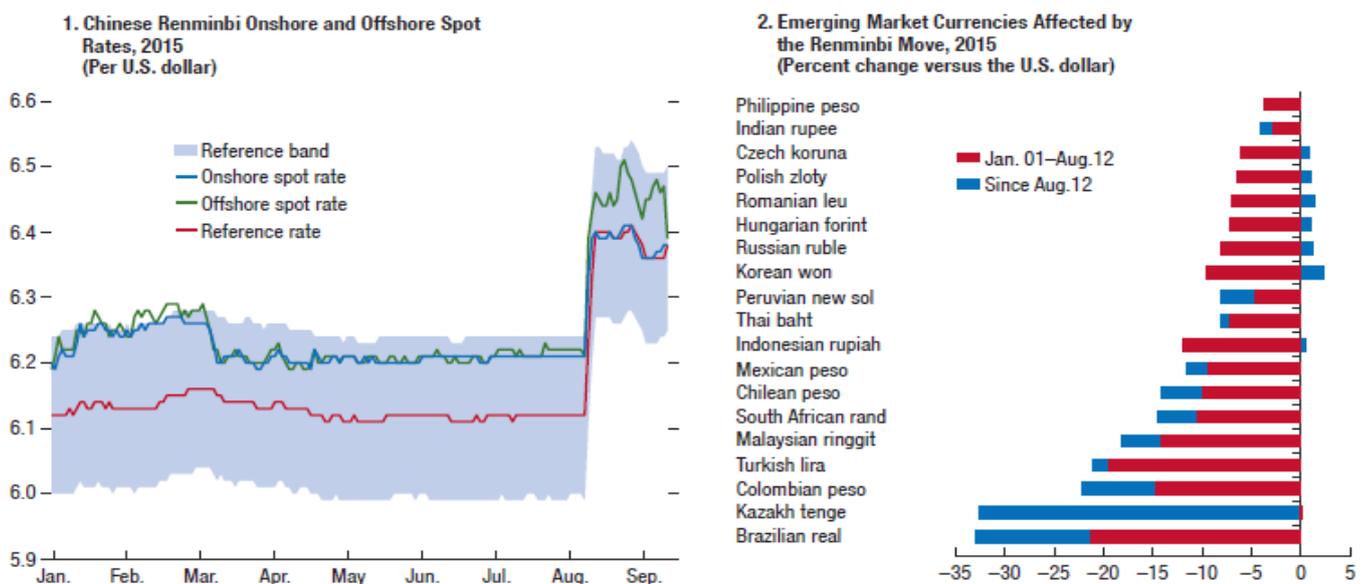
3. Recent developments

Last year, on August 11, the PBOC announced a new mechanism for determining the central parity, i.e. the daily reference rate around it the CNY floats within a band. The two percent band remained unchanged.

According to the IMF, the intervention further increased the flexibility of the exchange rate mechanism. However, “(...) the timing of the decision came as a surprise to markets and introduced greater exchange rate uncertainty, with the CNY depreciating by 3 percent versus the U.S. dollar in the first three days, similar to moves in offshore renminbi trading. The exchange rate subsequently stabilized, including with the help of periodic official intervention and enhanced communication, but exchange rate expectations remain fragile, and weakness has spread through commodity and emerging economy currency markets (...)” (IMF, 2015d, p. 11).

Figure 18 shows the magnitude of the RMB depreciation and the impacts on currencies of EM economies.

Figure 18: Chinese Exchange Rate Movements and Effect on Emerging Market Currencies



Sources: Bloomberg, L.P.; and IMF staff calculations.

Sources: Bloomberg, L.P.; and IMF staff calculations.

(Source: IMF, 2015d, p.16)

In concerning the growing relevance of financial linkages between China and other EM economies:

“The main spillover channels from China to the rest of the world remain economic growth and trade, but confidence channels and direct financial linkages have also become stronger since 2010. Concerns about weaker Chinese import demand have already contributed to lower global commodity prices. In turn, currencies have weakened in emerging market economies with strong trade ties to China and high commodity dependence. Intensified capital flight to perceived safer assets would further weaken exchange rates and increase financial market volatility in emerging markets, with adverse effects for sovereigns and companies with large foreign indebtedness. Direct financial spillovers include a possibly adverse impact on the asset quality of at least \$800 billion of cross-border bank exposures; repricing in Asia’s external dollar bond markets, which are increasingly dominated by Chinese issuers; and capital flows from China, including through the Shanghai–Hong Kong SAR stock connect program.” (IMF, 2015d, p. 11).

4. Views about the current exchange rate policy and its prospects

Following the PBOC’s interventions since August 2015, the media is wondering about the course of China’s exchange rate policy, in light of the Chinese economic slowdown, the prospects of tightening U.S. monetary policy and recent capital outflows from China.

In what follows, we present in a chronologic order a clip of five articles published lately in the media.

a. 12/13/2015, Financial Times, “China edges towards a new exchange rate policy”⁷

“(…) Throughout last week, the renminbi weakened against the dollar, especially in the offshore currency market that is most affected by flights of capital from China. The PBOC’s foreign exchange reserves were reported to have fallen by \$87 billion in November, much more than expected, suggesting that an exodus of capital was occurring ahead of the likely Fed tightening on 16 December.

Many investors were asking whether China’s resolve to maintain a stable exchange rate was weakening, now that the renminbi has achieved its long term goal of membership of the SDR. Fears of devaluation were mounting fast.

The PBOC responded to these concerns (...). It hinted that it is still committed to a stable exchange rate in line with ‘equilibrium’, but suggested that this would now be better viewed against a basket of currencies, and not just against the dollar.”

“(…) The initial response of western markets on Friday was one of skepticism, with some analysts describing the change as another covert devaluation versus the dollar. (...)”

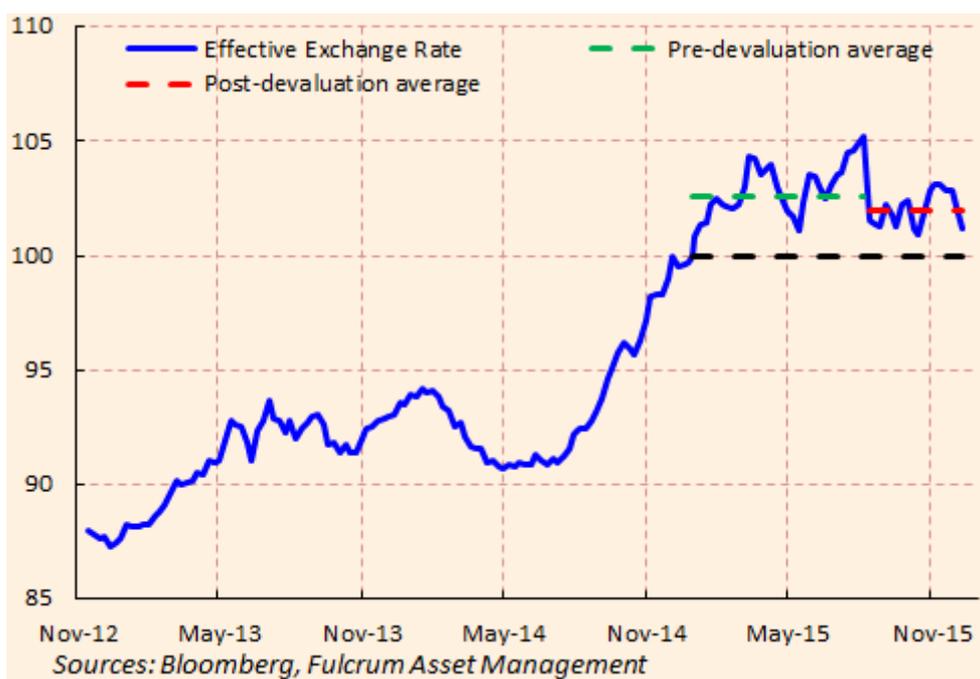
“But when the implications of this new approach sink in, it will come to be seen as sensible step which reduces risks in the global economy in 2016.

In retrospect, it seems that China has been following a new currency regime throughout most of 2015. The PBOC has now published the weights of its new currency basket, so we can track the performance of the central bank’s preferred definition of its new effective exchange rate very accurately. The graph shows how this rate has behaved this year.”:⁸

⁷ <http://blogs.ft.com/gavyndavies/2015/12/13/china-edges-towards-a-new-exchange-rate-policy/> , accessed in 02/25/16.

⁸ See the terms *SDR* and *effective exchange rate* in the lexicon. We understand the effective exchange rate that appears in Figure 19 as the central parity rate, around it the CNY rate will float.

Figure 19: China Official PBOC Effective Exchange Rate
(31-Dec-2014 = 100)



“Basically we see a broadly stable effective rate fluctuating around a rate of about 102.5 (using the authorities’ suggested base of 30 December 2014=100). The margins around this rate seem to be about 2.5 per cent either way. When the effective rate threatened to break above this range in August, China devalued the renminbi against the dollar in order to keep the effective rate stable.

This is a good example of the new regime in action: China’s exchange rate will no longer be dragged upwards against all other currencies by a rising dollar. But it is still likely to broadly stable against the world as a whole.

This shift away from a bilateral relationship with the US is a logical step now that the renminbi is inside the SDR basket, especially since the dollar is widely expected to rise against that basket as the Fed tightens. It cannot by any stretch of the imagination be seen as a competitive devaluation by China. There is no good reason why monetary conditions in China should be forced to follow the Fed’s tightening, and any attempt to do this would have been condemned to catastrophic failure.

What matters now is whether the PBOC can make its new strategy stick. In the short term, the willingness to allow greater strengthening in the dollar might encourage more capital outflows from China to the US, in which case the recent tendency for the renminbi’s effective rate to fall might continue.

But the PBOC has now hinted that a large drop in the effective rate is not intended. The exact bands (if any) remain unknown, which is an intelligent move by the PBOC to avoid giving the markets a specific target to aim at. However, a sustained move below 100 would not be consistent with what they said on Friday.

This seems unlikely. China almost certainly has the liquid foreign exchange reserves available to maintain a stable effective rate for an indefinite period if it chooses to do so. Now that it has somewhat clarified what it is trying to do, the markets should gain confidence that a “devaluation” of the renminbi against a rising dollar is not all that worrying after all.

In the absence of a much harder landing for the Chinese economy – something that is not suggested by the latest activity data – the PBOC should probably be expected to stick with its new guidance until further notice.

If that proves right, what are the consequences for the other major central banks? For the US, it means that the dollar can now float upwards against the renminbi (and therefore against many other emerging market currencies as well), whereas in the past it tended to drag these currencies up along with

it. This is likely to mean that US financial conditions will tighten more significantly for any given rise in US interest rates than would have occurred under the previous dollar-based approach.

Absent a currency convulsion in the next couple of days, it seems improbable that this will deter the Fed from announcing lift off next Wednesday, but it could induce them to make an even more dovish announcement about the 'gradual' pace of rate rises planned for 2016. They may now be able to deliver the monetary tightening they desire with a smaller rise in domestic interest rates.

What about the ECB? Under the old Chinese regime, a rise in the dollar would have lifted the renminbi and other emerging currencies along with it, increasing the size of the decline in the euro's effective rate. Now, the dollar will be more free to move on its own, so the euro will tend to be stronger than it would have been under the old regime."

"Unlike the Fed, the ECB is still trying to ease monetary conditions, and it clearly believes that a lower euro is needed to attain their inflation target. After China's latest pronouncements, that looks harder to achieve."

b. 01/15/2016, The Wall Street Journal, "Confused by China's Yuan? It's Intentional"

Figure 20: Mixing Signals

China's central bank is trying to keep the markets guessing about its intentions for the direction of the yuan.

Yuan/U.S. dollar spot rate



Source: Thomson Reuters

Five central-bank moves

- 1** Aug. 11: Devalues yuan by about 2%.
- 2** Aug. 12: Intervenes to prop up yuan.
- 3** Dec. 11: Signals intent to depeg yuan from dollar.
- 4** Jan. 4: Guides yuan sharply weaker.
- 5** Jan. 12: Intervenes in Hong Kong market to bolster yuan.

Foreign-exchange reserves



THE WALL STREET JOURNAL.

"If China's exchange-rate policy has seemed enigmatic in recent days, that is according to plan, people close to the Chinese central bank say.

Since late last year, the People's Bank of China has purposely tried to make it harder for investors to figure out its intentions on the yuan, changing the way it sets the currency's price and interspersing periods of depreciation with surprise bouts of strengthening through market guidance or intervention, the people say.

The goal, these people say, is to allow the yuan to depreciate modestly this year, while encouraging it to move up and down along the way, like a normal currency. That touch of volatility could make betting against the yuan more expensive, and tamp down the flow of money heading out of the country—a problem for China in recent months."

“(…) Outside the country, where the PBOC’s controls don’t extend, the bank resorts to buying and selling the yuan as well as controlling cross-border money flows to influence its price, an expensive proposition.

During the fall, the central bank burned through Chinese currency reserves to boost the yuan’s value, which had fallen further than the bank wanted following a mid-August devaluation. China’s foreign-exchange reserves slumped a record \$108 billion to \$3.3 trillion as of the end of December from the previous month.

The unpredictability also risks affirming an impression that the central bank and the country’s leaders don’t actually have a good handle on China’s currency and its economy. The central bank announced a new practice for setting the yuan’s value last August only to abandon it earlier this month. Such mixed signaling is unlikely to scare off speculators for long.

‘Speculation will invariably come back if investors think other investors think the yuan has further to fall,’ (…).”

“(…) For many years, prevailing investor sentiment was that the yuan had nowhere to go but up, as the Chinese economy hummed along.

The central bank bought dollars and other foreign currency to keep the yuan from appreciating too much, resulting in a doubling of China’s foreign-exchange reserves in just over five years, from less than \$2 trillion in early 2009 to nearly \$4 trillion in mid-2014.

Now, investors are betting the yuan will fall, helping spur capital outflows and raising the specter of a credit crunch inside the country.

Critics point out that much of this is Beijing’s fault. For years, the central bank hitched the yuan’s value to the dollar and later used the greenback as a reference point when it set the price of the currency each day, making its direction easy to predict.

The best way to encourage true market ups and downs is to let the yuan trade freely, they say.

Although the PBOC has shown no inclination to do that, in recent weeks, it has signaled its intention to decouple the yuan from the dollar and instead manage it against a basket of 13 currencies including the dollar, the euro and the yen.

So far, the yuan has remained stable relative to the currency group, even though it has weakened by about 3% against the dollar since the beginning of December.”

c. 01/16/2016, The Economist, “Fight or flight - China’s leaders face a menu of unappealing exchange-rate options”⁹

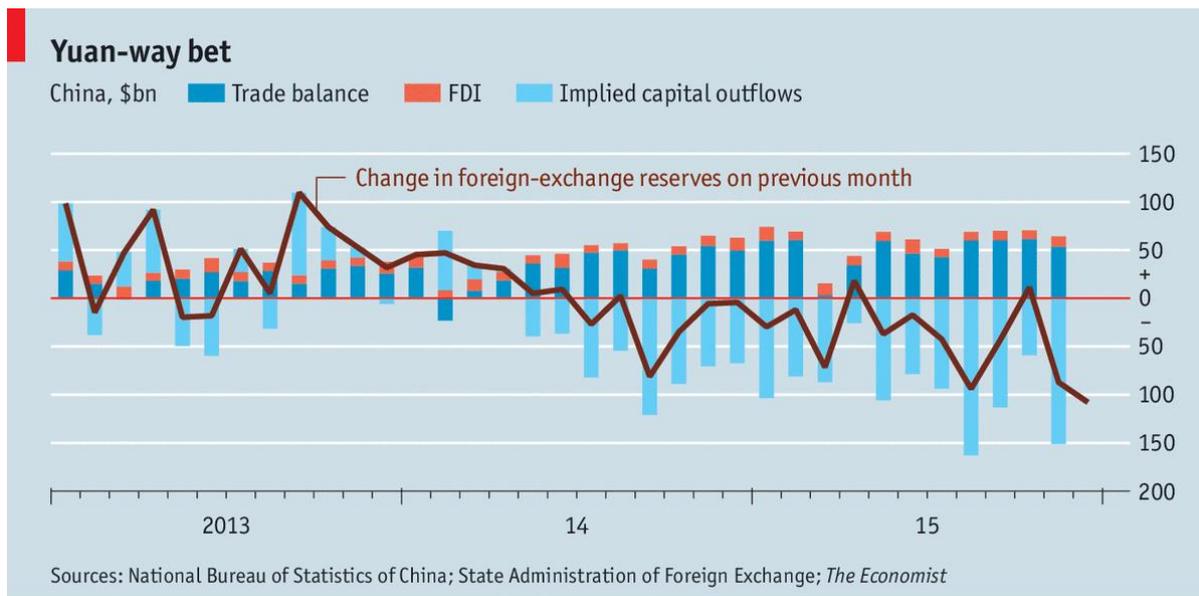
“Some see a resemblance in China’s predicament to the Asian financial crisis of the late 1990s. Then, fast-growing countries like Indonesia, South Korea and Thailand faced outflows of capital as investor sentiment flipped from bullish to bearish. Governments were forced to abandon currency pegs as their foreign-exchange reserves dwindled. Massive depreciations led to financial havoc, as asset prices tumbled and these countries’ enormous debts ballooned in dollar terms. Painful recessions ensued.

The lessons of the Asian crisis were not lost on China’s leaders, however. During its great boom, in the 2000s, China maintained tight capital controls, permitting foreign direct investment while eschewing “hot money”. The People’s Bank of China (PBOC) intervened heavily in foreign-exchange markets to keep the yuan cheap, building up \$4 trillion in reserves in the process. Where the crisis countries of the 1990s ran persistent trade deficits, China kept its current account in surplus; thus adding to, rather than draining from, its foreign-exchange reserves.”¹⁰

⁹ <http://www.economist.com/news/finance-and-economics/21688440-chinas-leaders-face-menu-unappealing-exchange-rate-options-fight-or-flight>, accessed in 02/25/16.

¹⁰ Notice that The Economist’s claim:

Figure 21: China - Change in foreign-exchange reserves



Economist.com

“Despite these prophylactics China now faces its own financial crunch. Its reserves are down by almost \$700 billion from their peak, thanks to capital flight and sinking asset values. (...) signs of a bigger leak emerged in the latter half of 2015. In December alone reserves fell by more than \$100 billion. Capital slipped abroad at an annualised pace of \$1 trillion in the second half of 2015. In the third quarter, China’s outward foreign-direct investment rose from \$29 billion to \$32 billion while inward investment fell sharply, from \$71 billion to \$39 billion; at \$7 billion, the net flow of inward investment was the lowest since 2000.

(...) Chinese citizens can move a maximum of \$50,000 abroad each year. If just 5% of the population used its quota, China’s reserves would evaporate. The authorities are desperate to prevent such an outcome, and the severe tightening of domestic credit conditions it would entail, but there is no painless way to do so.

Many economists reckon China will allow the yuan to fall. After all, the currency has appreciated by 20% against a broad range of currencies since 2012, thanks to rising wages and a peg to the strengthening dollar. Yet a sinking yuan poses threats. Roughly \$1 trillion of China’s accumulated debts are denominated in dollars. That is small beer next to \$28 trillion in total Chinese debt. But because Chinese firms are so highly leveraged, even a small rise in the cost of servicing dollar-denominated debts could force some into asset sales or bankruptcy. That, in turn, would encourage more capital outflows, depressing the yuan’s value still further.

The economy could expect only a modest boost to exports for its trouble. Since much of the material that goes into Chinese exports is itself imported, devaluation does not boost exports that much. It also squeezes the purchasing power of Chinese consumers and thus slows the rebalancing of its economy from investment to consumption, while irking America and encouraging competitive devaluations elsewhere.

Alternatively, China could hold the yuan’s value steady. (...).

“Stability poses its own problems, however. If China resists depreciation and capital outflows continue, the erosion of reserves could puncture the PBOC’s air of invulnerability, leading to faster capital

(...) During its great boom, in the 2000s, (...). The People’s Bank of China (PBOC) intervened heavily in foreign-exchange markets to keep the yuan cheap, building up \$4 trillion in reserves in the process.”, stands in contrast to our view in the text that, since 2005, China let the yuan appreciate, which did not prevent China from accumulating superavits in its trade balance and, therefore, reserves. The yuan appreciation helped China to mitigate inflation.

leakage. A commitment to a strong yuan could also constrain China's monetary policy. Cuts to interest rates tend to diminish a currency's value. Any attempt to maintain it under such circumstances hastens the depletion of reserves.

Why not strengthen capital controls, in that case? In 1998 Malaysia imposed controls on fleeing investors and outperformed some other crisis-hit economies, such as Indonesia. The government is cracking down on the underground financiers in Macau and banks in Hong Kong that help sneak Chinese cash past the controls. If ordinary citizens began moving savings abroad in greater numbers, China could reduce the limit on foreign transfers. Yet backtracking on planned reforms would be a huge embarrassment for China's leaders, who have laboured long and hard to raise the yuan's status internationally. It would also deter foreign investors, worsening the short-run foreign-exchange picture and long-run growth prospects.”

“Ample reserves, capital controls, a trade surplus and a determinedly interventionist state mean that China is a long way from a full-fledged crisis. Neither is all the apparent capital flight as worrying as it might appear: purchases of foreign securities by Chinese corporates may look like a stampede for the exits, but can serve to hedge firms with foreign-currency debts against depreciation. But there is good reason for nervousness, in China and elsewhere. All the countries afflicted by the Asian crisis combined accounted for a much smaller share of global output in 1998 than China does now. And China seems not to have absorbed the most important lesson of that crisis: that confidence matters.”

d. 01/22/2016, Nikkei Asian Review, “China's exchange rate policy: What is really behind the 'weak yuan'?”

“Market players are paying close attention to the yuan's value against the dollar. (...).

(...) According to the BIS, the yuan's effective exchange rate surged by as much as 16 percentage points during a one-year period through July 2015. But that appreciation stopped in August of last year, when China broke the link to the dollar. After that, the yuan's effective exchange rate almost unchanged until the end of 2015.

This contrasts sharply with the change in the yuan-dollar rate seen since August. ‘It is impossible to understand China's currency policy intentions just by looking at the yuan-dollar rate,’ said Yosuke Tsuyuguchi, senior advisory officer at Japan's Shinkin Central Bank and an expert on China's financial climate. ‘The People's Bank of China is seeking to stabilize the yuan's exchange rate, using the effective exchange rate as an indicator,’ he said.”¹¹

e. 02/09/2016, Project Syndicate, Barry Eichengreen, “China's Exchange-Rate Trap”

“(...) For months now, China's exchange-rate policy has been roiling global financial markets. More precisely, *confusion* about that policy has been roiling the markets. Chinese officials have done a poor job communicating their intentions, encouraging the belief that they don't know what they're doing.”

“(...) The fact is that China's government no longer has any good options. No question, the country would be better off with a more flexible exchange rate that eliminated one-way bets for speculators and acted as an economic shock absorber. But the literature on “exit strategies” – on how to replace a currency peg with a more flexible exchange rate – makes clear that the moment when China could have navigated this transition smoothly has now passed.”

“Countries can exit a pegged rate smoothly only when there is confidence in the economy, encouraging the belief that the more flexible exchange rate can appreciate as well as weaken. This may have been true of China once; it is no longer true today.”

“What, then, is China's least bad option? The authorities could continue with their current strategy of pegging the renminbi to a basket of foreign currencies, and push ahead with their agenda of

¹¹ This article reinforces the view presented in the article of Financial Times.

restructuring and rebalancing the economy. But convincing skeptical observers that they are committed to this strategy will take time, given recent missteps. Meanwhile, investors will bet against them.

They already are. Capital outflows have been running at \$100 billion a month. Simple arithmetic suggests that with \$3 trillion of reserves, the authorities can hold out for at least a couple of years. But capital flight tends to rise dramatically as the end draws near. A two-year window is an illusion.

Alternatively, the renminbi could be allowed to fluctuate more freely. The People's Bank of China can permit it to depreciate against the reference basket by, say, 1% a month, in order to enhance the competitiveness of Chinese exports and address concerns that the currency is overvalued.

But, given weak global demand, this kind of modest depreciation won't do much to boost exports and support economic growth. Moreover, with the renminbi losing 1% of its value each month, capital flight would accelerate further.

A third option is a one-time devaluation of, say, 25%. This would enhance export competitiveness at a stroke. Depreciate the currency to the point where it is significantly undervalued, the argument goes, and investors will expect it to recover. Capital will then flow in, not out.

This assumes, of course, that everyone buys into the idea that one devaluation doesn't augur another. It assumes that investors would be unperturbed by the authorities' abandonment of their prior vow to shun a mega-devaluation. It ignores the fact that Chinese enterprises, already in dire straits, have as much as \$1 trillion of foreign-currency debt that would become significantly more difficult to service. And it minimizes the devastating economic impact of a mega-devaluation on countries with which China competes.

By process of elimination, the only option that remains is tightening capital controls. Strict controls can prevent residents and foreigners from selling renminbi for foreign currency on onshore markets and transferring the proceeds abroad.

Protected by this financial Great Wall, the authorities could let the exchange rate fluctuate more freely and allow it to depreciate gradually without provoking capital flight. They would gain the time needed to implement confidence-building reforms. They could curtail the provision of liquidity to loss-making enterprises, forcing firms to eliminate excess capacity. They could restructure problematic debts. They could recapitalize banks that suffered inadvertent balance-sheets damage as a result of these reforms. They could repair their damaged credibility.

A few observers, like Bank of Japan head Haruhiko Kuroda, have suggested that China might consider tightening controls. But most economists are reluctant to contemplate this option. Capital controls would undermine China's efforts to internationalize the renminbi and would embarrass the International Monetary Fund, which recently added the currency to the basket of four major currencies underpinning its unit of account, the SDR.

The most powerful objection, though, is that reimposing controls would remove the pressure to reform. Freed of pressure from international capital markets, the Chinese authorities would defer to state-owned enterprises and local officials who prefer continued easy provision of liquidity and would rather see the banks simply roll over their loans.

This risk of backsliding is real. If it materializes, the time bought by capital controls will be squandered. The problem would then metastasize, at some point, from an exchange-rate crisis to a growth collapse. China's best hope – and the world's – is that the Chinese authorities understand that a crisis is a terrible thing to waste.”

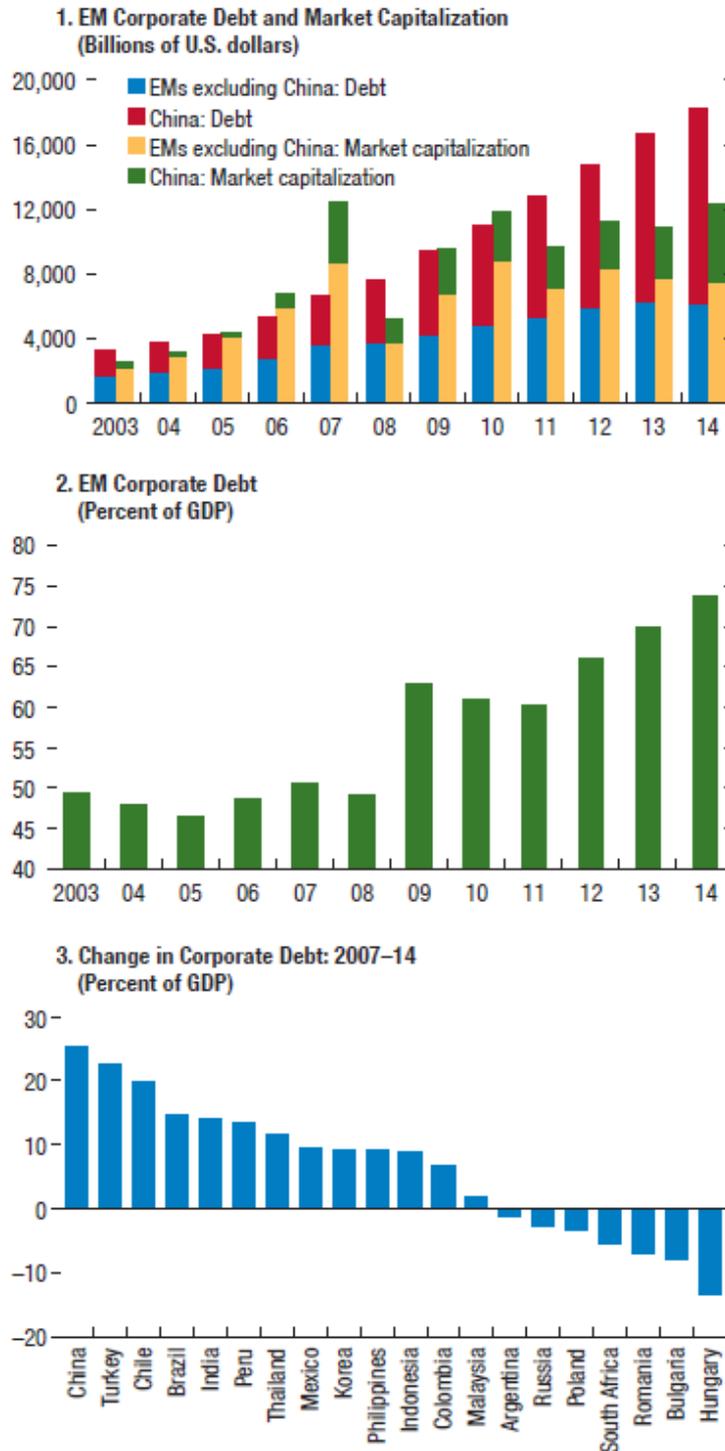
Corporate Leverage in Emerging Markets

Corporate leverage grew markedly in recent years, especially in the post-crisis period. In what follows, there is an account of this evolution, its main determinants and some of the risks it entails.

- **The evolution**

“(…) The corporate debt of nonfinancial firms across major emerging market economies increased from about \$4 trillion in 2004 to well over \$18 trillion in 2014 (…)” (IMF, 2015d, p. 84). (Figure 22, panels 1-2).

Figure 22: Emerging Market Economies - Evolving Capital Structure



Sources: Ayala, Nedeljkovic, and Saborowski 2015; Bank for International Settlements; Dealogic; IMF, International Financial Statistics database; national authorities; and IMF staff calculations.

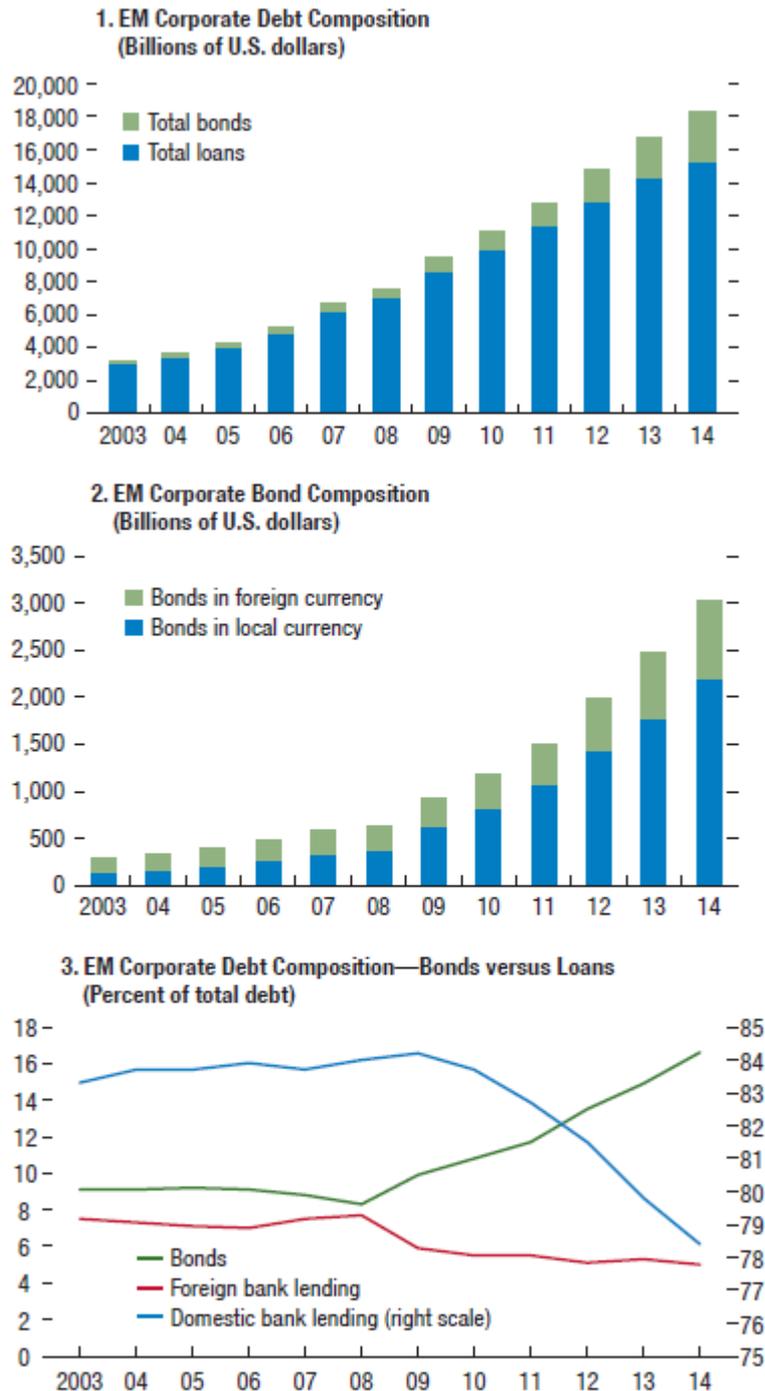
Note: EM = emerging market economy; figure depicts major EMs. Debt includes bank credit and bond financing. Credit by nonbanks is excluded, possibly leading to a significant underestimation of corporate debt in countries with large nonbanking sectors such as China. At the same time, in China, the bulk of fiscal borrowing occurs off budget through local government financing vehicles and is recorded as private credit, although most of it is fiscal (see Arslanalp and others, forthcoming).

(Source: IMF, 2015d, p. 84)

In regarding the composition of corporate debt:

“(…) Although loans are still the largest component of that corporate debt, the share of bonds has been growing rapidly, from 9 percent of total debt in 2004 to 17 percent of total debt in 2014, with most of the increase materializing after 2008, including via offshore financial centers (…)” (IMF, 2015d, p. 84). (Figure 23, panels 1 and 3).

Figure 23: Emerging Market Economies - Changing Composition of Corporate Debt



Sources: Ayala, Nedeljkovic, and Saborowski 2015; Bank for International Settlements; Dealogic; IMF, International Financial Statistics database; national authorities; and IMF staff calculations.

Note: EM = emerging market economy; figure depicts major EMs.

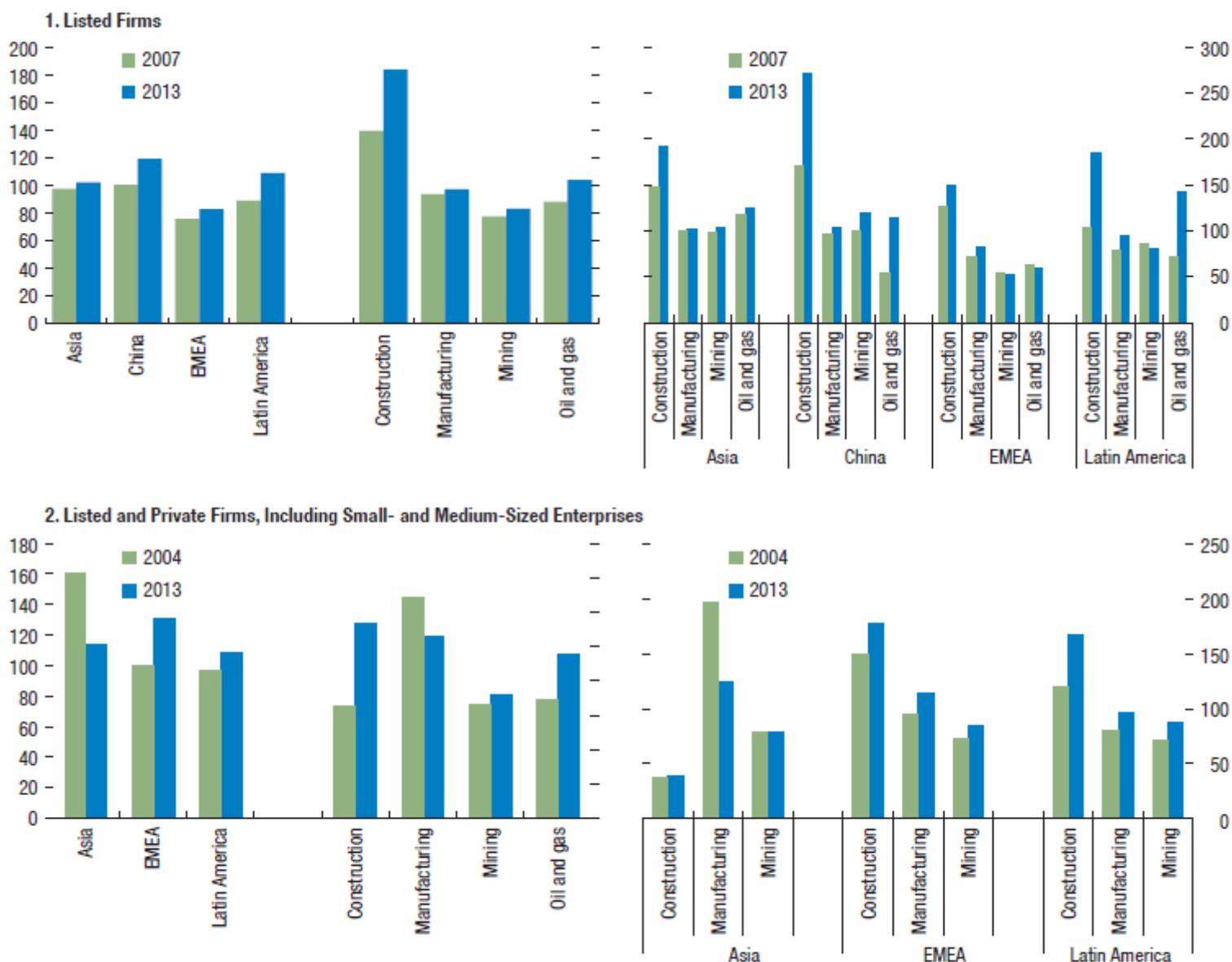
(Source: IMF, 2015d, p. 86)

The share of bonds issued in foreign currency grew especially after 2008 (Figure 23, panel 2).

Turning to the evolution of corporate debt by selected regions and sectors:

“(…) For publicly listed firms, leverage has risen in emerging Asia; in the emerging Europe, Middle East, and Africa (EMEA) region; in Latin America; and across key sectors (…)” (IMF, 2015d, p. 89). (Figure 24, panel 1). (See *listed company* in the lexicon).

Figure 24: Emerging Market Economies - Corporate Leverage by Selected Regions and Sectors
(Percent; ratio of total liabilities to total equity)



Sources: Orbis; Thomson Reuters Worldscope; and IMF staff calculations.

Note: Total liabilities refer to total (nonequity) liabilities. Mining includes oil and gas. Panel 1 begins in 2007 to account for the relative scarcity of Chinese firms in the beginning of the sample period; a balanced sample is used to highlight trends across larger firms. The relative scarcity of data, particularly in the first few years of the sample, is the main reason Chinese patterns are not shown individually in the bottom panels. The regional breakdown of the oil and gas subsector is also excluded for similar reasons. EMEA = Europe, Middle East, and Africa.

(Source: IMF, 2015d, p. 90)

“The striking leverage increase in the construction sector is most notable in China and in Latin America. (...)” (IMF, 2015d, p. 89). (Figure 24, panel 1).

Besides the construction sector,

“Leverage has grown in mining, and even more so in the oil and gas subsector. These sectors are particularly sensitive to changes in global growth and commodity price fluctuations. In particular, oil price declines can cut into the profitability of energy firms and strain their debt-repayment capacity (...)” (IMF, 2015d, p. 89). (Figure 24, panel 1).

“The patterns shift somewhat in relation to small- and medium-sized enterprises (SMEs). For instance, SME leverage seems to have declined in emerging Asia and in the manufacturing sector during the past decade. One reason for such contrasts is the differences in country composition across the two data sets. A key similarity across both data sets is the increase in construction-sector leverage, particularly across EMEA and Latin America.”. (IMF, 2015d, p. 89). (Figure 24, panel 2).

- **Main determinants**

“If rising leverage and issuance have recently been predominantly influenced by external factors, then firms are rendered more vulnerable to a tightening of global financial conditions. Similarly, a decline in the role of firm- and country-level factors in recent years would be consistent with the view that markets may have been underestimating risks. (...)” (IMF, 2015d, p. 86).

“(...) Global factors appear to have become relatively more important determinants in the postcrisis period. In some cases, evidence of a structural break appears in these relationships, with a reduced role for firm- and country-level factors in the postcrisis period.” (IMF, 2015d, p. 87).

“Accommodative global monetary conditions can encourage leverage growth in emerging markets through several channels. (...) First, emerging market central banks set lower policy rates than they would otherwise in response to the prevailing low interest rates in advanced economies to alleviate currency appreciation pressures. Second, large-scale bond purchases in advanced economies reduce bond yields not only in their own bond markets, but also to varying degrees in emerging market bond markets through portfolio balancing effects. Likewise, accommodative monetary policies in advanced economies are typically accompanied by greater capital flows into emerging markets, seeking higher returns. Third, changes in policy rates in advanced economies are promptly reflected in the debt-servicing burden on outstanding emerging market foreign currency-denominated debt with variable rates. (...)” (IMF, 2015d, p. 85).

A regression analysis accounted for the contribution of domestic and foreign conditions to the higher leverage level of EM non-financial firms in the post-crisis.

The domestic determinants are firm characteristics and macroeconomic conditions at home. In the baseline regression, foreign conditions were mainly captured through the U.S. shadow rate¹², global oil prices and time dummies for unobservable global factors. (IMF, 2015d, p. 91-92).

The econometric analysis shows that:

“(...) firm- and country-specific characteristics are key determinants of emerging market corporate leverage growth: these terms have the expected signs and are statistically significant (...). In particular, profitability, tangibility, and the measure of macro-economic conditions are positively correlated with leverage growth. These positive relationships would imply that leverage should have declined given the deterioration in these determinants in the postcrisis period (...). However, the fact that the opposite

¹² “(...) Shadow rates are indicators of the monetary policy stance and can be particularly useful once the policy rate has reached the zero lower bound (ZLB). A shadow rate is essentially equal to the policy interest rate when the policy rate is greater than zero, but it can take on negative values when the policy rate is at the ZLB. (...). Shadow rates are estimated using shadow rate term structure models, which take the ZLB into account, as originally proposed by Black (1995).” (IMF, 2015d, p. 88).

See: http://www.jstor.org/stable/2329320?seq=1#page_scan_tab_contents

happened suggests that global actors may be behind the rise in emerging market corporate leverage.” (IMF, 2015d, p. 91).

The table below presents indicators that summarize the deterioration of domestic conditions in the post-crisis period.

Table 1: Worsening Emerging Market Firm-Level and Macroeconomic Fundamentals

	Precrisis (2004–07)	Postcrisis (2010–13)
Firm-Level Fundamentals		
Profitability		
Return on Assets	3.6	3.3
Liquidity		
Quick Ratio	0.9	1.0
Solvency		
Interest Coverage Ratio	3.4	2.8
Asset Quality		
Tangible Asset Ratio	30.5	22.9
Macroeconomic Fundamentals		
Real GDP Growth	6.2	3.9
CPI Inflation	4.8	3.9
Short-Term Interest Rate	4.2	3.6
Current Account Balance ¹	0.6	-0.9
External Debt ¹	35.9	35.6
Fiscal Balance ¹	-0.9	-2.8
Public Debt ¹	38.1	39.2
ICRG (macroeconomic fundamentals summary) Index ²	38.7	38.2

Source: IMF staff.

Note: Historical averages of median firm-level fundamentals reported for all countries in the sample. Interest coverage ratio is EBITDA (earnings before interest, taxes, depreciation, and amortization) to interest expenses; the quick ratio is cash, cash equivalents, short-term investments, and accounts receivables to current liabilities; the tangible asset ratio is the ratio of fixed assets (which include property, plant, and equipment) to total assets.

¹Percent of GDP.

²The average of the International Country Risk Guide (ICRG) Economic and Financial Risk Ratings, which aim to provide an overall assessment of a country's economic situation and ability to finance its debt obligations, respectively. The ICRG index is fairly stable, indicating that small changes can be meaningful: the decline in the index between the two periods is about one-half standard deviation.

(Source: IMF, 2015d, p. 91)

In regarding the foreign determinants:

“(…) The time dummies indeed suggest that global factors are becoming more important as drivers of emerging market corporate leverage growth in the postcrisis period.

When specific global factors are considered, the inverse of the U.S. shadow rate and, to a lesser extent, global oil prices seem to be particularly associated with leverage growth. This result emerges when including various global factors simultaneously in the regression.¹² Further econometric analysis points to a greater role for global factors, in particular the shadow rate, in the postcrisis rise of leverage. Their influence during the period was examined through two complementary regression models. The first explicitly accounts for possible structural breaks, and suggests that the U.S. shadow rate became a more significant postcrisis determinant of emerging market leverage growth.¹³ The second model contrasts the precrisis (2004–07) and postcrisis (2010–13) periods, and finds a significant positive postcrisis correlation between the shadow rate and no significant role for country-specific factors.

The role of easier global financial conditions is corroborated through evidence on the relaxation of financing constraints. The relevance of relaxed financing constraints for leverage can be assessed by

focusing on SMEs and weaker firms, which typically have more limited access to finance. Similarly, a closer look can be taken at sectors that are intrinsically more dependent on external finance (...). Evidence indicates that leverage for all these types of firms is more responsive than for other firms to prevailing global monetary conditions. Moreover, in countries that have more open capital accounts and that received larger capital inflows, firms' leverage growth tends to be more responsive to global financial conditions." (IMF, 2015d, p. 92).

- **Risks**

- **Credit, interest rate and currency risks**

"A key risk for the emerging market corporate sector is a reversal of postcrisis accommodative global financial conditions. (...) Furthermore, interest rate risk can be aggravated by rollover and currency risks. Although bond finance tends to have longer maturities than bank finance, it exposes firms more to volatile financial market conditions (...). In addition, local currency depreciations associated with rising policy rates in the advanced economies would make it increasingly difficult for emerging market firms to service their foreign currency-denominated debts if they are not hedged adequately." (IMF, 2015d, p. 85).

- **Foreign currency exposure**

Apparently,

"(...) higher leverage has been associated with, on average, rising foreign exchange exposures. Moreover, leverage has grown most in the cyclical construction sector, but also in the oil and gas subsector. (...)" (IMF, 2015d, p. 87).

However,

"(...) if firms issuing foreign currency debt have been reducing their net foreign exchange exposure through hedging or other means, simply focusing on the volume of foreign currency bond issuance would tend to over-state risks related to local depreciations." (IMF, 2015d, p. 86).

In the aggregate,

"(...) No conclusive evidence has been found that greater foreign currency-denominated debt has increased overall net foreign exchange exposures." (IMF, 2015d, p. 89).

About the estimation:

"Net foreign exchange exposures are indirectly estimated for listed firms using the sensitivity of their stock returns to changes in trade-weighted exchange rates (...)" (IMF, 2015d, p. 90).

The estimated foreign exchange exposure points to sectoral differences:

"(...) Firms in nontradable sectors, such as construction, tend to have positive foreign exchange exposures, reflecting their need for imports. Firms in tradable sectors, such as mining, tend to have negative foreign exchange exposures, because exporting firms benefit from a depreciation of the local currency. (...) The evolution of foreign exchange exposures after the global financial crisis differs across regions. Outside of Asia, the fraction of firms with positive foreign exchange exposures increased across all sectors after the crisis. (...)" (IMF, 2015d, p. 90).

"(...) the construction sector, where leverage grew rapidly, is among the sectors perceived by stock markets in emerging market economies as having strongly increased their exposure to exchange rate fluctuations in recent years (...)" (IMF, 2015d, p. 91).

- **Solvency**

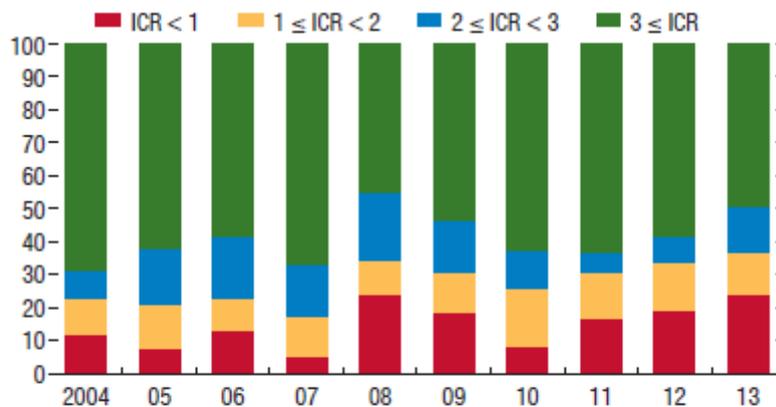
"(...) Despite weaker balance sheets, emerging market firms have managed to issue bonds at better terms (lower yields, longer maturities) with many issuers taking advantage of favorable financial conditions to refinance their debt. (...)" (IMF, 2015d, p. 89).

"(...) Even though liquidity has edged up at the firm level since the crisis, profitability, solvency, and a measure of asset quality have deteriorated." (IMF, 2015d, p. 90).

Figure 25 provides the distribution of listed firms according to a solvency indicator, the *interest coverage ratio (ICR)*.

“(…) An ICR lower than 2 often means that a firm is in arrears on its interest payments. Note that the share of liabilities held by firms with ICRs lower than 2 has grown during the past decade (…)” (IMF, 2015d, p. 91).

Figure 25: EM Listed Companies - Corporate Liabilities and Solvency
(Percent; solvency measured using the ICR)



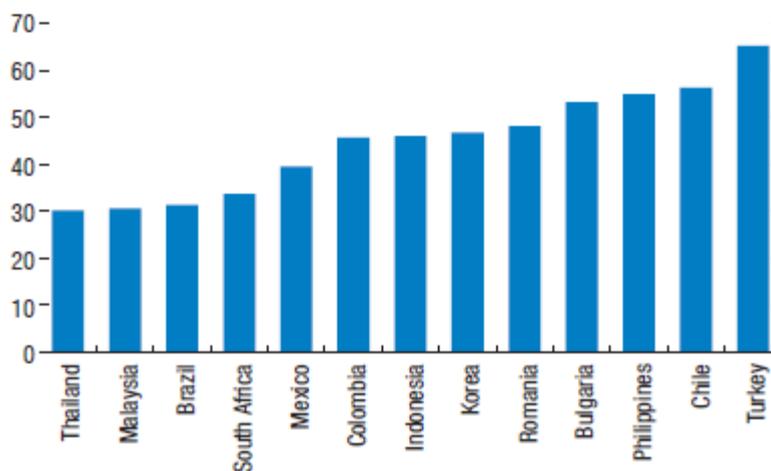
Sources: Thomson Reuters Worldscope; and IMF staff estimates.
Note: The figure shows the share of liabilities held by firms according to their interest coverage ratio (ICR). The ICR is a measure of firms' solvency, calculated as the ratio of earnings (before interest and taxes) to interest expenses.

(Source: IMF, 2015d, p. 94)

- Financial contagion

“Corporate distress could be readily transmitted to the financial sector and contribute to adverse feedback loops. (...) corporate debt constitutes a significant share of emerging market banks' assets (...) shocks to the corporate sector could quickly spill over to the financial sector and generate a vicious cycle as banks curtail lending. Decreased loan supply would then lower aggregate demand and collateral values, further reducing access to finance and thereby economic activity, and in turn, increasing losses to the financial sector (...)” (IMF, 2015d, p. 86).

Figure 26: Domestic Banks in EM Economies - Ratio of Total Corporate Loans to Total Loans
(Percent, 2014)



Sources: IMF, International Financial Statistics database; and IMF staff calculations.

(Source: IMF, 2015d, p. 87)

Advanced Economies

- **Financial Health**

The reduced profitability and new regulatory frameworks limit the ability of banks in developed economies to support the economic recovery, especially in Europe, as discussed further below.

“(…) 2014 aggregate return on equity was about 8 percent, down from an average of about 13 percent during the 2000–06 period (…). More than 3 percentage points of the decline is attributable to the structurally higher capital in bank balance sheets. This reflects tighter regulation of capital levels and quality, intended to make banking systems safer. The remaining 2 percentage points of the difference is due to a decline in underlying profitability, particularly through the loss of profits stemming from the cutback on trading profit.”. (IMF, 2015d, p. 17). (See Figure 27 panel 1, see also *trading profit* in the lexicon).

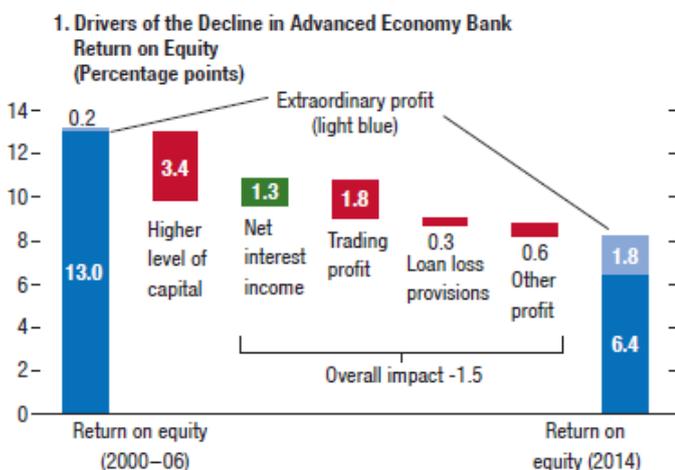
“(…) euro area banks are struggling the most to generate sustainable profits, partly because of their high rates of nonperforming loans (…).” (IMF, 2015d, p. 17). (See Figure 27 panel 2).

“(…) Expectations of continued weak profitability in a number of banks are reflected in current market pricing, with price-to-book ratios lower for institutions whose profitability is forecast to be weaker (…).” (IMF, 2015d, p. 17). (See Figure 27 panel 3, see also *price-to-book ratio* in the lexicon).

“(…) Advanced economy banks will be cautious about lending until their medium-term regulatory environment is clearer, as the Basel III framework is being implemented on a national basis. (…) In the euro area, in particular, this process is taking place alongside initiatives to harmonize options and national discretion set out in the European capital regulation, and as supervision of the largest banks is being centralized within the Single Supervisory Mechanism. A key challenge is to make rapid progress toward a fully harmonized definition of regulatory capital ratios in the euro area. The recent Single Supervisory Mechanism Comprehensive Assessment showed that full implementation of Basel III and a more harmonized approach to asset quality resulted in 2013 capital ratios that were significantly lower than reported ratios (…) in banks accounting for about 20 percent of the risk-weighted assets of participating institutions.”. (IMF, 2015d, p. 17, 21). (See Figure 27 panel 4, see also *Basel III* in the lexicon).

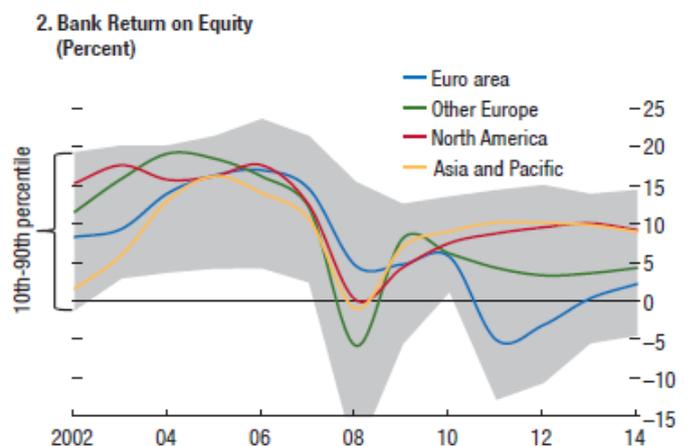
Figure 27: Bank Profitability and Balance Sheet Strength in Advanced Economies

Bank profitability has fallen...



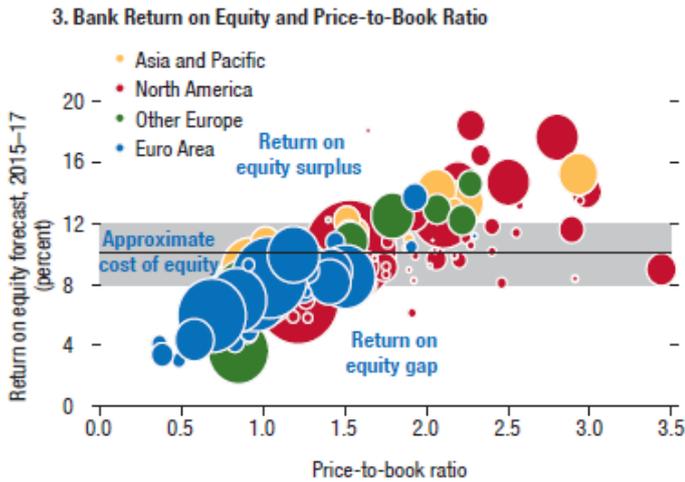
Sources: Bloomberg, L.P.; and IMF staff calculations.
Note: Based on a sample of more than 300 banks.

...across all advanced economies...



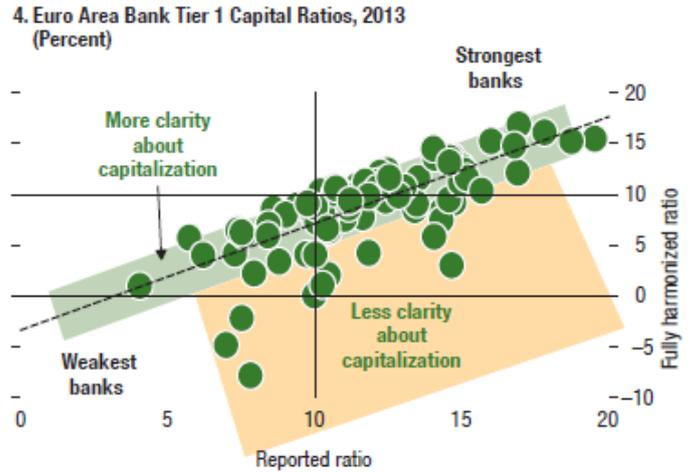
Sources: Bloomberg, L.P.; and IMF staff estimates.
Note: Based on a sample of more than 300 banks.

...and is reflected in market prices.



Sources: Bloomberg, L.P.; and IMF staff calculations.
Note: The size of the circles is proportional to bank assets in 2014.

Questions about bank capital quality remain.



Sources: European Banking Authority; European Central Bank; and IMF staff calculations.
Note: The fully harmonized ratio uses the “fully loaded” definition of capital under the Capital Requirements Directive (CRD-IV) and the harmonization of asset quality definitions from the European Central Bank’s Comprehensive Assessment.

(Source: IMF, 2015d, p.21)

In the IMF’s view, European banks can reduce nonperforming loans further in order to release bank capital for credit growth and to support the economic recovery.

“(…) At the end of 2014, nonperforming loans (NPLs) locked up some €52 billion, or 3 percent of regulatory capital, at euro area banks. (…)” (IMF, 2015d, p. 34).

“A heat map (…) illustrates the capital relief that euro area banks might achieve as a function of foreclosure time and investors’ return expectations at the end of 2014, assuming a 5 percent additional loss. It shows that despite the loss, banks could free up regulatory capital at the current foreclosure time of about three years.” (IMF, 2015d, p. 34). (Figure 28, see also *foreclosure* in the lexicon).¹³

“(…) Progress has been made in resolving NPLs, provisioning ratios have improved, and distressed asset markets have been successfully developed in certain countries. (…)” (IMF, 2015d, p. 34).

“For example, Spain has set up asset management companies and kick-started active management of nonperforming assets.” (IMF, 2015d, p. 34).

“(…) However, one impediment to a reduction in NPLs is the pricing gap - the difference between book values on bank balance sheets and the prices investors are willing to pay.” (IMF, 2015d, p. 34).

The potential benefits from reducing the foreclosure time:

“(…) Reducing the time required to foreclose allows the present value of the collateral to be maximized, which works to the benefit of both debtor and creditor. (…). If NPLs were sold to investors expecting a 10 percent return, €602 billion in new lending capacity (3.7 percent of bank loans to EA residents) could be obtained in the overall euro area, of which €373 billion would be made available in other (non-core) euro area countries (7.4 percent of bank loans to other (non-core) euro area residents), if foreclosure times were reduced to the euro area best-practice level of one year (…).”¹⁴ (IMF, 2015d, p. 34). (See Figure 29).

¹³ Bank’s capital relief (from regulation) increases as foreclosure time and investors’ return expectations decrease.

¹⁴ “‘Core euro area’ consists of Austria, Belgium, Finland, France, Germany, and the Netherlands. ‘Other euro area’ consists of Greece, Ireland, Italy, Portugal, and Spain. (This division does not include all euro area countries.)” (IMF, 2015d, p. 16).

Figure 28: Euro Area Capital Relief from Nonperforming Loans

(Percentage of total regulatory capital as a function of foreclosure time and investors' return expectations)

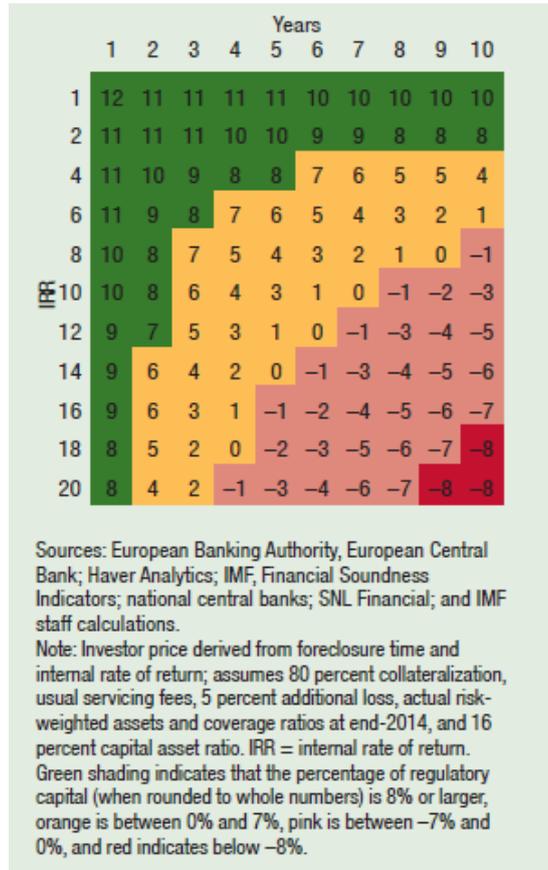
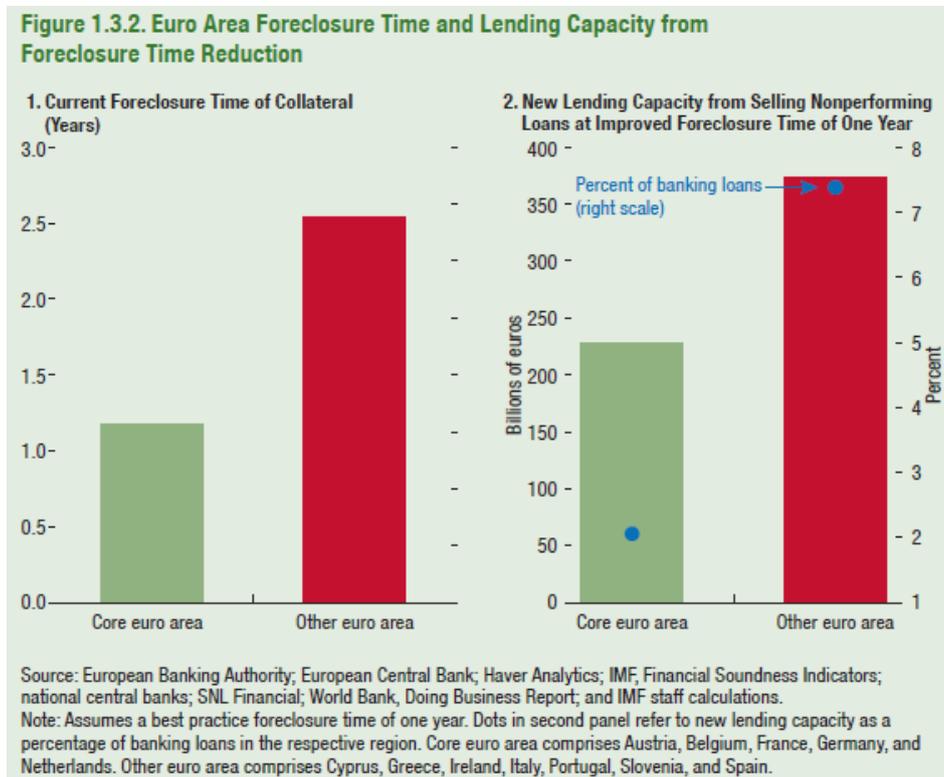


Figure 29: Euro Area Foreclosure Time and Lending Capacity from Foreclosure Time Reduction



(Source: IMF, 2015d, p. 34-35)

In regarding the financial exposure to Greece:

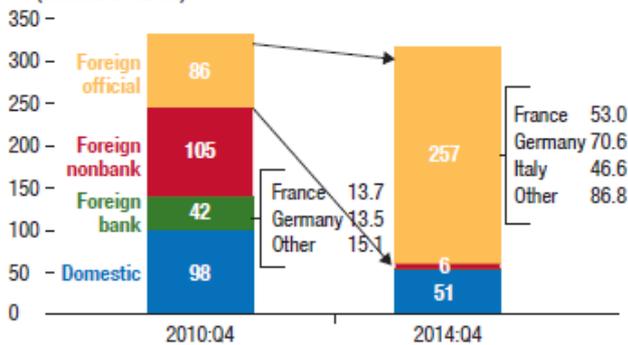
“(…) direct financial exposures of foreign banks and nonbanks to Greece have been sharply reduced since 2010 (…). The exposure has shifted to the European official sector, which now holds nearly €260 billion of Greek assets, of which the European Stability Mechanism (ESM) holds about half. (…)” (IMF, 2015d, p. 16). (See Figure 30 panel 1).

The European Stability Mechanism (ESM) “provides financial assistance to euro area Member States experiencing or threatened by financing difficulties”.¹⁵

Figure 30: Greece Developments

Private exposures to Greece have been absorbed by the official sector, mitigating recent market volatility.

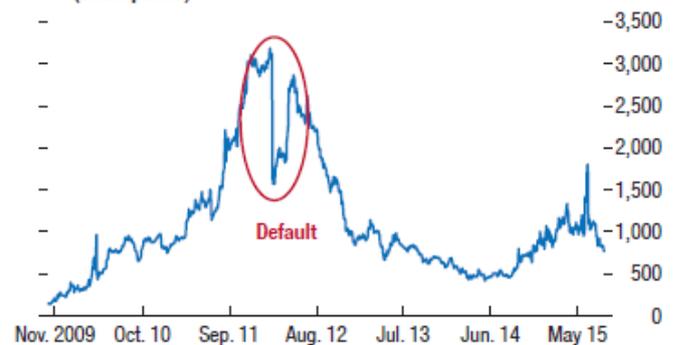
1. Ownership of Greek Sovereign Liabilities (Billions of euros)



Sources: Arslanalp and Tsuda (2014a); and Bank for International Settlements. Note: Individual country holdings represent those on an ultimate risk basis, including indirect holdings through the European Stability Mechanism and the European Financial Stability Facility.

Political difficulties surrounding negotiations have been reflected in higher uncertainty...

2. Ten-Year Bond Spread to German Bund (Basis points)



Sources: Bank of Greece; Bloomberg, L.P. Haver Analytics; and IMF staff calculations.

...reinforcing deposit flight from Greek banks and their reliance on European Central Bank emergency funding.

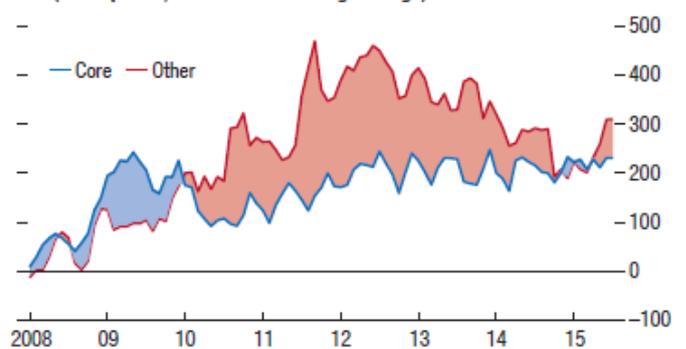
3. Greece: Deposits, Equity Prices, and ELA



Sources: Bank of Greece; Bloomberg, L.P.; European Central Bank; Haver Analytics; and IMF staff calculations. Note: ELA = Emergency Liquidity Assistance.

There have been signs of financial fragmentation, with borrowing costs of firms in non-core countries rising modestly over those in the core.

4. Corporate Bond Spreads to Swaps at Issuance (Basis points, three-month moving average)



Sources: Dealogic; and IMF staff calculations. Note: “Core” countries comprise Austria, Belgium, Finland, France, Germany, Luxembourg, and the Netherlands. “Other” countries comprise Cyprus, Estonia, Greece, Ireland, Italy, Latvia, Portugal, Slovak Republic, Slovenia, and Spain.

(Source: IMF, 2015d, p.16)

¹⁵ <http://www.esm.europa.eu/about/index.htm>, accessed in 02/27/16.

Figure 30 panel 2 shows how the political difficulties that surrounded Greek negotiations raised uncertainty and the risk premium, measured by the *spread* between Greek and German 10-year bonds. (See *basis point* and *spread* in the lexicon).

Figure 30 panel 3 shows withdraws from Greek bank deposits during the crisis and the EMU rescue through emergency liquidity assistance (ELA).¹⁶

Figure 30 panel 4 shows financial fragmentation within the Economic and Monetary Union (EMU), during the Greek crisis, i.e. differences in borrowing costs between corporations from 'Core' and 'Other' Euro area countries.¹⁷

"(...) Although financial market contagion from recent difficulties in Greece has been quite limited, there could be indirect spillovers through broad, negative confidence effects if the situation deteriorates or risks flare up once again." (IMF, 2015d, p. 16).

The Euro area faces specific risks, given the possibility of rupture of the EMU.

A rupture of the EMU would entail a review of investment plans for the region, diminished capital flows within and to the region, raise of sovereign spreads and financial fragmentation.

One derived risk is the 'Euro redenomination risk', i.e. the risk that a euro asset will be redenominated into another currency.

"The most immediate impact of higher redenomination risk would be a widening of sovereign spreads of other euro area countries, although quantitative easing combined with the Outright Monetary Transactions framework would be likely to contain excessive pressures.(...)" (IMF, 2015d, p. 16). (See the lexicon for *Outright Monetary Transactions*).

(To be continued. It will also contain: a) summaries from the ECB and FED current bulletins; b) analyses from credit rating agencies, investment banks and large investment funds).

¹⁶ See further details about ELA in: <https://www.ecb.europa.eu/mopo/ela/html/index.en.html>, accessed in 02/27/16.

¹⁷ For useful and condensed information about the Eurozone, see: <https://en.wikipedia.org/wiki/Eurozone>.

Scenarios for Decompression of Risk Premiums

The section Financial Prospects closes with the discussion of three scenarios, outlined in Figure 2, regarding the prospect of tightening U.S. monetary policy and decompression of risk premiums.

First, as a background, we discuss the current abnormal conditions created in financial markets, after the massive intervention of central banks to mitigate the credit crunch in the aftermath of the financial crisis.

- **Compression of risk premiums and market abnormalities**

Figure 31 panel 1 shows the compression of the *term premium* on 10-year U.S. Treasury bonds.¹⁸ Figure 31 panel 2 shows the official projection and market expectations about the correspondent terminal rate.

“Exceptionally¹ easy monetary policies, required by the severity of the global financial crisis, have encouraged financial risk taking, resulting in asset price inflation, but have also eroded normal relations between key asset prices and fundamentals.

By removing low-risk, long-duration assets from the market through quantitative easing, and by lowering short-term rates to near zero (or even negative levels), officials have herded market participants into riskier and longer-duration assets. As a result, global sovereign bond valuations appear overvalued even though, in a number of countries, deflation risks have been mitigated, confidence in policy has risen, and economic prospects have improved (...). (IMF, 2015d, p. 25). (See Figure 31 panel 3).

“By suppressing the real cost of capital, easy monetary policies may have also impaired the market’s ability to efficiently distribute capital. As credit and term premiums narrowed, asset prices increased, but with less differentiation in pricing, leading to increased correlation in the prices of major asset classes. Instead of being driven largely by fundamentals, price action in global assets has become more binary - investors are either ‘risk on’ or ‘risk off’. In the United States, monetary policy has helped contain corporate credit risk despite a steady rebound in leverage (...). (IMF, 2015d, p. 25). . (See Figure 32 panel 1 and Figure 31 panel 4). (See also *credit risk* in the lexicon).

“The search for yield has forced capital to flow into illiquid assets or to entities that might otherwise not be viable if rates returned to more normal levels. Markets have already priced in some expectation of future liquidity problems, with many bond funds running high allocations to cash (despite near-zero rates) and increasing premiums observed on the most liquid bond issues. Pockets of excessive leverage have emerged because the low-yield environment has compelled investors to employ leverage (often through derivatives) to meet their return targets.” (IMF, 2015d, p. 25). (See *derivatives* in the lexicon).

“Until the market correction in late August, global equity markets had traded at new highs. However, in the United States, much of the gain has been driven by defensive stocks—such as utilities, which typically offer a high dividend component—rather than cyclical stocks, which normally lead the business cycle and recoveries (...). (IMF, 2015d, p. 25). (See Figure 31 panels 5-6). (See *cyclical stocks* in the lexicon).

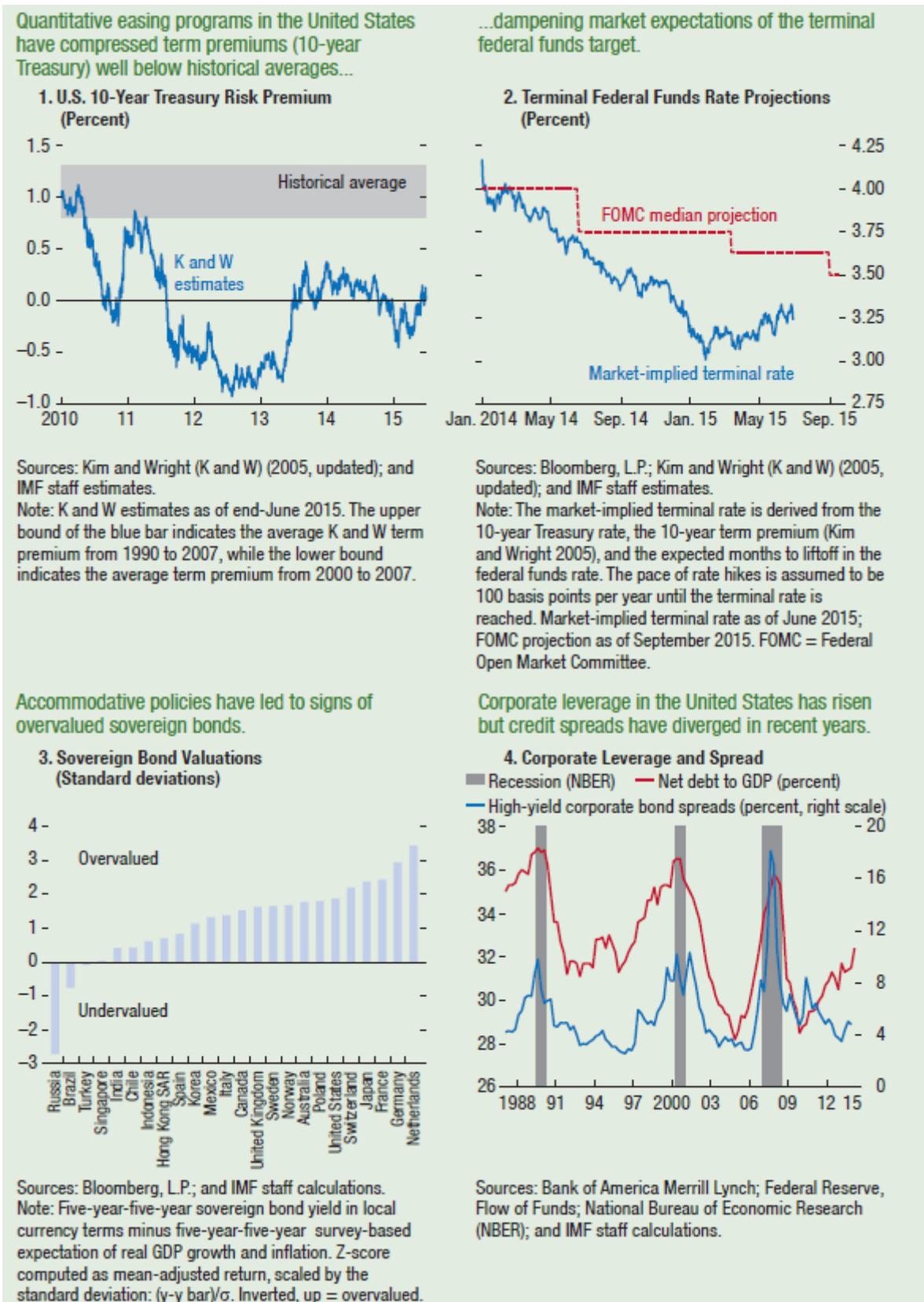
“(…) Taken together, the overvaluation of sovereign bonds and outperformance of defensive stocks may reflect an ongoing search for yield and concern for the medium-term outlook.” (IMF, 2015d, p. 25).

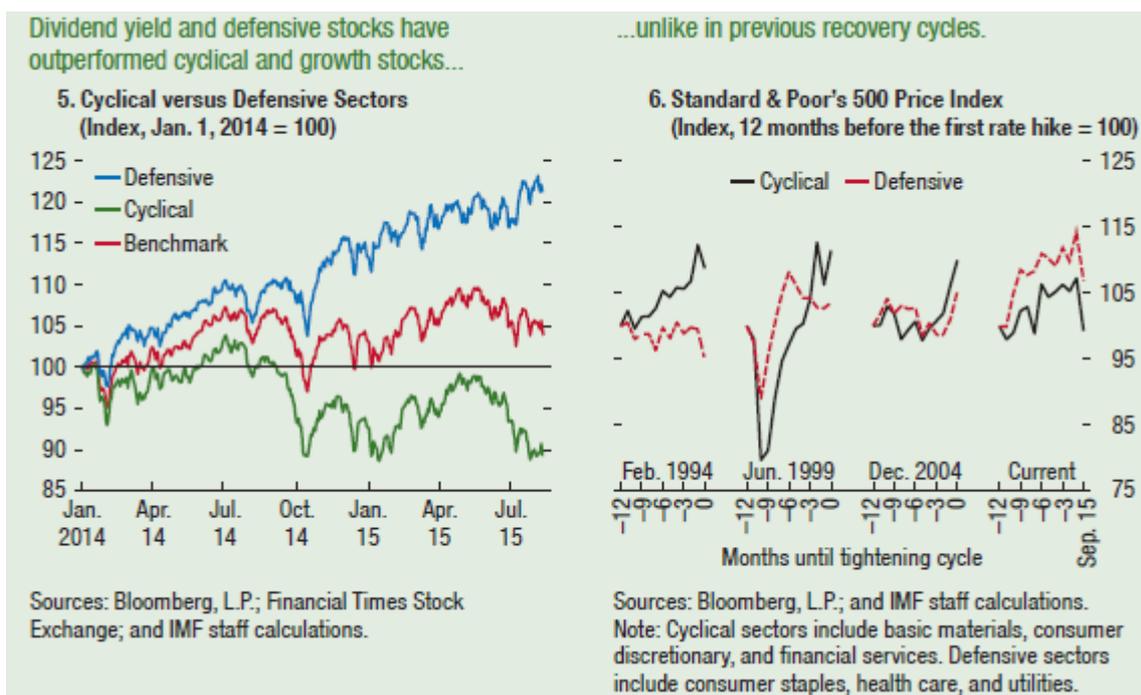
“(…) given the current tight levels of risk premiums in some markets (such as sovereign bonds), the imminent reduction of monetary accommodation in the United States, and the reduced capacity of markets to efficiently transfer risk, a major shock could cause risk premiums to rise dramatically and

¹⁸ See the determinants of term premium in: <http://www.bondeconomics.com/2013/09/primer-what-is-term-premium.html>, accessed in 02/29/16.

abruptly. A sharp decompression in risk premiums would lead to a marked tightening of financial conditions, raise financial stability challenges, and act as a drag on economic growth. As a result, monetary policy exit could be delayed or stalled if already under way.” (IMF, 2015d, p. 25).

Figure 31: Policies Have Led to Compressed Term Premiums and Market Abnormalities





(Source: IMF, 2015d, p.26-27)

Next, we analyze some of the consequences from the abnormal market conditions.

- **High correlation in asset prices and price contagion**

As pointed out before, due to the narrowing of credit and term premiums, the correlation in the prices of major asset classes increased, as they are not being driven by fundamentals but by a binary distinction – ‘risky’ or ‘riskless’.

“(…) not only have asset correlations been much higher on average since 2010 across advanced and emerging economies (…), but they have remained elevated even during periods of low volatility. More recently, they rose in the wake of European sovereign bond market volatility in May and the subsequent difficulties in Greece. Data on cross-asset correlations suggest that the assets most vulnerable to price contagion include emerging market bonds and U.S. high-yield bonds. (…)” (IMF, 2015d, p. 23). (See Figure 32 panel 1).

- **Excess leverage in *mutual funds* and risk of large-scale redemptions**

“(…) Mutual funds are vulnerable to potential large-scale redemptions. Mutual funds have become increasingly important in supplying credit to the U.S. corporate bond market. The search for yield has contributed to the increase in the retail share of corporate bond ownership, which is held largely in mutual funds, to one-third, the highest level on record. (…)

those mutual funds that invest in relatively illiquid assets are subject to liquidity mismatches. Their promise of liquidity may be challenged under elevated outflows, and could generate a vicious circle of further price declines and redemptions.

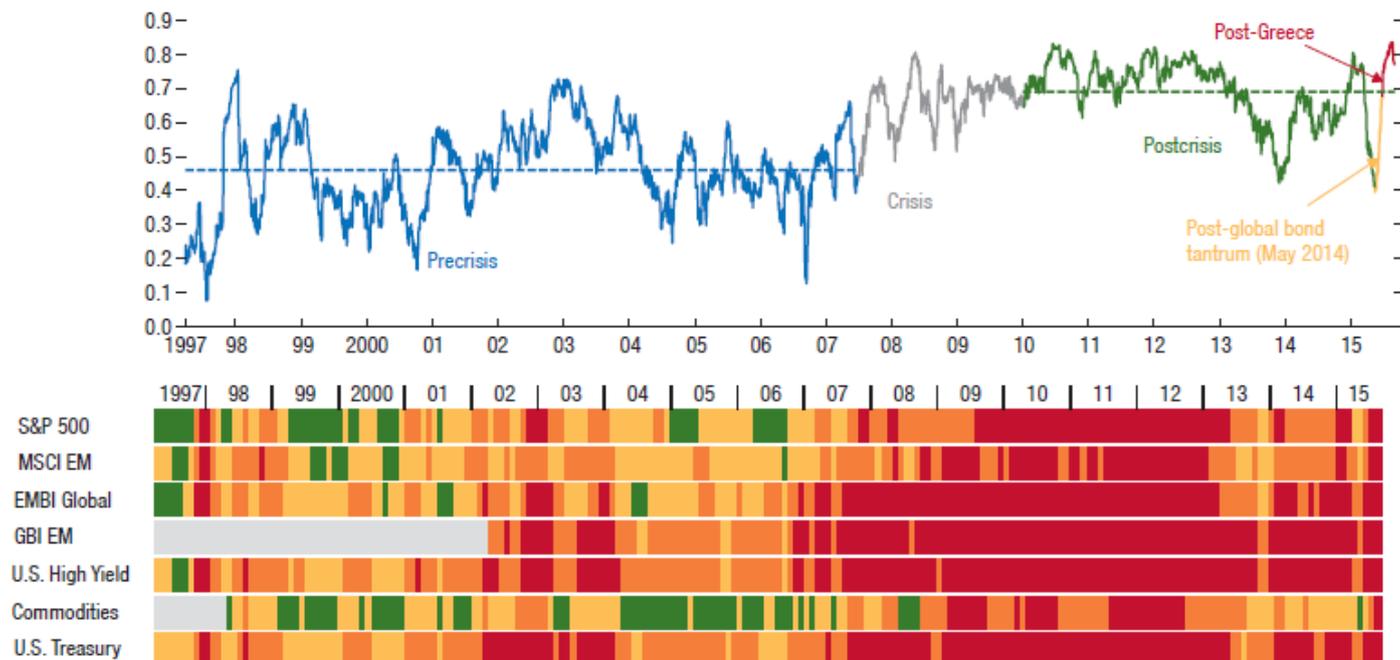
- Excess leverage⁴ in the derivatives positions of a number of regulated investment funds could further amplify the impact of redemptions. The search for yield may also be the impetus for the growth of large bond mutual funds that actively use derivatives; their assets under management now amount to more than \$900 billion, or about 13 percent of the world’s bond fund sector (…)
- (IMF, 2015d, p. 23). (See Figure 33).

"⁴ While U.S. regulated investment funds are subject to explicit leverage limits, derivatives exposures may mask implicit leverage since there is less explicit regulation on leverage through derivatives as there is in Europe. (...)",(IMF, 2015d, p. 23).

Figure 32: Cross-Asset Correlations (median daily) and Correlation Heat Map

Asset correlations have increased in the postcrisis era, reflecting a rise across most major asset classes.

1. Cross-Asset Correlations (median daily) and Correlation Heat Map



Sources: Bank of America Merrill Lynch; Bloomberg, L.P.; and IMF staff estimates.

Note: The correlation index summarizes the median daily cross-asset correlations of Sharpe ratios across all of the following asset classes: U.S. Standard & Poor's 500, MSCI Emerging Markets, U.S. Treasuries, EMBI Global Bond Index, GBI Emerging Markets Bond Index (local currency), U.S. High Yield, and Commodities. The heat map displays the underlying median correlation for each of the seven asset classes against the remaining six asset classes. The correlation of U.S. Treasuries, being a "risk-free" asset, is expressed in absolute terms, as it is typically negative vis-à-vis risk. Correlation key: green 0.00–0.30; yellow 0.31–0.50; orange 0.51–0.65; and red 0.66–1.00.

(Source: IMF, 2015d, p.22)

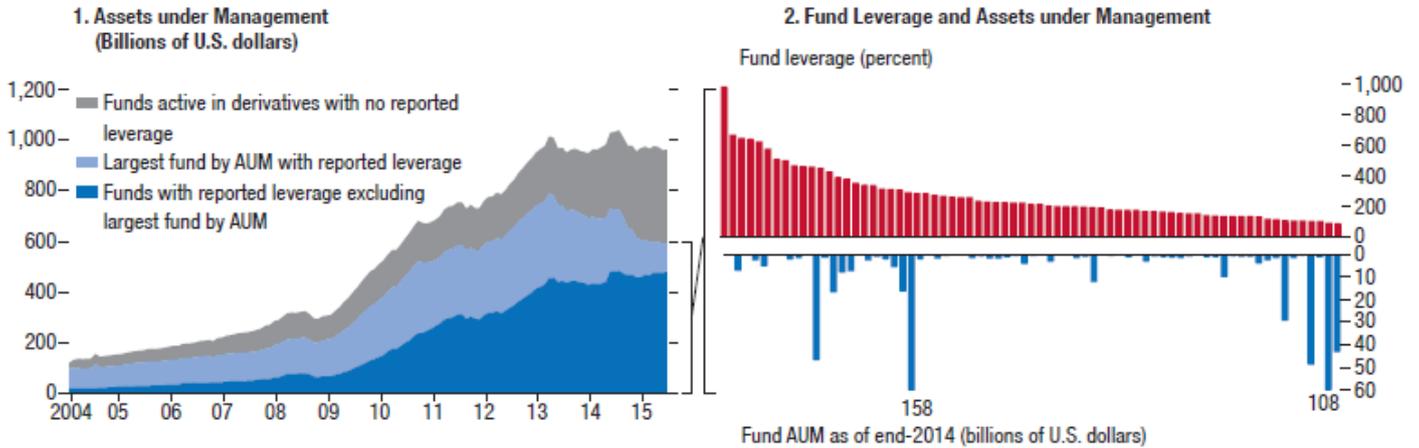
- **Loss of market depth, higher transaction costs and greater volatility**

"Markets for some assets, including U.S. Treasury securities, are exhibiting episodes of volatility, marked by a disappearance of liquidity and depth. (...) the loss of market depth reflects a combination of factors - including smaller trade sizes, less frequent trading, and greater volatility - that have increased the cost to dealers of trading and holding inventory (...). Analysis suggests that the likelihood of rapid and significant spikes in volatility rises considerably as two-year U.S. Treasury market depth falls below a critical level of approximately \$1 billion (...)" (IMF, 2015d, p. 23-25). (See Figure 34).

Figure 33: Large United States and European Regulated Bond Investment Funds with Derivatives-Embedded Leverage

Growth is strong in the assets under management of selected large regulated bond funds that use derivatives...

...with embedded leverage exceeding 100 percent of net asset value...



Sources: Bloomberg, L.P.; funds annual reports; and IMF staff calculations.

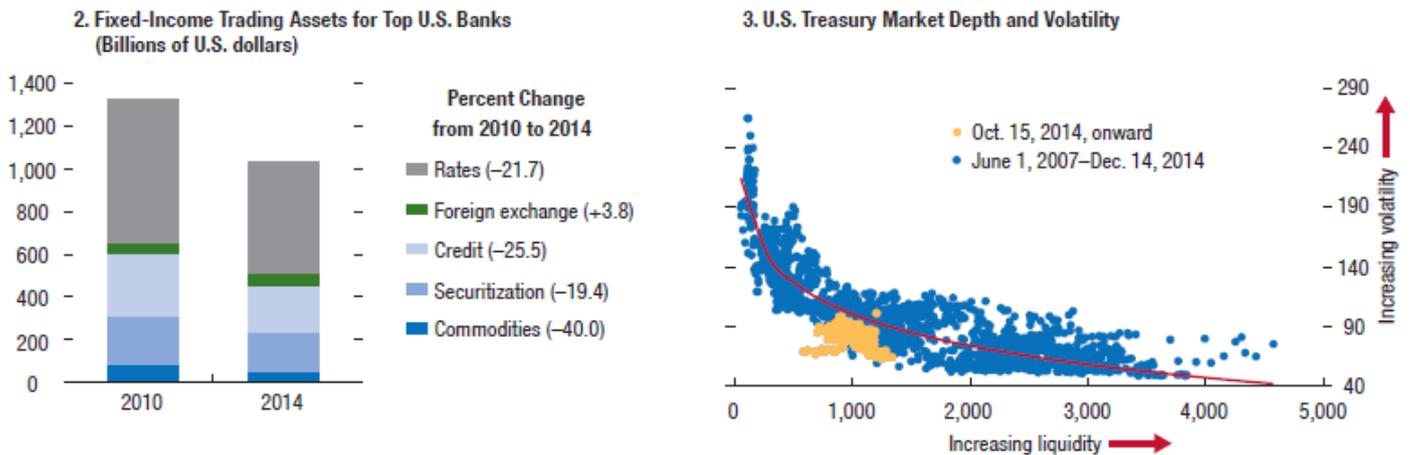
Note: Includes funds with assets under management (AUM) > \$0.5 billion for funds with reported leverage, and AUM > \$1 billion for other funds active in derivatives without reported leverage. Reported leverage during the previous year is obtained from the funds' latest annual reports under the Committee of European Securities Regulators' commitment approach. Leverage is defined as notional exposure of derivatives positions adjusted by hedging and netting. The AUM calculation of funds with reported leverage includes the assets of the U.S.-domiciled version of the same European Union-domiciled funds that report leverage. Funds active in derivatives without reported leverage have a minimum 15 separate derivatives lines in their latest annual reports. The sample includes two multistrategy funds that have significant exposure to fixed income.

(Source: IMF, 2015d, p.24)

Figure 34: Fixed-Income Trading Assets for Top U.S. Banks (Billions of U.S. dollars)

Liquidity has declined as broker-dealers have retreated from market-making activities...

...while volatility appears to rise as market depth declines.



Source: Goldman Sachs.

Note: Data for 2014 are average of first three quarters.

Sources: Bloomberg, L.P.; BrokerTec; JPMorgan Chase & Co; and IMF staff calculations.

Note: Volatility is proxied by the Merrill Lynch Option Volatility Estimate (MOVE) index, which is a yield-curve-weighted index of normalized implied volatility on three-month Treasury options. Market depth, defined as the sum of the three bids and offers in on-the-run two-year Treasuries (average between 8:30 a.m. and 10:30 a.m. each day), is measured in millions of U.S. dollars.

(Source: IMF, 2015d, p.22)

- **Loss of market liquidity and its implications**

There is a current loss of market liquidity in consequence of the loss of market depth, as liquidity suppliers retreat. In addition:

“(…) Underlying market liquidity is also being affected by changes in regulation and bank business models and by the rise of algorithmic and high-frequency traders. These newer market participants have dramatically reshaped the structure of many markets and reduced the attractiveness of the traditional risk-warehousing role played by dealers. (..). (IMF, 2015d, p. 25). (See *high frequency traders* in the lexicon).

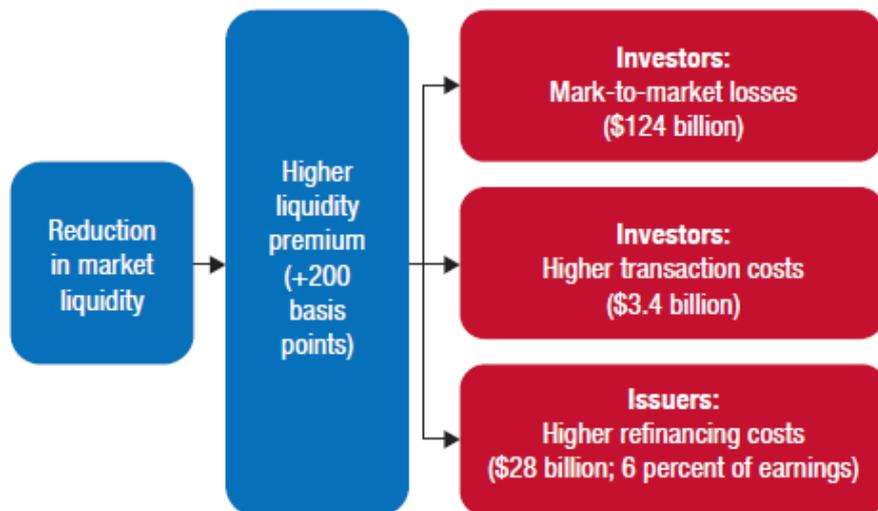
“A loss in market liquidity carries wider systemic implications that can be illustrated in the corporate bond market. For example, a permanent 200 basis point rise in the spread for high-yield U.S. corporate debt¹⁰ from a liquidity shock could result in a number of costs for investors (…). First, retail and institutional investors would be hit by significant mark-to-market losses on their holdings. Second, corporate issuers would suffer from higher borrowing costs, particularly hurting those with large rollover needs. Third, investors and dealers would face higher transaction costs, further limiting turnover in this market.¹¹ High-yield companies would face additional issuance costs of \$3.4 billion, or roughly 6 percent of current one-year earnings. A shock of this nature could reinforce a cycle of redemption risks in retail mutual bond funds and pressures on other illiquid assets. Moreover, risks of further shocks (or decompression in risk premiums) would only reinforce this negative cycle.”. (IMF, 2015d, p. 25, 27). (See

Figure 35). (See also *mark to market* in the lexicon).

¹¹The impact on investors is measured by computing the mark-to-market losses resulting from increased yields (and the corresponding decline in prices) and by increasing a measure of actual transaction costs (costs of a roundtrip buy-and-sell transaction for the same quantity). The costs for issuers are computed by estimating the additional issuance costs required to roll over the entire stock of debt.”. (IMF, 2015d, p. 27).

Figure 35: Systemic Implications of a Liquidity Shock – simulation for the U.S. corporate bond market

A risk premium shock results in costs to high-yield issuers and investors.



Sources: Federal Reserve; Oliver Wyman; Securities Industry and Financial Markets Association; Trade Reporting and Compliance Engine (TRACE); and IMF staff estimates.

Note: Issuance costs account for 6 percent of high-yield companies' one-year earnings as of 2015:Q1.

(Source: IMF, 2015d, p.27)

The table below summarizes financial market dysfunctions in consequence of diminished liquidity. (See *credit default swap (CDS)*, *repurchase agreement* and *value at risk* in the lexicon).

Table 2: Effects of Diminished Liquidity

Effect of Diminished Liquidity	Implication
Less market making	More difficult to execute trades without affecting asset prices Greater asset price volatility Further breaches of value-at-risk limits leading to forced sales of assets
Reduced activity in repo (repurchase agreement) markets	Less funding available for hedge funds to arbitrage away discrepancies in asset prices More difficult to trade short positions, affecting market efficiency More difficult to hedge market risk Likely sporadic “snapbacks” in some asset prices as dislocations are corrected
Lower trading in single-name CDS	No single instrument to trade credit risk in an individual company Hedges move to CDS indices, with fragmentation between indices and single-name CDS Less efficient hedging of credit exposure
Cutback in interest rate swaps	More difficult to hedge floating or fixed interest rate exposure
Liquidity herding	Greater fragmentation of liquidity and breakdown of relationships between assets More difficult to hedge risks in financial markets Greater use of foreign exchange markets as proxy hedges More difficult for banks to manage good-quality liquid asset portfolios

Source: IMF staff.

Note: CDS = credit default swap.

(Source: IMF, 2015d, p.36)

- **Scenario 1: global asset market disruption**

Here, we analyze the global scenario of abrupt decompression of asset risk premiums, outlined in Figure 2.

In this scenario, there are three main layers:

a) Abrupt further decompression of asset risk premiums

“(…) The decompression is amplified by low secondary market liquidity in systemic advanced economies. The risk premium decompression elevates long-term government bond yields relative to the baseline, but yields in Japan, the United Kingdom, Germany, and the United States are relatively lower as the result of “safe haven” capital flows. Higher long-term government yields interact with a reemergence of financial strains in some euro area economies. Lower risk appetite also leads to a stock market selloff and declining equity prices. Elevated global capital market volatility widens the spread of the money market interest rate over the policy interest rate.” (IMF, 2015d, p. 28). (See Figure 36 panels 1-2 e panel 4). (See also *money market* in the lexicon).

b) Credit cycle downturns in emerging markets

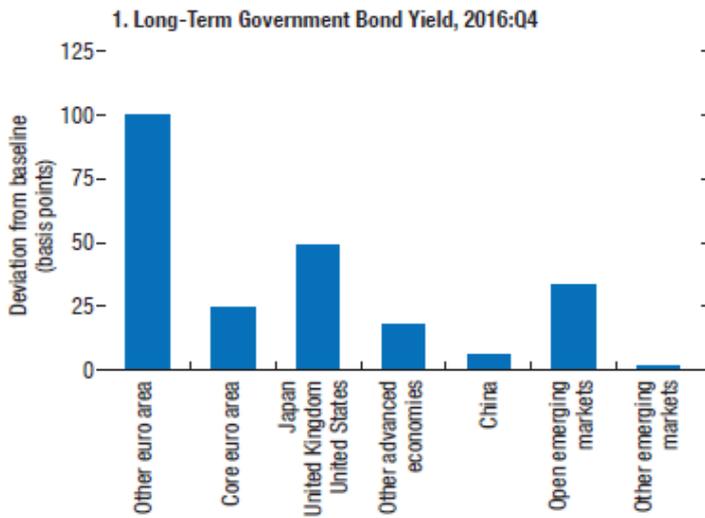
“These downturns result in higher default rates on bank loans to nonfinancial firms in emerging markets, given the rising share of corporate debt at risk, in addition to defaults induced by spillovers from advanced economies. In China, the emergence of counterparty credit risk widens the spread of the money market interest rate over the policy interest rate.” (IMF, 2015d, p. 28).

c) Worldwide decline in economic risk taking

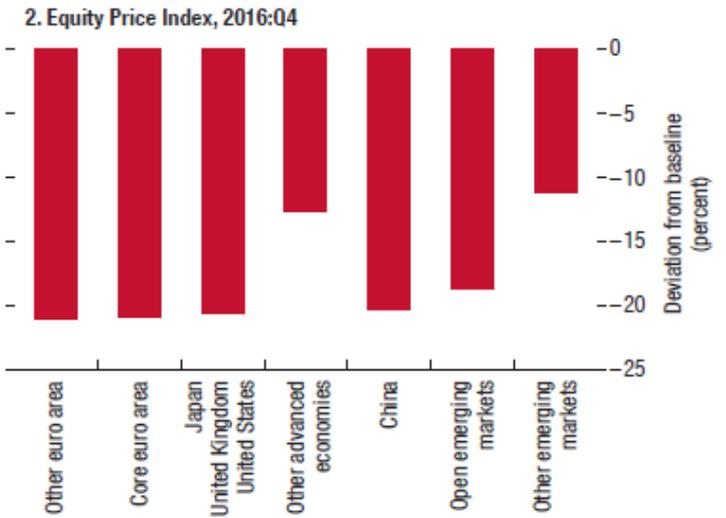
“(…) additional decline in private investment and consumption. The contraction of private domestic demand is driven by a loss of business and household confidence, which increases saving rates and delays investment. Monetary authorities in the systemic advanced economies continue quantitative easing to keep policy rates at or near the zero lower bound. In emerging market economies, monetary policy loosens in response to the adverse shock.” (IMF, 2015d, p. 28).

Figure 36: Effect of a Global Asset Market Disruption

The global asset market disruption scenario entails rapid decompression of risk premiums in bonds...

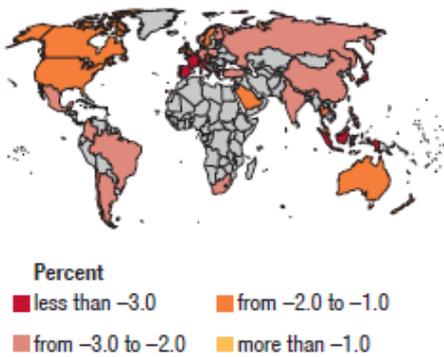


...and equities.

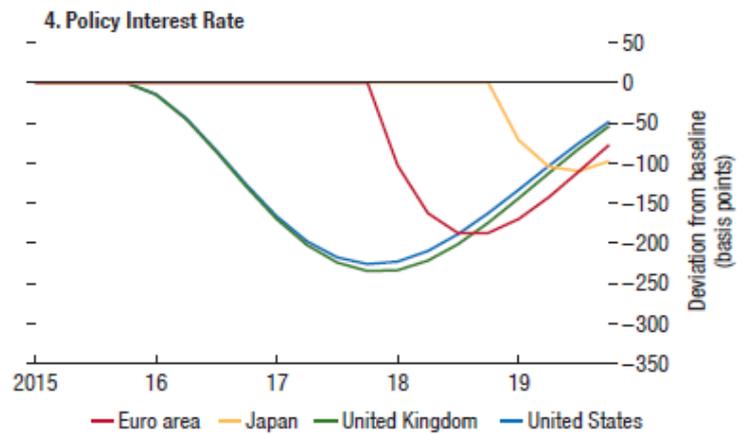


The scenario generates moderate to large output losses worldwide...

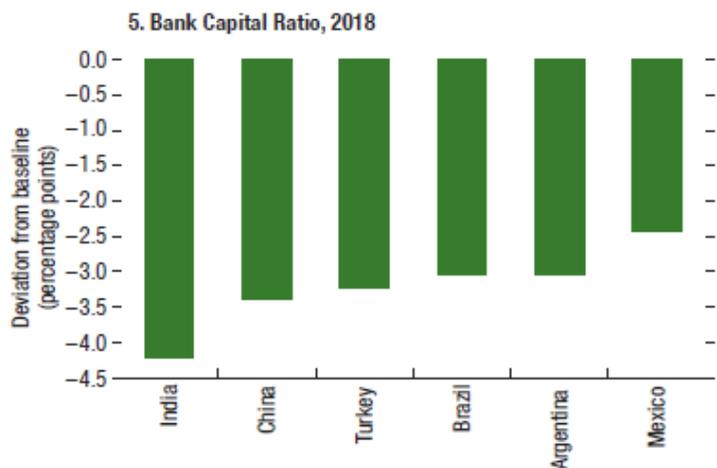
3. Output, 2017



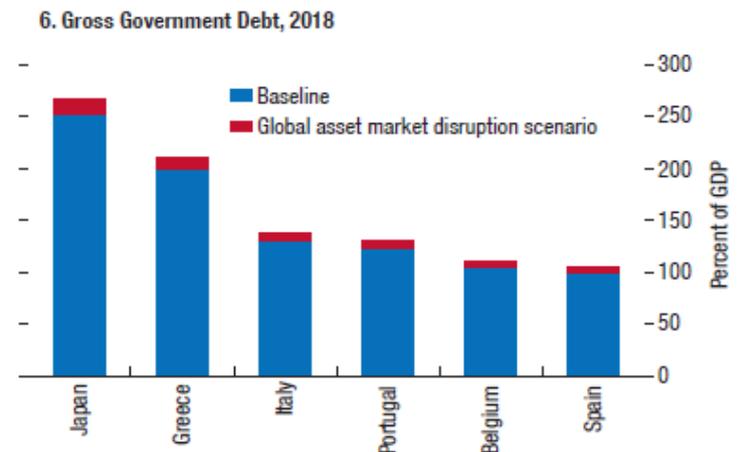
...and delays or stalls monetary policy normalization in advanced economies.



Banking sector capitalization suffers...



...as does government debt sustainability.



Source: IMF staff calculations.

Note: For the methodology, see Annex 1.2. Open emerging markets = Argentina, Brazil, Colombia, India, Indonesia, Mexico, Philippines, Poland, Russia, South Africa, Thailand, and Turkey.

(Source: IMF, 2015d, p.29)

The impacts on output and commodity prices:

“In aggregate, world output is lower by 2.4 percent by 2017 relative to the baseline, which implies still positive but low global growth. Energy and non-energy commodity prices fall by 22.7 percent and 11.8 per-cent, respectively.” (IMF, 2015d, p. 28).

Regarding bank capitalization and government debt, see Figure 36 panels 5-6.

The main transmission mechanisms in this scenario:

“The likely adverse effects of the global asset market disruption scenario vary considerably across countries, but most are hit by one or more of three transmission channels: financial contagion shocks (via equity, bond, and money markets), corporate debt shocks (affecting bank soundness), and commodity shocks (affecting net commodity exporters). Financial contagion—via portfolio outflows from emerging markets—is a particularly important transmission channel (...). Emerging market bond yields tend to comove, especially during stress episodes. About half of this variation can be explained by a single common factor. The common factor is highly correlated to the 10-year U.S. Treasury rate and this relationship has become stronger since the 2013 taper tantrum (...), implying that the U.S. rate plays a key role in the transmission channel.¹² (...).” (IMF, 2015d, p. 30). (See panel 1). (See *common factor* and *tapering* in the lexicon).

¹² Statistical analysis shows that the causation runs from the U.S. rate to the common factor rather than the reverse.” (IMF, 2015d, p. 30).

(...) The adjustment would be particularly painful for emerging markets with high foreign participation in bond markets. The sensitivity of each country’s bond yield to the common factor can be partly explained by the share of foreign ownership in local government bond markets (...), even though other factors, such as the quality of domestic fundamentals, also have an influence. (...).” (IMF, 2015d, p. 30). (See Figure 37 panel 2).

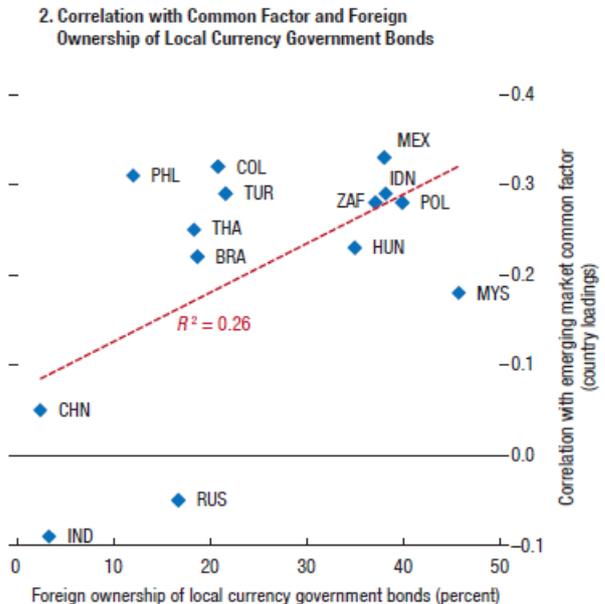
Figure 37: Emerging Market Local Currency Bond Yields

Comovements in emerging market local currency bond yields are largely explained by a common factor, which is highly correlated with the U.S. Treasury rate.



Source: IMF staff calculations.
Note: The emerging market common factor is the first component of 10-year government bond yields from 14 emerging market economies using principal component analysis. The common factor was transformed to have the same mean and variance as the U.S. 10-year Treasury yield.

Countries with higher foreign ownership of local currency government bonds tend to have higher sensitivity to the common factor.



Sources: Arslanalp and Tsuda (2014b); national authorities; and IMF staff calculations.
Note: Data labels in the figure use International Organization for Standardization (ISO) country codes.

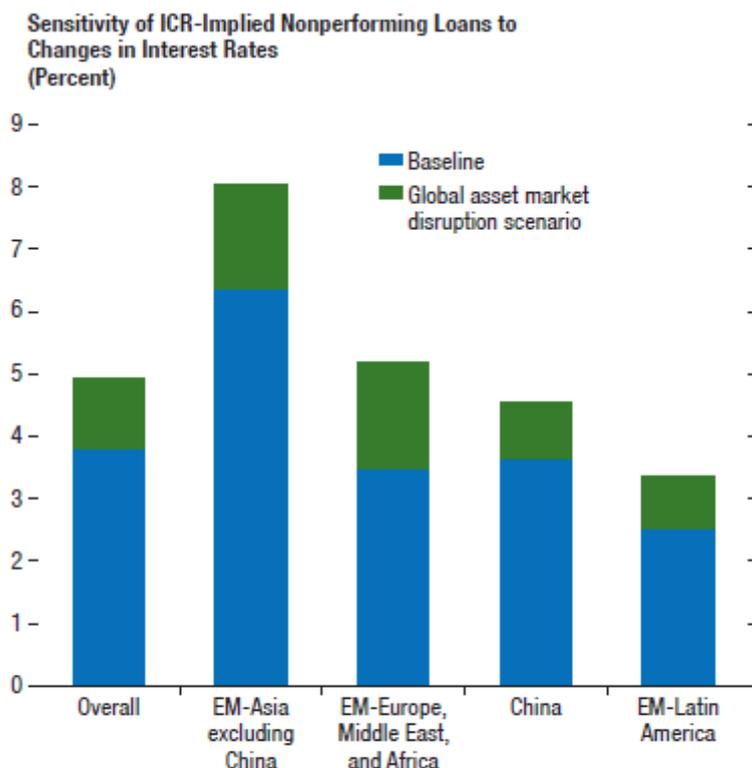
(Source: IMF, 2015d, p.30)

“The scenario’s combination of risk premium reversal (higher rates) and deteriorating economic outlook (lower corporate cash flows) would particularly compromise emerging market firms’ debt-service capacity. Asset quality would deteriorate in all regions under the simulation, significantly so in emerging Asia (...). (IMF, 2015d, p. 30). (See

Figure 38). (See also *interest coverage ratio* in the lexicon.)

“(...) These calculations assume relatively small changes in exchange rates; if larger depreciation risks were to materialize, solvency risks for unhedged dollar borrowers, especially property developers, would increase, translating into even larger nonperforming loans (...). (IMF, 2015d, p. 31).

Figure 38: Corporate Debt Burden in Market Disruption Scenario



Sources: Standard & Poor’s Capital IQ; and IMF staff calculations.
 Note: The global asset market disruption scenario consists of a 25 percent increase in borrowing costs and growth shocks. Vulnerable debt is defined as the debt of firms whose EBITDA does not cover interest expenses for six consecutive quarters. EBITDA = earnings before interest, taxes, depreciation, and amortization; EM = emerging markets; ICR = interest coverage ratio.

(Source: IMF, 2015d, p.31)

In our understanding,

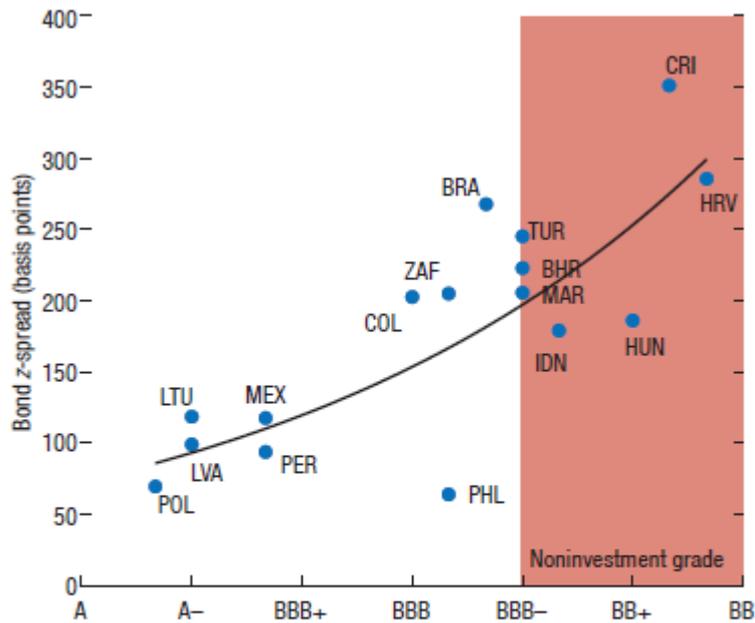
Figure 38 shows the increase in nonperforming loans in the market disruption scenario (in percentage points), on top of the figures of the baseline scenario, which expresses current values. The computation is based on the interest coverage ratio as explained in the legend of the figure.

In regarding the connection between corporate and sovereign risks in emergent markets:

“Several emerging market sovereigns—Brazil, South Africa, and Turkey, for example—are at the lower end of the investment-grade ratings scale (...). The global asset market disruption scenario, with weaker growth and higher risk premiums, would put pressure on the ratings of several economies in the

medium term. A loss of investment-grade ratings would cement higher borrowing costs for sovereigns and firms. (...). (IMF, 2015d, p. 31). (See Figure 39).

Figure 39: Current Rating and Spread of Five-Year Sovereign U.S. Dollar Bonds



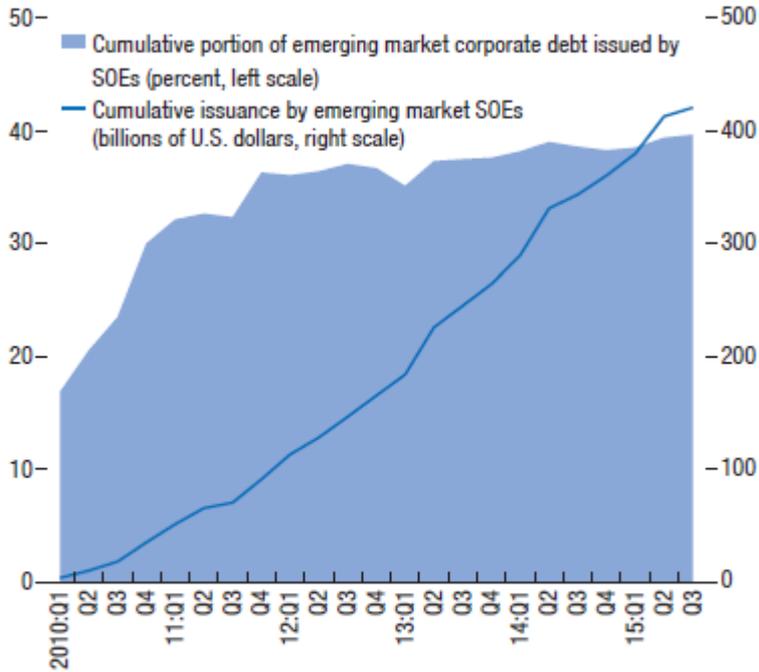
Sources: Bloomberg, L.P.; Fitch; Moody's; Standard & Poor's; and IMF staff calculations.
 Note: Data labels in the figure use International Organization for Standardization (ISO) country codes.

(Source: IMF, 2015d, p.32)

“The sovereign-state-owned enterprise nexus can also amplify headwinds to the sovereign when contingent liabilities of the state-owned enterprises are assumed by the sovereign. Since 2010, an increasing portion of externally issued emerging market corporate debt has been issued by state-owned entities (...). Firms in the oil, gas, and utility sectors can feed commodity price and credit turmoil back to the sovereign as, for example, Petrobras in Brazil, PDVSA in Venezuela, Rosneft in Russia, KazMunayGas in Kazakhstan, and Eskom in South Africa (...). (IMF, 2015d, p. 31). (See Figure 40 e Figure 41).

The following link leads to an interactive world map that contains the sovereign rating of Standard & Poor's: <http://www.spratings.com/sri/>.

Figure 40: Cumulative Share of External Corporate Debt Issued by State-Owned Enterprises

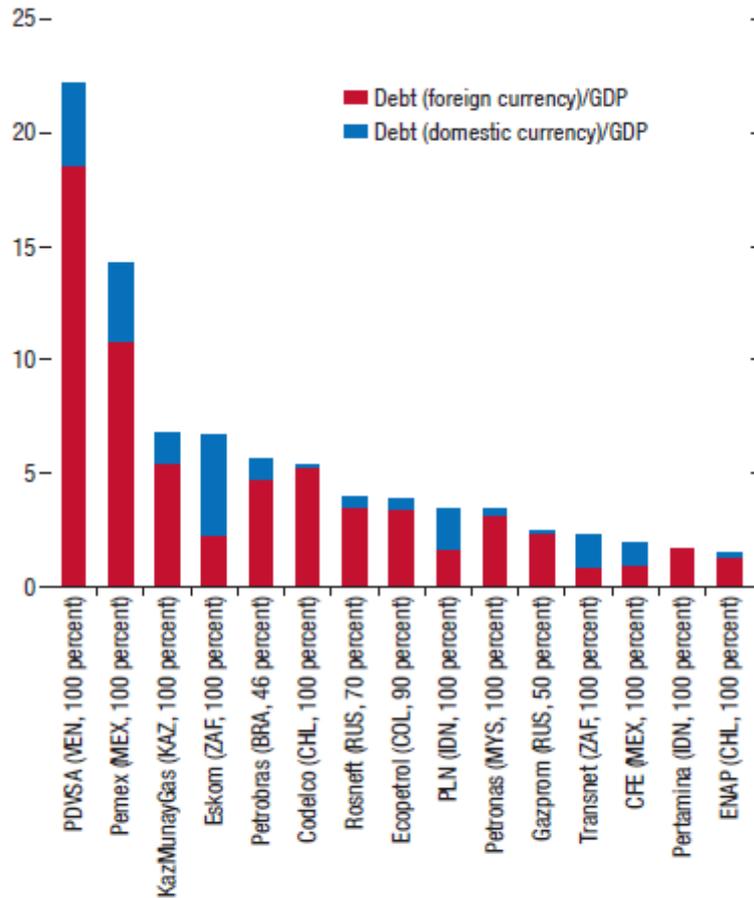


Sources: Dealogic; and IMF staff calculations.

Note: SOE = state-owned enterprise.

(Source: IMF, 2015d, p.32)

Figure 41: Selected Quasi-Sovereign Company Ownership and Debt (Percent)



Sources: Bloomberg, L.P.; company annual reports; Standard & Poor's Capital IQ; and IMF staff calculations.
 Note: Country and sovereign ownership (percent) are identified within parentheses. Country abbreviations in the figure use International Organization for Standardization (ISO) country codes.

Source: IMF, 2015d, p.33)

- **Scenario 3: Successful normalization of financial conditions**

Scenario 2, the baseline scenario, expresses current conditions that were shown already extensively above. Thus, we turn to the last scenario.

Perhaps, the most important information with respect to scenario 3 is how to achieve the conditions that compound it. The IMF outlined some global policy considerations as preconditions, in the IMF, 2015d on p. 31-37, and we will not discuss them here.

In what follows, we show the projections of scenario 3 and summaries of assumptions and transmission mechanisms of scenarios 1 and 3. For additional details about the global macro-financial model behind these scenarios, see the IMF, 2015d p. 43-47.

“Under this favorable upside scenario, world output would expand by an additional 0.4 percent by 2018 relative to the baseline, while energy and non-energy commodity prices would rise by 3.1 percent and 1.5 percent, respectively.¹⁶ Because the primary focus of these scenarios is on financial policies, this upside scenario does not include any growth-enhancing structural reforms (to increase growth potential) or

possible further expansionary demand policies (such as infrastructure spending) to close output gaps. In other words, the main benefit of these financial sector policies in the successful normalization scenario is that they insure against the loss of financial stability, which would entail high losses of output. (...). (IMF, 2015d, p. 37).

“¹⁶Wide variation in output across economies reflects differences in the extent to which positive trade spillovers from the systemic advanced economies outweigh net negative financial spillovers from those economies (via higher interest rates) and negative trade spill-overs from China.” (IMF, 2015d, p. 37).

The assumptions and transmission mechanisms of scenarios 1 and 3 are in the **Table 3-Table 6** below.

- **Scenarios 1 and 3: assumptions and transmission mechanisms**

The following tables summarize the assumptions (model calibration, i.e. parameter values) and the transmission mechanisms (behavior) in both scenarios.

Table 3: Global Asset Market Disruption Scenario - Assumptions

Scenario component	Deviation from baseline
<i>Layer 1: Tightening of financial conditions in systemic economies (2016)</i>	
Long-term government bond yield, term premium shocks	
euro area (other)	+100 basis points
euro area (core)	+25 basis points
Japan, United Kingdom, United States	+50 basis points
Real equity price, equity risk premium shocks	
China, euro area, Japan, United Kingdom, United States	-20 percent
Money market interest rate spread, credit risk premium shocks	
China	+100 basis points
euro area, Japan, United Kingdom, United States	+25 basis points
<i>Layer 2: Credit cycle downturns in emerging economies (2016—2017)</i>	
Loan default rate, loan default shocks	+0.1 to 4.5 percentage points
<i>Layer 3: Suppressed economic risk taking worldwide (2016—2017)</i>	
Private investment, investment demand shocks	-0.500 percent
Private consumption, consumption demand shocks	-0.125 percent

Source: IMF staff.

Source: IMF, 2015d, p.40)

Table 4: Successful Normalization Scenario - Assumptions

Scenario Component	Deviation from Baseline
<i>Layer 1: Handover from financial to economic risk taking in United Kingdom and United States (2016–17) and euro area and Japan (2017–18)</i>	
Private investment, investment demand shocks	+4.0 percent
Private consumption, consumption demand shocks	+1.0 percent
Long-term government bond yield, duration risk premium shocks	+50 basis points
Real equity price, equity risk premium shocks	+10 percent
<i>Layer 2: Credit cycle upturns in non-core euro area countries (2017–18)</i>	
Loan default rate, loan default shocks	-2.0 percentage points
<i>Layer 3: Smooth financial liberalization and orderly deleveraging in China (2016–17)</i>	
Money market interest rate spread, credit risk premium shocks	+50 basis points
Real equity price, equity risk premium shocks	-20 percent

Source: IMF staff.

(Source: IMF, 2015d, p.41)

Table 5: Global Asset Market Disruption Scenario - Shock Transmission Mechanisms

Tightening of Financial Conditions in Systemic Economies:

Increases in long-term government bond yields driven by higher term premiums induce:

- Households to raise saving rates in response to higher expected portfolio returns and correspondingly to reduce consumption.
- Firms to reduce investment financed by retained earnings as shareholders discount dividend payments generated from future production at higher rates.
- Governments to gradually face higher debt service costs as outstanding long-term bonds mature and are rolled over in primary markets.

Decreases in real equity prices driven by higher equity risk premiums induce:

- Households to raise saving rates in response to higher expected portfolio returns and correspondingly to reduce consumption.
- Firms to reduce investment financed by retained earnings as shareholders discount dividend payments generated from future production at higher rates.

Increases in money market interest rate spreads driven by higher credit risk premiums induce:

- Households to raise saving rates in response to higher deposit interest rates and expected portfolio returns and correspondingly to reduce consumption.
- Banks to gradually and partially pass through higher funding costs to firms through higher lending interest rates while eroding their profitability and capital buffers.
- Firms to reduce investment financed by retained earnings as shareholders discount dividend payments generated from future production at higher rates, and to reduce investment financed with bank loans in response to higher corporate loan interest rates.
- Governments to immediately face higher debt service costs as outstanding short-term bonds mature and are rolled over in primary markets.

Credit Cycle Downturns in Emerging Economies:

Loan default rate increases reflect endogenous and exogenous components.

- Endogenous loan default rate increases reflect materialization of systemic risk given financial spillovers from systemic advanced economies.
- Exogenous loan default rate increases are proportional to estimated share of corporate debt at risk and capture position in credit cycle.

Loan default rate increases raise credit loss rates of exposed banking sectors, which in turn raise lending interest rates to compensate for higher risk and gradually rebuild capital buffers.

- Higher bank lending interest rates translate into higher corporate loan interest rates, reducing investment by firms.

Suppressed Economic Risk Taking Worldwide:

Confidence losses by households and firms raise their saving rates and delay their expenditures.

- Households intertemporally substitute future for current consumption.
- Firms intertemporally substitute future for current investment.
- Firms to reduce investment financed by retained earnings as shareholders discount dividend payments generated from future production at higher rates.

Source: IMF staff.

(Source: IMF, 2015d, p.42)

Table 6: Successful Normalization Scenario - Shock Transmission Mechanisms

Handover from Financial to Economic Risk Taking in Systemic Advanced Economies:

Confidence gains by households and firms reduce their saving rates and bring forward their expenditures.

- Households intertemporally substitute current for future consumption.
- Firms intertemporally substitute current for future investment.

Increases in long-term government bond yields driven by higher term premiums induce:

- Households to raise saving rates in response to higher expected portfolio returns and correspondingly to reduce consumption.
- Firms to reduce investment financed by retained earnings as shareholders discount dividend payments generated from future production at higher rates.
- Governments to gradually face higher debt service costs as outstanding long-term bonds mature and are rolled over in primary markets.

Increases in real equity prices driven by lower equity risk premiums induce:

- Households to reduce saving rates in response to lower expected portfolio returns and correspondingly to raise consumption.
- Firms to raise investment financed by retained earnings as shareholders discount dividend payments generated from future production at lower rates.

Credit Cycle Upturns in Other (Non-Core) Euro Area Countries:

- Successful nonfinancial corporate debt restructuring initiatives reduce loan default rates.
- Loan default rate decreases reduce credit loss rates of exposed banking sectors, which in turn reduce lending interest rates given lower risk and higher capital buffers.
- Lower bank lending interest rates translate into lower corporate loan interest rates, raising investment by firms.

Smooth Financial Liberalization and Orderly Deleveraging in China:

Increases in deposit and money market interest rate spreads driven by rises in credit risk premiums induce:

- Households to raise saving rates in response to higher deposit interest rates and expected portfolio returns and correspondingly to reduce consumption.
- Banks to gradually and partially pass through higher funding costs to firms through higher lending interest rates while eroding their profitability and capital buffers.
- Firms to reduce investment financed by retained earnings as shareholders discount dividend payments generated from future production at higher rates, and to reduce investment financed with bank loans in response to higher corporate loan interest rates.
- The government to immediately face higher debt service costs as outstanding short-term bonds mature and are rolled over in the primary market.

Decreases in real equity prices driven by rises in equity risk premiums induce:

- Households to raise saving rates in response to higher expected portfolio returns and correspondingly to reduce consumption.
- Firms to reduce investment financed by retained earnings as shareholders discount dividend payments generated from future production at higher rates.

Source: IMF staff.

(Source: IMF, 2015d, p.43)

Macroeconomic Developments and Prospects

This section provides an overview of macroeconomic fundamentals (output, employment, prices and inflation, interest rates, fiscal balance and debt, exchange rates, current account), in 2015 and projections for 2016 onwards, by country groups and selected economies.

Overview

1. Middle Term Prospects

Before turning to regional and country-specific developments, we present the analyses of two selected issues.

Growth, employment, and labor productivity in advanced economies

The relationship between growth and employment, before and after the financial crisis, reveals increased employment associated with economic growth but lower output, even when corrected for working hours, which suggests declined labor productivity.

The data in Figure 42 illustrates this development:

“(…) The first two panels show the average relationship between output growth and employment growth across countries, before and after the crisis. (…) both output growth and employment growth were much weaker in the period 2008–14 relative to the precrisis period 1995–2007. The panels also show that, on average, the same rate of output growth has been associated since the crisis with higher employment growth—but with much lower output growth rates, employment growth since the crisis has nevertheless been weaker than before the crisis. Adjusting employment growth for changes in hours worked yields the same results.

The figure’s third panel compares labor productivity growth in advanced economies—proxied by the difference between output growth and employment growth—across the periods 1995–2007 and 2008–14. It shows that while labor productivity growth still varies substantially across countries, there has been a common slowdown across virtually all countries—the only exception being Spain (the only point above the 45-degree line in the panel) (...). Again, adjusting employment growth for changes in hours worked leads to a virtually identical picture.” (IMF, 2015f, p. 10).¹⁹

“The fourth panel of the figure compares the 2014 level of unemployment with the maximum level during the period 2008–14. Although the recently elevated “employment intensity” of growth has helped reduce unemployment in a number of countries, the low rate of output growth implies that unemployment is still high and that output gaps are sizable in a number of advanced economies.” (IMF, 2015f, p. 10). (See *output gap* in the Lexicon).

Possible reasons for the labor productivity decline:

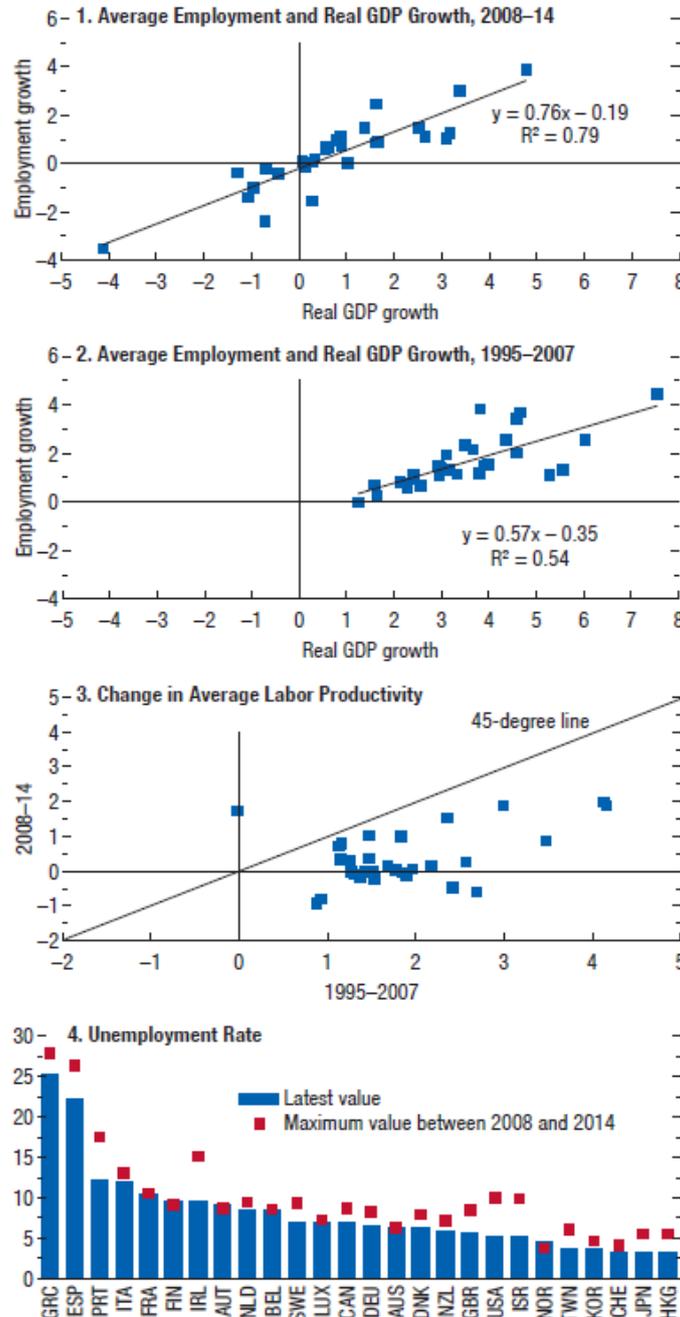
“(…) Clearly weak investment after the crisis is playing a role, but (...) slowing total factor productivity growth across large advanced economies looks so far to be the most important part of the explanation in most cases. In turn, the reasons for slowing total factor productivity growth across advanced economies are still poorly understood (...), but likely include slower human capital accumulation, a compositional shift of GDP toward services, and—at least for the United States—gradually declining positive

¹⁹ In other words, in the third panel, points below the 45-degree line mean that the difference between output and employment growth rates (the proxy for labor productivity) declined in the period 2008-2014 in comparison to the period 1995-2007.

effects on productivity from the information and communications technology revolution (...)" (IMF, 2015f, p. 10-11). (See *multifactor productivity* in the Lexicon).

Figure 42: Growth, Employment, and Labor Productivity in Advanced Economies (Percent)

Labor productivity growth in advanced economies has been much lower since the global financial crisis. The flip side is that, since the crisis, the same rate of output growth has, on average, been associated with higher employment growth (as reflected in a higher slope coefficient in the trend line). With relatively more employment-intensive growth, unemployment has decreased noticeably in economies that have experienced a sustained growth recovery.



Sources: IMF, Global Data Source database; and IMF staff calculations.
 Note: Scatter plots exclude the Czech Republic, Estonia, Latvia, Lithuania, Malta, the Slovak Republic, and Slovenia. Data labels in the figure use International Organization for Standardization (ISO) country codes.

(Source: IMF, 2015f, p.10)

Commodity prices - Oil

- The price decline

Table A. 14 shows that the average crude oil price in dollar per barrel (\$/bbl) was 104.1 in 2013, 96.2 in 2014 and 50.8 in 2015. Thus, average prices fell approximately 7.6% in 2014 and 47.2% in 2015. The chart in Table A. 16 covers the period 2004-2015, where we can see two recent episodes of sharp drop in the price of crude oil: in 2008-2009 and since mid-2014.

- Determinants

The WEO of April 2015 performed an econometric analysis of the causes of oil price decline between June 2014 and January 2015. We summarize this analysis below.

“Identifying the shocks underlying the decline is challenging. Crude oil is a storable good, and as such, a real asset: its current price depends not only on current demand and supply conditions, but also on expectations of future market conditions. These expectations in turn depend on many factors, including global economic prospects, but they also affect prospects (for instance, pessimism about future oil supply would lead to higher prices and hence lower activity). This box discusses two useful approaches to disentangling the supply and demand shocks behind the oil price collapse in 2014. Since identification of the shocks depends on the underlying model, the two sets of results present a broad picture of the likely factors behind the oil price collapse rather than a precise quantitative assessment.” (IMF, 2015e, p. 36).

“The first approach disentangles oil demand and supply shocks by examining the comovement of oil prices and stock prices. Specifically, it estimates a vector autoregression (VAR) model with daily data on oil prices (Brent crude oil variety prices) and global stock prices (Morgan Stanley Capital International [MSCI] All Country World Index) from January 2, 1991, to January 5, 2015. Demand and oil supply shocks are identified by assuming that a positive (negative) demand shock is associated with an increase (decrease) in both stock and oil prices, whereas a supply shock has opposite effects on oil and stock prices: higher (lower) oil supply reduces (increases) oil prices and increases (reduces) stock prices.(...)” (IMF, 2015e, p. 36). (See *vector autoregression* in the Lexicon).

“The results indicate that the sharp decline in oil prices since mid-2014 has been driven by both demand and supply shocks, with the relative contribution of these factors changing over time. Whereas the fall in oil prices between July and mid-October 2014 can be explained mostly by weak demand (Figure 1.1.1, panel 1), higher oil supply was the largest contributor during the mid-October 2014 to early January 2015 period, accounting for about 64 percent of the oil price decline during that time (...)” (IMF, 2015e, p. 36).

“The second approach is based on a structural VAR model for the global oil market, estimated with quarterly data from 1985 to 2014. It includes four variables: global industrial production (as a proxy for global demand conditions), global oil production, Organisation for Economic Co-operation and Development member countries’ oil inventories, and the real price of oil.(...) The identification method is similar to the one in the previous approach, with additional restrictions.(...) Prices and global demand move together when there are shocks to demand; they move in opposite directions for supply shocks. In addition, if inventory demand rises (driven, for instance, by precautionary motives), oil prices, inventories, and oil supply will move together, while global demand will move in the other direction.” (IMF, 2015e, p. 37).

“The results suggest that contemporaneous and past supply and demand surprises explain roughly two-thirds of the oil price decline between the second and fourth quarters of 2014, with supply accounting for a larger share of that two-thirds (Figure 1.1.3, panel 1). Shocks to inventory demand do not appear to explain the fall in prices during that period. Instead, a positive shock to inventory demand explains much of the observed actual increase in oil prices in the second quarter of 2014, plausibly as a result of increased geopolitical tensions in the Middle East and elsewhere at the time. Such positive shocks to inventory demand persisted through the remainder of the year, providing some offset to the negative price effects of other shocks.

The sizable unexplained component (a residual shock in the model) during 2014 is consistent with the view that the oil price collapse reflected in part expected changes in oil market fundamentals. The

model does not capture such expectations if they involve changes in patterns relative to those captured by past data.”⁶ (IMF, 2015e, p. 37).

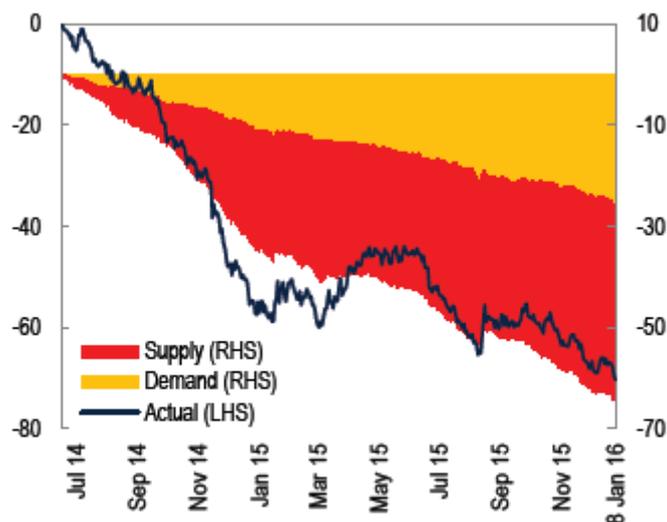
“⁶ The surge in shale and tight oil production in North America, the change in OPEC’s supply function and consequent oil price regime, expectations of production disruptions, backstop technologies reducing oil intensity, and changes in world real interest rates, among others, were not fully predictable using past patterns in the data. See Beidas-Strom and Pescatori 2014 for more details.” (IMF, 2015e, p. 37).²⁰

“In sum, the results of the two approaches suggest that both demand and supply factors played a role in the oil price collapse in 2014. They also suggest that current market conditions do not explain all of the decline. Indeed, Baumeister and Kilian (2015) emphasize the contributions of oil-market-specific developments before June 2014 to the oil price collapse, whereas the second approach presented here would suggest that changes in expectations also played a role.(...)” (IMF, 2015e, p. 38).²¹

Another study attempted to disentangle supply and demand factors, in order to explain the oil price decline since mid-2014:

“(...) recent developments in oil markets have been driven by both supply and demand factors. A decomposition of oil price movements into demand and supply factors (Baffes et al. 2015) suggests that the decline in oil prices since mid- 2014 has been predominantly (about 65 percent) driven by supply factors (...). However, pressures from softening demand have steadily increased as EMDE growth slowed, compounded in the last quarter of 2015 by mild winter temperatures in the northern hemisphere. (...)” (WB, 2016a, p. 11).

Figure 43: Contributions of supply and demand shocks to the oil price decline



Source: Baffes et al (2015).

Note: The results are based on a structural vector autoregression model with sign restrictions to identify demand and supply shocks that drive oil prices.

(Source: WB, 2016a, p.11)

Figure 43 is taken from WB, 2016a. It seems to extend the econometric analysis in Baffes et al., 2015, using data until January 8, 2016. The left-hand-side (LHS) of the scale is the percentage change of oil price.

²⁰ <http://www.imf.org/external/pubs/ft/wp/2014/wp14218.pdf>.

²¹ <http://www.journals.uchicago.edu/doi/10.1086/684160>.

Baffes et al., 2015 explains main determinants of oil prices. This work is summarized below, as it is useful for understanding recent developments and future prospects.

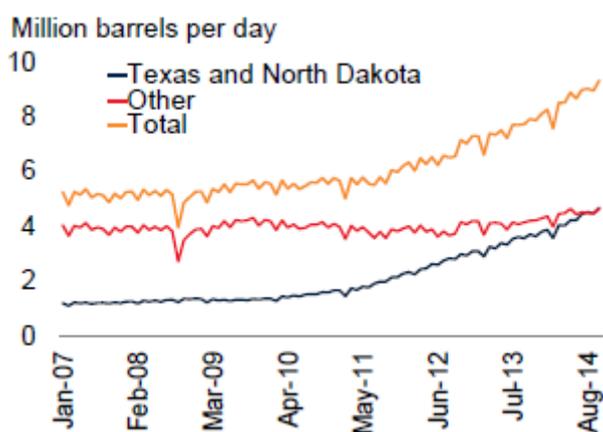
“(…) The decline was the third largest over the past 30 years, has particularly interesting parallels with the episode in 1985-86, which followed a period of strong expansion of supply from non-OPEC countries and sudden change in OPEC policy. (…)” (Baffes et al., 2015, p. 10).

“Recent developments in global oil markets have taken place against a long-term trend of greater-than- anticipated supply, especially from unconventional sources of oil production in the United States, and, to a lesser degree, Canadian oil sands and the production of biofuels (…). If oil prices stay around \$60 per barrel, roughly one-third of current oil production and more than two-thirds of the expected increase in global oil production could become uneconomical (Bank of Canada 2015). Over time, cost of unconventional oil production is likely to decline as new technologies will reduce the cost of exploration and extraction (Benes et al. 2012).” (Baffes et al., 2015, p. 11).

a) Unconventional sources of oil

“**Shale oil.** During the second half of 2014, the U.S. oil production outlook for 2014-15 was repeatedly revised upwards (IEA 2014a and 2014b). In part, this was because the post-2009 rise in oil prices and exceptionally favorable financing conditions made extracting oil from tight rock formations and tar sands profitable (…).⁴ These ‘unconventional’ oil projects differ from conventional ones in that they have a shorter life-cycle (2.5-3 years from the start of development to full extraction) and relatively low capital costs. As a result, oil supply from these sources tends to be significantly more elastic to price changes than from conventional sources, even in the short term (…).” (Baffes et al., 2015, p. 13).

**Figure 44: U.S. oil production
(Million barrels per day)¹**



¹ Crude oil production only. Texas and North Dakota are the U.S. states with the largest shale oil production. Latest observation for October, 2014.

(Source: Baffes et al., 2015, p.15)

⁴ Shale (or tight) oil is among so-called unconventional oils. Other types of unconventional oil include oil sands (in Canada); deep sea oil (with the largest known reservoirs in Mexico and Brazil); oil in Antarctica; and coal liquefaction.” (Baffes et al., 2015, p. 13).

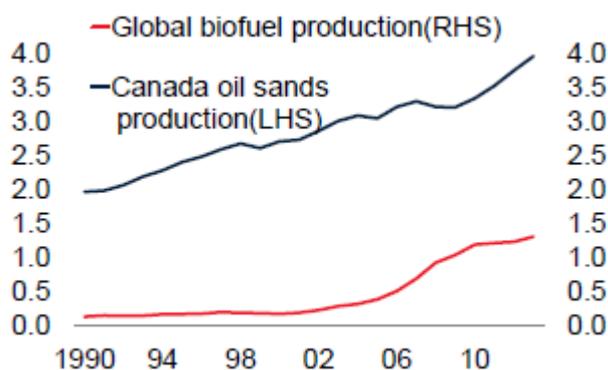
“**Oil sands.** The cost of extracting oil from the Canadian oil sands is perhaps the highest of any source such that it is often used by the oil industry as the long-run marginal cost of oil production (estimated until recently to be \$80-90/bbl in 2014 real terms). Nevertheless, Canada’s oil output reached almost 4 mb/d in 2014, up from 3 mb/d in 2004, mostly reflecting expanding extraction from oil sands.” (Baffes et al., 2015, p. 13).

b) Biofuels

Biofuels. Biofuel production has risen sharply since the mid-2000s. Accounting for about 3 percent of arable land, production reached almost 1.4 mb/d of oil equivalent in 2014, corresponding to 1.5 percent of global oil consumption. The largest producers of biofuels are the United States (44 percent of global biofuel production, mostly from maize-based ethanol), Brazil (24 percent, mostly from sugarcane-based ethanol), and the European Union (17 percent, mostly from edible oil-based biodiesel). The profitability of biofuels has been questioned, however, even at oil prices above \$100/bbl (...).” (Baffes et al., 2015, p. 13).

Figure 45: Canada oil sands and biofuel production

(LHS: Million barrels per day; RHS: Million barrels per day of oil equivalent)



(Source: Baffes et al., 2015, p.15)

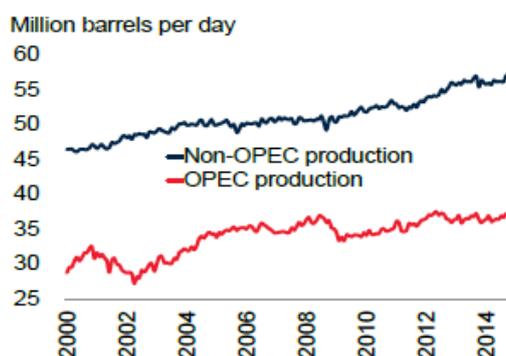
c) OPEC

“With production of about 36 mb/d—of which 30 mb/d subject to quotas – OPEC still accounts for 40 percent global oil supply and continues to have the potential to be the swing producer in global oil market if it chooses. (...)

However, as a result of this policy and rising unconventional oil production, OPEC’s share of global oil supply has been steadily eroded. To stem further losses of market share, several OPEC members began in the third quarter of 2014 to offer discounts to Asian oil importers, thus signaling OPEC’s intentions to abandon price targeting. (...).” (Baffes et al., 2015, p. 13).

Figure 46: OPEC and non-OPEC oil production

(Million barrels per day, including all types of oil: crude, biofuel-based, and liquid-based oil)
(Latest observation for November, 2014)



(Source: Baffes et al., 2015, p.15)

d) Geopolitical Developments

“(...) In the second half of 2014, it became apparent that conflict in the Middle East and Eastern Europe weighed less heavily than expected on oil supply. Libya, despite internal conflict, added 0.5 mb/d of production in the third quarter of 2014.

In Iraq, as the advance of ISIS stalled, it became apparent that oil output would not be disrupted. Markets placed considerable weight on developments in Iraq because the country was expected to account

for 60 percent of the increase in OPEC’s capacity during 2015-19 (IEA 2014). Iraq’s oil output turned out to be stable, at 3.3 mb/d during 2014, the highest average since 1979, when it reached 3.5 mb/d. Finally, the sanctions and counter-sanctions imposed after June 2014 as a result of the Russia- Ukraine conflict have had little impact on European oil and natural gas markets.” (Baffes et al., 2015, p. 14).

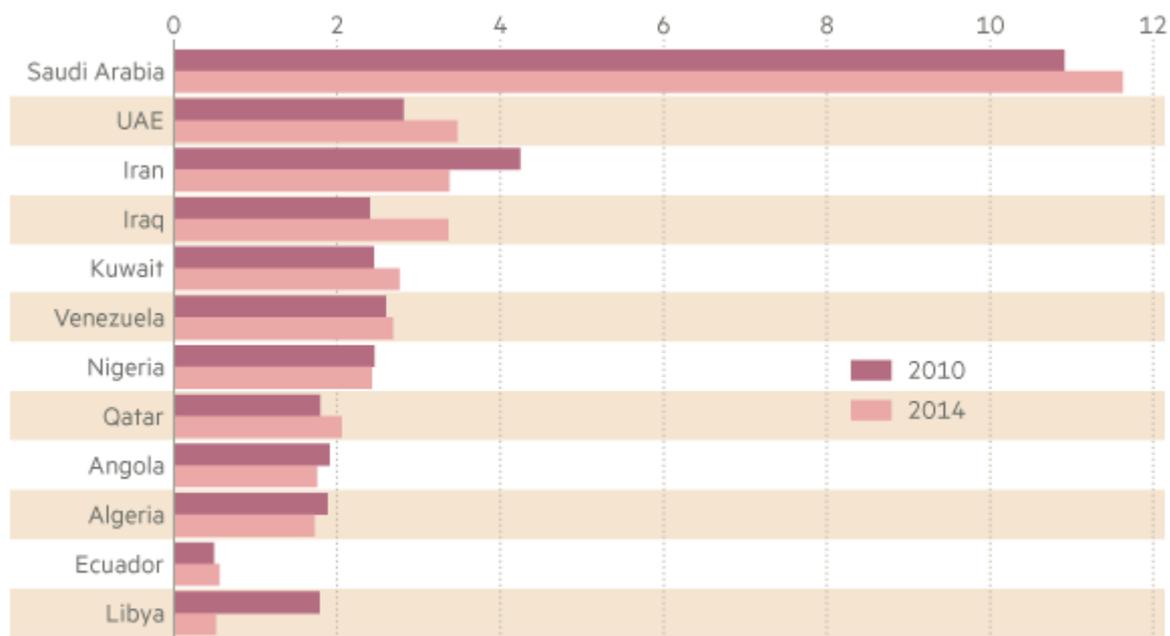
A more recent development is the lifting of all UN sanctions on Iran on January 2016, together with main EU sanctions, among them the EU embargo on Iranian oil exports that started in 2012. (U.S. restrictions on oil imports from Iran date back to 1996 and to 2007 in the case of EU).²²

Table A. 16 shows annual averages of daily crude-oil production for the world and for twenty four major producers, ordered by their production levels in 2014. Iran figures prominently in the 7th place, with about 3,6 millions of barrel per day, which represented circa of 4,1 percent of the global production in 2014. In 2011, before the EU embargo, the Iranian crude-oil production was about 4,4 millions of barrel per day.

It is not clear whether Iran will restore oil production to former levels:

“As the chart below shows, Saudi Arabia, the UAE and Iraq have upped their production over the past four years and will guard their share of an already oversupplied oil market.”²³

**Figure 47: OPEC Oil Production
(Million barrels per day)**



Source: EIA

FT

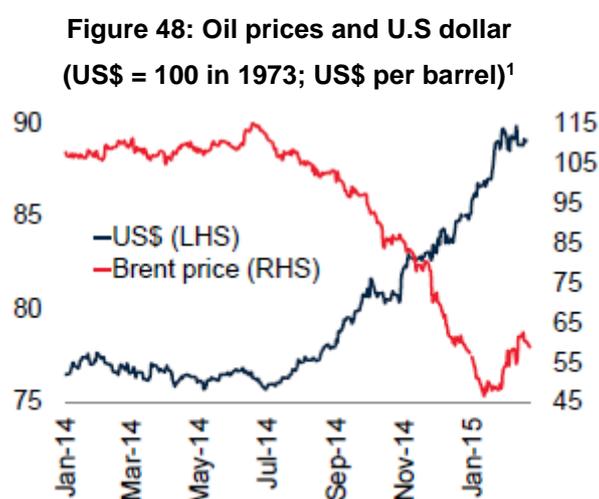
²² See: https://en.wikipedia.org/wiki/Sanctions_against_Iran#Sanctions_relief, https://en.wikipedia.org/wiki/U.S._sanctions_against_Iran and https://en.wikipedia.org/wiki/Iran%E2%80%93European_Union_relations#Sanctions; accessed on 03/21/16.

²³ <https://next.ft.com/content/325fdf4a-bec6-11e5-846f-79b0e3d20eaf>, accessed on 03/22/16.

e) Appreciation of the U.S. Dollar

“Between June 2014 and January 2015, the U.S. dollar appreciated by more than 10 percent against major currencies in trade-weighted nominal terms (...). Typically, a broad-based appreciation of the U.S. dollar raises the local currency cost of oil in countries using currencies not linked to the U.S. dollar. The effect of a stronger dollar, then, is weaker oil demand in those countries and stronger supply from non-U.S. dollar producers. Empirical estimates of the size of the U.S. dollar effect cover a wide range: the high estimates suggest that a 10 percent appreciation is associated with a decline of about 10 percent in the oil price, whereas the low estimates suggest 3 percent or less (Zhang et al. 2008; and Akram 2009). Frankel (2014) argues that the role of U.S. dollar appreciation—triggered by diverging monetary policies in the United States, Euro Area, and Japan—was an important contributor to the latest decline in commodity prices.⁵” (Baffes et al., 2015, p. 14).

⁵ Baumeister and Kilian (2015) argue that movements in the U.S. dollar have no independent impact on the oil price.” (Baffes et al., 2015, p. 14).



¹“US\$” is the nominal effective exchange rate of the U.S. dollar against a trade-weighted basket of major currencies. Latest data for December 26, 2014. . (See *effective exchange rate* and *real exchange rate* in the Lexicon).

(Source: Baffes et al., 2015, p.12)

f) Speculative Demand and Inventory Management

“Speculation in oil markets typically takes three forms: (i) changes in inventories on expectations of changing market conditions; (ii) financialization of commodities as assets under management of commodity-based funds grew from \$40 billion in the early 2000s to \$300 billion in 2012 (Baffes and Haniotis 2010; Verleger 2009; Smith 2012; Soros 2008; and Masters 2008); and (iii) outright market manipulation.⁶”

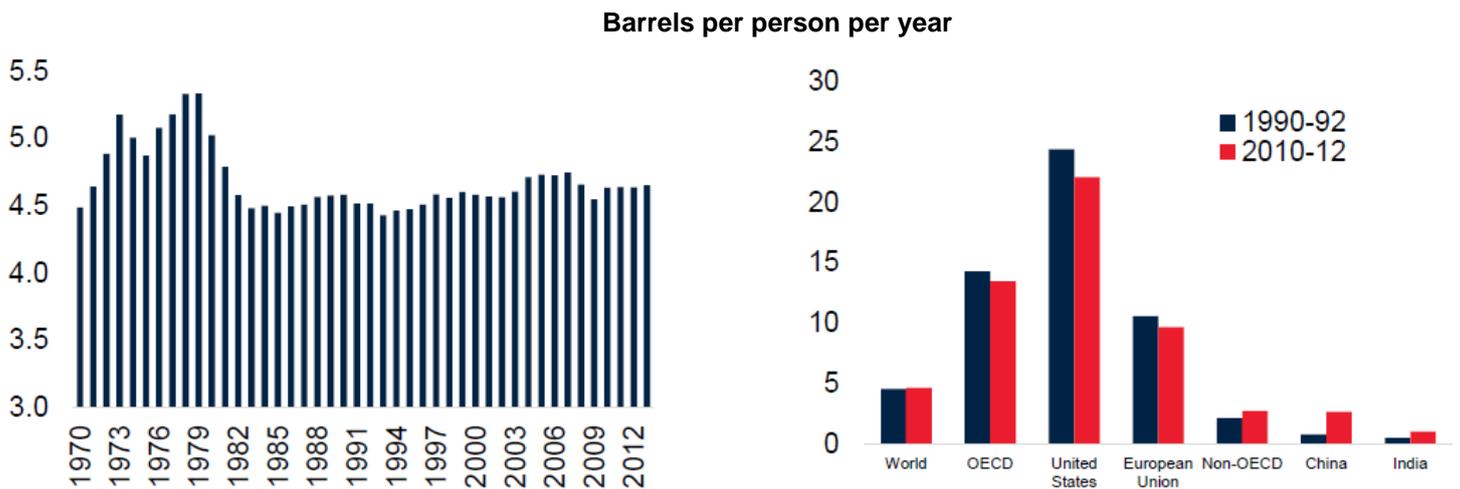
Between January and September 2014, crude oil inventories in OECD countries increased by almost 6 percent. While large inventories are typically associated with surplus market conditions (in turn leading to lower prices), sometimes they may be associated with speculative demand. For example, oil price increases of \$5-14 per barrel just before the 2008 crisis (Kilian and Lee 2014) and up to one-quarter of the forecast error variance in oil prices during 2003-12 (Beidas-Strom and Pescatori 2014a) have been attributed to speculative demand. Speculative demand shifts also played a role during oil price shock episodes in 1979, 1986 and 1990 (Kilian and Murphy 2014). However, there is not yet broad agreement on the role of speculation and changes in inventories in the 2014-15 oil price drop (Beidas-Strom and Pescatori 2014b; Baumeister and Kilian 2015).” (Baffes et al., 2015, p. 14).

“⁶ There is thus far little consensus in the literature on the degree to which financialization of oil markets affects prices, with Soros (2008) and Masters (2008) arguing that it does and Verleger (2009) and Smith (2012) claiming the opposite.” (Baffes et al., 2015, p. 14).

e) Oil Consumption and Related Demand

“Global per capita oil consumption has remained broadly stable at 4.7 barrels per year over the past three decades, with diverging trends between advanced and developing countries. (...)” (Baffes et al., 2015, p. 18).

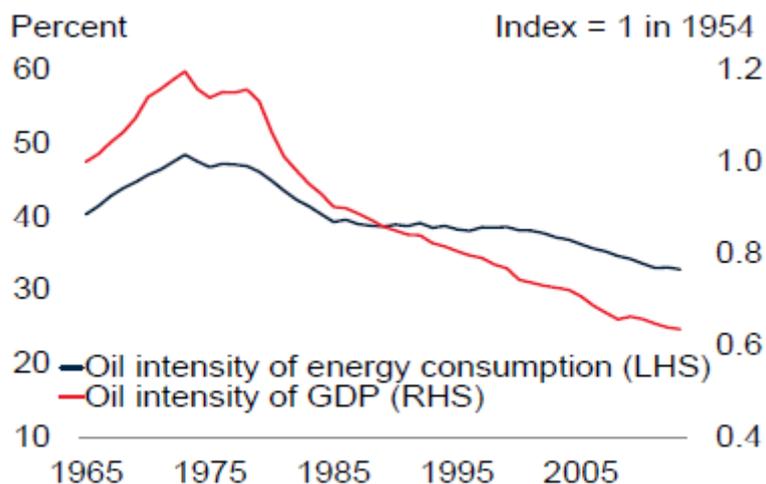
Figure 49: Oil Consumption Per Capita – Global and by Main Regions and Countries



(Source: Baffes et al., 2015, p.18)

“Oil demand forecasts have been downgraded on several occasions as global growth repeatedly disappointed since 2012. This has reflected slowdowns in large emerging markets, since their economic activity tends to be more oil-intensive than that in developed countries. For example, while a 1 percent increase in real GDP among OECD countries is estimated to raise oil demand by 0.5 percent, a similar increase in non-OECD countries could raise oil demand twice as much (Fournier et al. 2013). Underneath these short-term growth disappointments runs a longer-term trend decline in the average oil intensity of global GDP, which has almost halved since the 1970s. (...)” (Baffes et al., 2015, p. 13).

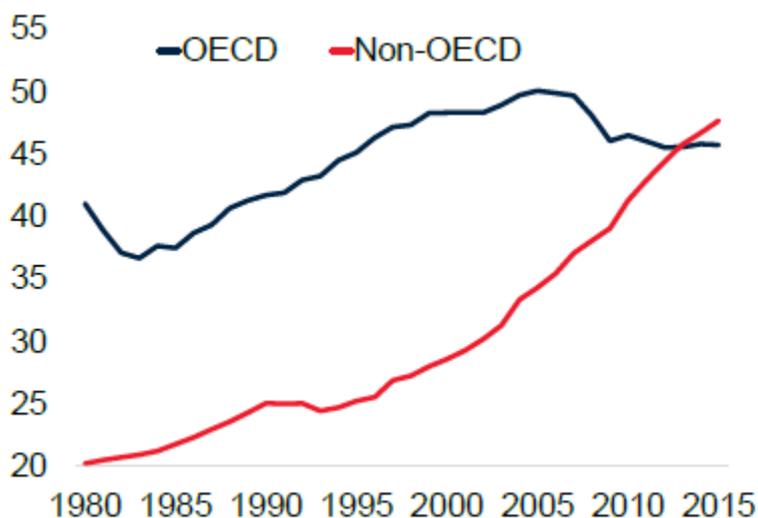
Figure 50: Oil intensity of GDP and energy consumption



(Source: Baffes et al., 2015, p.15)

Oil intensity of real GDP measures as oil consumption relative to real GDP, index at 1 in 1954. Oil intensity of energy consumption measured as oil consumption in percent of total energy consumption. Latest observation for 2013.

Figure 51: Oil Consumption - OECD and non-OECD
(Million barrels per day)



(Source: Baffes et al., 2015, p.15)

- Latest Developments and Expectations

“(…) For the year, crude oil prices averaged \$50.8/bbl, down 47 percent from 2014 and the lowest annual level since 2004. From November 2015, oil prices declined steadily, slipping below \$30/ bbl in mid-January in a slide that appears somewhat stronger than warranted by fundamentals. Weak oil prices reflected continued ample supply from non- OPEC producers, expectations of an imminent expansion of Iranian exports as sanctions were lifted somewhat earlier than expected, high stocks, weakening growth prospects in major oil-importing economies, and OPEC’s continued resolve to defend market share. (…)” (WB, 2016a, p. 19).

Figure 52: Crude oil prices, daily



Source: Bloomberg.

Note: Last observation is January 22, 2016.

(Source: WB, 2016a, p.19)

“(…) As many non-OPEC producers sustain losses at oil prices below \$40/bbl, such production cuts are expected to accelerate in 2016 whereas OPEC production is expected to rise.” (WB, 2016a, p. 19).

“Global oil consumption has faced two offsetting pressures: weakening real income growth and sharply lower prices. While weakening growth, especially in emerging market and developing countries, has weighed on consumption, the sheer magnitude of the oil price decline—two-thirds of which due to a supply shock—has encouraged consumption. On balance, consumption growth reached a five-year high at 1.8 percent in 2015, despite some weakening in the fourth quarter to 1.1 percent as a result of lower heating oil consumption in OECD countries amidst mild winter weather in the northern hemisphere (…)” (WB, 2016a, p. 19).

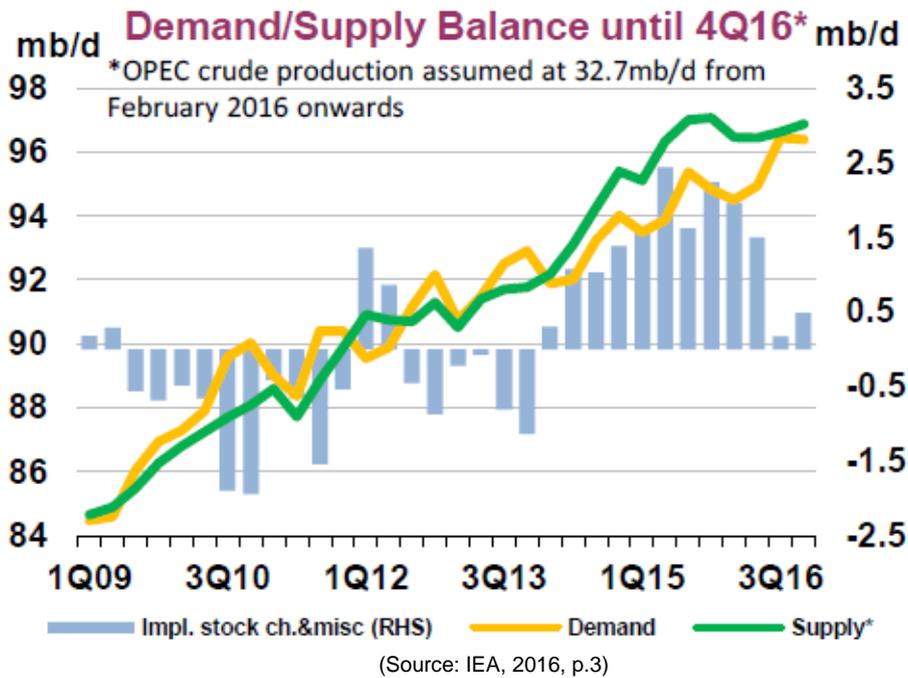
“Crude oil prices spiralled lower during January, with brimming stockpiles pushing global benchmarks below \$30/bbl. Markets edged higher in early February on suggestions of possible discussions to coordinate a global cut in production. ICE Brent was last trading at \$33.93 /bbl, while NYMEX WTI was at \$30.65/bbl.” (IEA, 2016).

The International Energy Agency (IEA), in its latest Oil Market Report (OMR), discusses five drivers currently mentioned when thinking about short run perspectives for oil prices (IEA, 2016, p. 3):

1. “Persistent speculation about a deal between OPEC and leading non-OPEC producers to cut output appears to be just that: speculation. (…) the likelihood of coordinated cuts is very low.”;
2. “Another widely-held view is that OPEC production, other than Iran, will not grow as strongly in 2016 as it did in 2015. Although it is still early in the year, Iraqi output in January reached a new record and it is possible that more increases could follow. Iran has ramped up production in preparation for its emergence from nuclear sanctions and preliminary data suggests that Saudi Arabia’s shipments have increased. (…);”
3. “Another driver of bullishness is that oil demand growth will receive a boost from the collapse in oil prices to below \$30/bbl. We retain our view that global oil demand growth will ease back considerably in 2016 to 1.2 mb/d – at 1.2% still a very respectable rate – but our analysis so far sees no evidence of a need to revise it upwards. Estimates by the International Monetary Fund that global GDP growth in 2016 will be 3.4% followed by 3.6% in 2017 is heavily caveated with risks to growth in Brazil, Russia and of course slower growth in China. Economic headwinds suggest that any change will likely be downwards.”;
4. “A factor that helped sentiment is the recent fall in the value of the US dollar against some currencies and the perception that this reduces the cost of imported oil. Although it is widely believed that interest rate hikes in 2016 in the United States and the United Kingdom are increasingly unlikely, the dollar is still likely to remain strong as it benefits from its safe haven status with other economies faring relatively worse.”;
5. “The expected fall in non-OPEC output is another driver of possibly higher prices later this year. Our current assumption is that total non-OPEC output will fall by a net 600 kb/d in 2016. The number could be higher of course and many senior international oil company figures have said so but there is a lingering feeling that the big fall-off in production from US shale producers is taking an awful long time to happen. Perhaps resilience still has some way to go.”

“In this report we suggest that the surplus of supply over demand in the early part of 2016 is even greater than we said in last month’s OMR. On the assumption – perhaps optimistic - that OPEC crude production is flat at 32.7 mb/d in Q116 there is an implied stock build of 2 mb/d followed by a 1.5 mb/d build in Q216. Supply and demand data for the second half of the year suggests more stock building, this time by 0.3 mb/d. If these numbers prove to be accurate, and with the market already awash in oil, it is very hard to see how oil prices can rise significantly in the short term. In these conditions the short term risk to the downside has increased.” (IEA, 2016, p. 3).

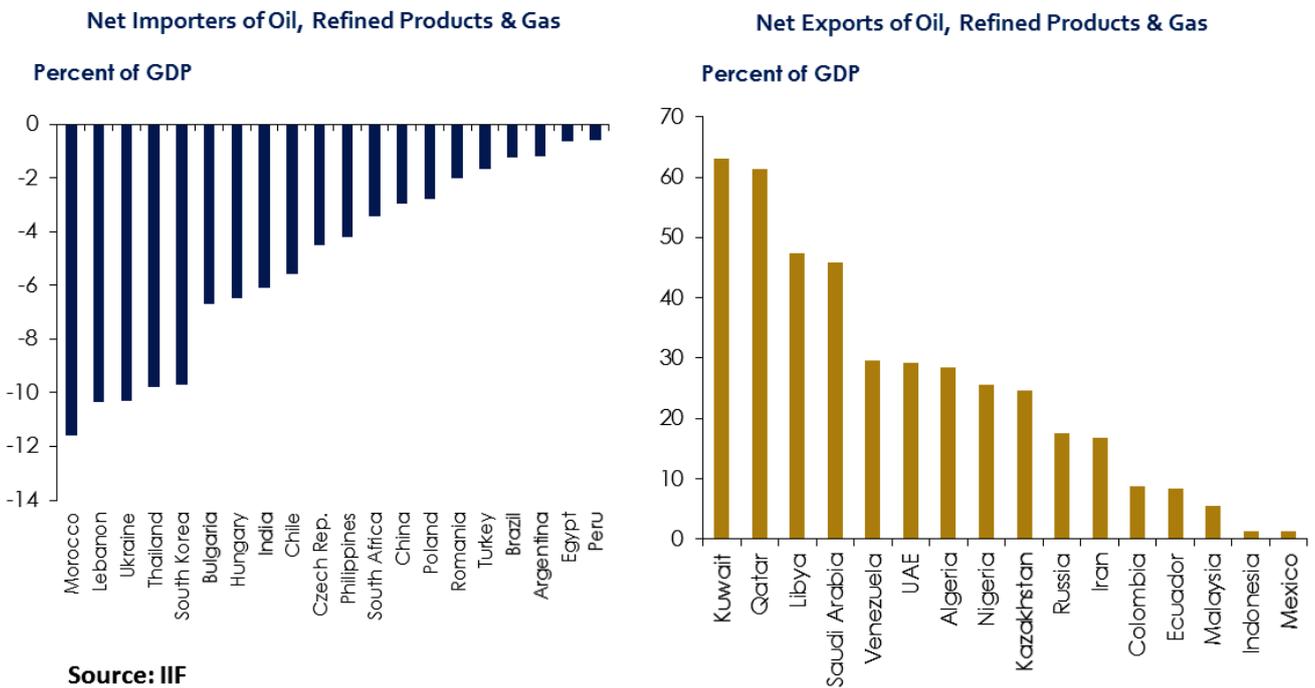
Figure 53: Oil – Demand, Supply and Implied Stocks



- Oil Price Decline - Winners and Losers

With the exception of Czech Rep. and South Korea, the chart below pictures net exporters and importers within the EMDE group.²⁴

Figure 54: Oil Prices – Winners and Losers



²⁴ We could not retrieve the original chart from the Institute of International Finance (IIF) in order to check out the date, since some information requires membership. The chart was posted on March 2015 up a blog in the link above. We believe it is related to the drop of oil prices from June 2014 onwards.

2. The data in the statistical appendix

The Statistical Appendix provides relevant data about the macroeconomic fundamentals and we briefly outlined its tables below. They were separated from tables and figures that appear along the text, because they should appear recurrently in future editions of the survey.

Table A. 1 presents the classification of economic groups and their shares in aggregate GDP, exports and population.²⁵ Table A. 2 contains the classification of subgroups within the 'Advanced Economies' group. Table A. 3 provides the subgroups within the 'Emerging Market and Developing Economies' group, it classifies the countries according to their 'Net External Position' (creditor/debtor) and it indicates those countries that are 'Heavily Indebted Poor Countries' and, among them; the countries that reached the 'completion point'.²⁶ Finally, Table A. 3 also indicates the 'Low-Income Developing Countries'.

Table A. 4 presents an overview of world real GDP growth rates, by economic groups and selected countries.²⁷

Table A. 5 and Table A. 6 contain the real GDP growth rates for all (189) countries in the two economic groups, Advanced Economies and Emerging Market and Developing Economies, for which the IMF possess information.²⁸

Table A. 7 and Table A. 8 provide the inflation rates as measured by consumer prices.

Table A. 9, Table A. 10 and Table A. 11 show the public debt as a percentage of GDP, measured by the general government gross debt. (See *gross debt* in the lexicon).

Table A. 12 and Table A. 13 contain the balance on current account. (See *current account balance* in the lexicon).

Table A. 14 contains actual commodity prices and forecasts in U.S. dollars. Table A. 15 shows the actual commodity price indexes (relative to 2010) and forecasts. Table A. 16 provides an overview of prices, production and consumption of crude oil.

3. Recent Developments and Short Run Prospects

• Output

²⁵ The GDP shares, which are based on the purchasing-power-parity valuation of economies' GDP, serve to compute the world output projections of the IMF's World Economic Outlook report. (See *purchasing power parity* in the Lexicon).

²⁶ Heavily Indebted Poor Countries (HIPC) may receive assistance of the IMF and The World Bank within their joint program for debt relieve, subject to meeting the conditions summarized by the 'completion point'. For further information, see: <https://www.imf.org/external/np/exr/facts/hipc.htm>.

²⁷ Hereafter, the growth figures represent *real* GDP growth rates, unless specified otherwise.

²⁸ Table A. 4 mainly contains aggregate growth figures taken from the report WEO Update January 2016, which revised growth figures for few individual countries and their respective economic groups. Table A. 5 and Table A. 6 are from the report WEO October 2015 and contain growth figures for individual countries.

Global growth is currently estimated at 3.1 percent in 2015 and the expectations are 3.4 percent in 2016 and 3.6 percent in 2017 (IMF, 2016, p. 1).

“Growth in advanced economies is projected to rise by 0.2 percentage point in 2016 to 2.1 percent, and hold steady in 2017.” (IMF, 2016, p. 2-3).

In emerging market and developing economies, growth accounts for over 70 percent of global growth. However, in 2015 the rate declined for the fifth consecutive year. (IMF, 2016, p. 1). It is projected to increase from the rate of 4 percent in 2015, the lowest rate since the financial crisis, to 4.3 and 4.7 percent in 2016 and 2017 respectively. (IMF, 2016, p. 3).

WEO’s growth forecasts in January 2016, in comparison to October 2015:

“Overall, forecasts for global growth have been revised downward by 0.2 percentage point for both 2016 and 2017. These revisions reflect to a substantial degree, but not exclusively, a weaker pickup in emerging economies than was forecast in October. In terms of the country composition, the revisions are largely accounted for by Brazil, where the recession caused by political uncertainty amid continued fallout from the Petrobras investigation is proving to be deeper and more protracted than previously expected; the Middle East, where prospects are hurt by lower oil prices; and the United States, where growth momentum is now expected to hold steady rather than gather further steam. Prospects for global trade growth have also been marked down by more than ½ percentage point for 2016 and 2017, reflecting developments in China as well as distressed economies.” (IMF, 2016, p. 3).

- **Commodity prices**

In 2015, the estimated fall in the average crude oil price is about 47 percent. The average price in U.S. dollars of a barrel was \$50.8 in 2015, the estimated prices are \$37 (-27.2%) in 2016 and \$48 (29.7%) in 2017. (Table A. 14).

“(…) Though a decline in oil prices driven by higher oil supply should support global demand given a higher propensity to spend in oil importers relative to oil exporters, in current circumstances several factors have dampened the positive impact of lower oil prices. First and foremost, financial strains in many oil exporters reduce their ability to smooth the shock, entailing a sizable reduction in their domestic demand. The oil price decline has had a notable impact on investment in oil and gas extraction, also subtracting from global aggregate demand. Finally, the pickup in consumption in oil importers has so far been somewhat weaker than evidence from past episodes of oil price declines would have suggested, possibly reflecting continued deleveraging in some of these economies. Limited pass-through of price declines to consumers may also have been a factor in several emerging market and developing economies.” (IMF, 2016, p. 2).

A new development regarding commodities is the sharp fall in the prices of metals:

“(…) The dynamics are similar to those of the recent adjustment in the oil market. High prices have generally led to a buildup in supply capacity that came onstream as demand began to slow. (...) developments in China play a much more important role in base metal markets than they do in the oil market. China’s share in the global consumption of these metals has increased from some 10 to 20 percent in the early 2000s to more than 50 percent currently. Some of this increase relates to the country’s role as a manufacturing hub, but it also reflects the infrastructure investment and construction boom in 2009–13 after the global financial crisis. China’s growth transition and slower metal-intensive investment growth have been instrumental in weakening base metal prices, and the trend is expected to continue during the transition. With demand growth expected to stay relatively weak under the baseline projections, prices are assumed to move broadly sideways in the near term.” (IMF, 2015f, p. 5-6).

- **Inflation**

“(…) Core inflation rates remain well below inflation objectives in advanced economies. Mixed inflation developments in emerging market economies reflect the conflicting implications of weak domestic demand and lower commodity prices versus marked currency depreciations over the past year.” (IMF, 2016, p. 2). (See *core inflation* in the lexicon).

- **Policy interest rates**

- U.S.

As expected, the Federal Open Market Committee (FOMC) – the policy arm of the FED, raised the policy rate on December 2015:

“(…) after holding the federal funds rate near zero for seven years, the FOMC raised the target range for that rate to $\frac{1}{4}$ to $\frac{1}{2}$ percent. The decision to increase the federal funds rate reflected the Committee’s assessment that there had been considerable improvement in the labor market last year and that the Committee was reasonably confident that inflation would move back to 2 percent over the medium term; thus, the criteria set out by the Committee in March 2015 had been met.” (FED, 2016, p. 2).

The rise of the federal funds rate on December 2015 was the first policy step towards the normalization process that the FED is planning to undertake, in order to restore normal monetary policy and financial market conditions.

In its last meeting, on March 16, the FOMC left the federal funds rate unchanged but lower the expectations regarding future rates.

- U.K.:

The last announcement of the Bank of England:

“The Bank of England’s Monetary Policy Committee (MPC) sets monetary policy to meet the 2% inflation target (...). At its meeting ending on 16 March 2016, the MPC voted unanimously to maintain Bank Rate at 0.5%. The Committee also voted unanimously to maintain the stock of purchased assets financed by the issuance of central bank reserves at £375 billion.”²⁹

- Euro area

“(…) At its meeting on 21 January 2016, (...) the Governing Council decided to keep the key ECB interest rates unchanged. These rates are expected to remain at present or lower levels for an extended period of time. (...)” (ECB, 2016, p. 4).

On March 16, 2016, the level of the three ECB policy rates were set to (in annual percentages): a) 0.25 for overnight credit to banks; b) 0 for the “interest rate on the main refinancing operations (MRO), which provide the bulk of liquidity to the banking system”; c) -0.40 for overnight deposits.³⁰

Regarding the ECB provision of liquidity for the economy:

“(…) The decisions taken in early December to extend the monthly net asset purchases of €60 billion to at least the end of March 2017, and to reinvest the principal payments on maturing securities for as long as necessary, will result in a significant addition of liquidity to the banking system (...)” (ECB, 2016, p. 4).

In the last ECB meeting, on March 2016, “(...) the Governing Council decided to expand the monthly purchases under the APP from €60 billion to €80 billion (...)” (ECB, 2016a, p. 5).

- Japan

²⁹ <http://www.bankofengland.co.uk/publications/Pages/news/2016/003.aspx>, accessed on 03/19/16.

³⁰ <https://www.ecb.europa.eu/stats/monetary/rates/html/index.en.html>, accessed on 03/19/16.

In Japan, the central bank decided, on March 2016 (p. 2):³¹

“(…) to continue applying a negative interest rate of minus 0.1 percent to the Policy-Rate Balances in current accounts held by financial institutions at the Bank.”

Besides the ECB and Japan, other three central banks (Denmark, Sweden and Switzerland) currently set negative interest rates for bank deposits at the central bank, due to below target inflation rates and to avoid local currency appreciation.³²

In other selected advanced economies:

“(…) policy rates have been reduced in commodity exporters (Australia, Canada, New Zealand) and in Korea, and Sweden has adopted and subsequently expanded quantitative-easing measures. (…)” (2015f, p. 7-8).

In emerging markets and developing economies:

“(…) Nominal policy rates have been reduced in China and other countries in emerging Asia (notably India) and in Russia, after the very sharp increase in December 2014. In contrast, because of increasing inflation, policy rates have risen further in Brazil, while in the rest of the region they have been stable or declining, reflecting the weakness in domestic demand.” (2015f, p. 8).

The IMF provides a summary of policy rates for selected G-20 economies:³³

**Table 7: Selected G20 Economies – Central Bank Policy Rate
(Percentage per annum)**

	Q1 2015	Q2 2015	Q3 2015	Q4 2015
Australia	2.25	2.00	2.00	2.00
Brazil	12.75	13.75	14.25	14.25
Euro Area	0.05	0.05	0.05	0.05
Indonesia	7.50	7.50	7.50	7.50
Korea, Republic of	1.75	1.50	1.50	1.50
Mexico	3.00	3.00	3.00	3.25
Russian Federation	14.00	11.50	11.00	11.00
Saudi Arabia	0.25	0.25	0.25	0.50
South Africa	5.75	5.75	6.00	6.25
Turkey	7.25	7.25	7.25	7.25
United Kingdom	0.50	0.50	0.50	0.50
United States	0.13	0.13	0.13	0.38

(Source: <http://data.imf.org/?sk=5477ad05-460d-4c91-9690-11e99b1ed935&slid=1390030109571>, accessed on 03/19/16)

³¹ http://www.boj.or.jp/en/mopo/mpmdeci/state_2016/index.htm/, accessed on 03/19/16.

³² <http://www.goldmansachs.com/our-thinking/pages/macroeconomic-insights-folder/negative-interest-rates-101/img-02-slide.pdf>, accessed on 03/26/16.

³³ There are commercial websites that compile policy interest rates of several central banks around the world. See, for instance: <http://www.centralbanknews.info/p/interest-rates.html> and <http://www.global-rates.com/interest-rates/central-banks/central-banks.aspx>.

- **Exchange rates**

The IMF provides a report about exchange rate arrangements and (capital) exchange regulations. The last report can be found at:

<https://www.imf.org/external/pubs/cat/longres.aspx?sk=41643>.

The Bank for International Settlements (BIS) computes *effective exchange rate* (EER) indices for 61 economies. They provide information on the evolution of average terms of trade between a country and its trade partners, in nominal terms. The last table available covers the period 2010-2015: http://www.bis.org/statistics/eer/tables_i.pdf.³⁴

In regarding *real exchange rates*, the data is scarce, as its computation is more involving. In concerning China and developments from the last year:

“(...) Despite its 4 percent adjustment with respect to the U.S. dollar, the renminbi remains some 10 percent stronger than its 2014 average in real effective terms. More generally, exchange rate movements across floating-rate currencies over the past year have reflected to an important extent large variations in underlying fundamentals, such as expected demand growth at home and in trading partners, declines in commodity prices, and country-specific shocks. For instance, countries with weakening growth prospects and worsening terms of trade are facing currency depreciation pressures as part of global adjustment. (...)” (IMF, 2015f, p. 7).

Next, in the last two subsections (Emerging Market and Developing Economies, Advanced Economies) of this survey, we present macroeconomic prospects by economic groups and selected countries.

The economic groups and the lists of countries that form them are in Table A. 1 - Table A. 3 in the Statistical Appendix.

We chose to discuss 15 countries individually, which are large economies and part of the G-20 group: Australia, Brazil, Canada, China, France, Germany, India, Italy, Japan, Mexico, Russia, South Africa, Spain, U.K. and U.S.

Table 9 - Table 21 contain the 2016-2017 forecasts for subgroups and countries in the group Emerging Market and Developing Economies. Table 23 - Table 34 contain the corresponding forecasts for Advanced Economies. The tables are placed at the end of the corresponding subsection.³⁵

Table 35 - Table 38, placed at the end of subsection Advanced Economies, contain market expectations for the policy interest rates determined by the FED, ECB, Bank of England and Bank of Japan respectively, in addition to yields of government bonds.

³⁴ See: <http://www.bis.org/statistics/eer.htm?m=6%7C187>.

³⁵ The forecasts sources are public and private institutions. Private institutions were chosen among largest corporations in their category, upon free access to data.

Emerging Market and Developing Economies

Commonwealth of Independent States

“(…) Other economies of the Commonwealth of Independent States are caught in the slipstream of Russia’s recession and geopolitical tensions, and in some cases affected by domestic structural weaknesses and low oil prices; they are projected to expand only modestly in 2016 but gather speed in 2017.” (IMF, 2016, p. 3).

Russia

“Since Q1 2014, Russia has faced a political crisis and a sharp loss of market confidence, as a result of the annexation of Crimea, its continued involvement in the conflict in east Ukraine, and the ensuing response of Western nations in the form of sanctions against it. In H2 2014, sharply falling global oil prices adversely impacted Russian exports and government revenues, which was exacerbated by an equally sharp depreciation of the RUB. The economic fall-out has been severe. (...)”³⁶

- Growth

The share of oil and gas sectors in Russia’s GDP:

“(…) According to the estimate produced by Standard and Poor’s, the oil and gas sectors account for some 20% to 25% of Russian GDP. (...)”³⁷

Figure 55 shows the trade structure of Russia, elaborated by Euler Hermes, from a free database (Chelem) that is provided by CEPII - a French research center in international economics.³⁸

Figure 55: The Trade Structure of Russia

By destination/origin (% of total)

Exports	Rank			Imports
Germany	9%	1	18%	China
China	8%	2	13%	Germany
Japan	4%	3	5%	Belarus
Netherlands	4%	4	4%	Italy
Turkey	4%	5	3%	Ukraine

By product (% of total)

Exports	Rank			Imports
Crude Oil	28%	1	6%	Cars And Cycles
Refined Petroleum Products	20%	2	5%	Engines
Natural Gas	17%	3	4%	Miscellaneous Hardware
Non Ferrous Metals	4%	4	4%	Pharmaceuticals
Iron Steel	3%	5	4%	Electrical Apparatus

Source: Chelem (2014)

(Source: <http://www.eulerhermes.com/mediacenter/Lists/mediacenter-documents/Country-Report-Russia.pdf>, accessed 04/10/16)

³⁶ <http://www.eulerhermes.com/mediacenter/Lists/mediacenter-documents/Country-Report-Russia.pdf>, p. 2, accessed 04/10/16.

³⁷ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p. 18, accessed 04/10/16.

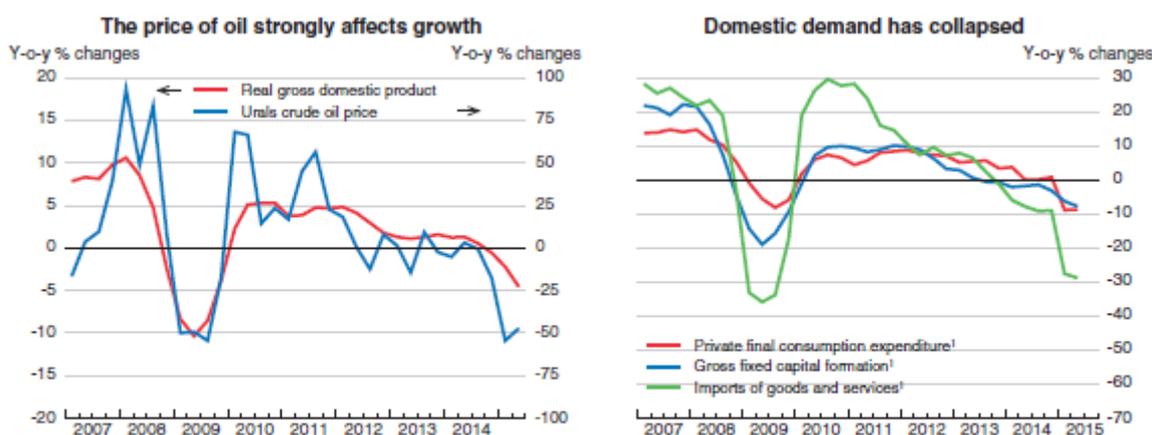
³⁸ See: <http://www.cepii.fr/%5C/anglaisgraph/bdd/chelem.htm>.

We see that crude oil, petroleum products and natural gas accounted for 65 percent of total Russian exports in 2014.

Growth, investment and consumption in 2015:

“A preliminary estimate indicates real GDP declined by -3.7% in 2015. The strongest downturn came in gross capital formation (-18.3%), reflecting a -7.6% fall in fixed investment and a sharp drop in inventories which subtracted -3.3ppps from full-year growth as companies sold off stocks in the wake of diminishing demand for their products. Private consumption plunged by -10.1% as households were hit by the sharp RUB depreciation, falling real wages and a reduction in working hours. Government consumption was down by -1.8%. (...)”³⁹

Figure 56: Russia – Oil Prices, Growth and Domestic Demand



1. In volume.

Source: OECD Economic Outlook 98 database; and Thomson Reuters (2015), Datastream Database.

StatLink  <http://dx.doi.org/10.1787/888933296463>

(Source: <http://www.oecd.org/economy/russian-federation-economic-forecast-summary.htm>, accessed 04/10/16)

Growth prospects in the short run:

“(...) The outlook for 2016 remains dismal against the backdrop of the renewed falls in oil prices and the RUB at the start of the year, though due to base effects annual GDP should decline at a more moderate pace. (...)”⁴⁰

“Initial statistics for the beginning of 2016 have confirmed that the economy is shrinking more slowly than it did in 2015. (...)”⁴¹

Growth forecasts are in the range of -3 to -1 percent in 2016 and 0 to 2.5 percent in 2017 (Table 11).

A middle-term perspective:

“Looking beyond the crisis currently sweeping Russia, what is truly alarming is the erosion of potential growth. The consensus among economists estimates Russia’s potential growth at about 1% or even 1.5%, although some estimates are closer to 0. Prior to the 2008 crisis, in contrast, Russia’s growth

³⁹ <http://www.eulerhermes.com/mediacenter/Lists/mediacenter-documents/Country-Report-Russia.pdf>, accessed 04/10/16.

⁴⁰ Idem.

⁴¹ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p. 18, accessed 04/10/16.

potential was estimated at about 7%. This downward revision is only partially due to changes in the active population. The main cause is the lack of investment and the feeble diffusion of technical progress.

Investment in productive capital has fallen far short of what is needed to support growth, a problem that has persisted for several years. (...)

Moreover, unlike many other emerging countries, Russia did not benefit from major technological transfers via FDI, notably in the non-mining sectors. Consequently, the lack of productive investment (domestic and foreign) triggered a net slowdown in Total Factor Productivity (TFP), which rose by an average of only 0.8% over the period 2007-2012, down from 4.7% in 1996-2006. TFP made a negative contribution to growth of 0.2 pp in 2014.”⁴²

The recent decline in investments:

“Investment as a whole first began to slow in Q1 2012, before contracting very sharply as of Q3 2013. In other words, the slowdown began well before the 2014 crisis, the implementation of international financial sanctions and the drop-off in oil prices. (...)”⁴³

Table 8: Russia – Total Investment ¹								
(% of GDP)								
2007	2008	2009	2010	2011	2012	2013	2014	2015 ²
25.4	24.1	17.1	21.7	24.4	23.7	21.6	19.9	18.7

¹ “Total investment (Percent of GDP)
Expressed as a ratio of total investment in current local currency and GDP in current local currency. Investment or gross capital formation is measured by the total value of the gross fixed capital formation and changes in inventories and acquisitions less disposals of valuables for a unit or sector.”.

² Estimate.

Source: <http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselser.aspx?c=922&t=1>, accessed 04/10/16.

- Employment

The IMF forecast of the total unemployment rate is 6.5 percent in 2016 and 6 percent in 2017 (Table 11).

- Inflation

The inflation rate (CPI, year average) in 2015 is 15.6 and it is expected to fall in 2016.⁴⁴ The forecasts for inflation (CPI, end of period) are in the range of 8.5 to 9.1 percent in 2016 and 6 to 7.5 percent in 2017 (Table 11).

- Policy interest rate

“(...) Monetary policy is not sufficiently accommodating to encourage companies to invest. Under the current conditions of pressure on oil prices and thus on the rouble, any cut in key interest rates looks unlikely. Thus there is not much room for monetary policy to come to the aid of economic activity, despite an easing of inflationary pressure.”⁴⁵

The policy interest rate is currently 11 percent since July 2015⁴⁶, down from 11.5 percent in Q2 2015 and 14 percent in Q1 2015 (Table 7).

⁴² <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369>, p. 19, accessed 04/10/16.

⁴³ Idem.

⁴⁴ Idem.

⁴⁵ Idem.

⁴⁶ <http://www.centralbanknews.info/p/interest-rates.html>, accessed on 04/10/16.

- Public debt

Currently, Russia cannot resort to finance its deficit at international markets, due to the international sanctions that are in place.

According to BNP Paribas, in light of the fall in federal government revenues due to oil prices:

“To contain the fiscal pressure, the Ministry of Finance has already indicated that several measures could be introduced (increases in extraction taxes, a privatisation programme, increases in the dividends paid by state-owned companies, etc.). However, despite these measures, federal government receipts could fall from 17.1% of GDP in 2015 to 13.8% in 2016, resulting in the deficit growing from 2.4% of GDP in 2015 to 4.1% in 2016. So far, the government has planned to finance virtually its entire deficit and that of other public sector bodies from the reserve fund, which stood at USD 49 billion in February. (...) The wealth fund (the other sovereign fund) is likely to have only USD 40 billion to USD 46 billion (...). The government will then have no choice but to issue debt. At present, liquidity in the domestic market is inadequate.”⁴⁷

According to Euler Hermes:

“Russia’s fiscal position remains robust. Public debt will remain low (forecast at 20% of GDP in 2016) even if the fiscal deficit could rise to -4% of GDP in 2016. Moreover, two Sovereign Wealth Funds worth about USD121bn (11.6% of GDP) will provide resources to finance the fiscal deficit and further anti-crisis measures in 2016.”⁴⁸

The forecasts for the general government gross debt as a percentage of GDP are in the range of 19.4 to 21 in 2016 and 21.9 to 22.4 in 2017 (Table 11).

- Financial health of banks

Euler Hermes:

“In late 2014 a RUB830bn bank capital support programme was launched, aimed at supporting large banks. It has helped to stabilise the banking system and – although profitability and capital will remain under pressure – the IMF believes that the programme is sufficiently large. A credit crunch has been avoided so far and non-performing loans have increased only slightly to 8% of total loans in 2015 from 6% in 2013. Russian authorities continue to have the resources to avoid a systemic crisis and we are not concerned at present about their resolve to provide support. However, smaller banks remain at risk of bankruptcy or losing their licence: the number of banks fell to 733 at end-2015 (923 at end-2013).”⁴⁹

BNP Paribas:

“The financial position of the banks worsened significantly in 2015. Profits declined by more than 67% due in particular to the sharp rise in provisions to cover the increase in non-performing loans and those considered at risk (which according to ratings agency Standard & Poors account for more than 17% of loans). The overall solvency ratio of the whole banking sector was only 8.5% in December 2015, whereas it was 13.2% five years ago. (...)”⁵⁰

⁴⁷ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p. 18, accessed 04/10/16.

⁴⁸ <http://www.eulerhermes.com/mediacenter/Lists/mediacenter-documents/Country-Report-Russia.pdf>, p. 2, accessed 04/10/16.

⁴⁹ Idem.

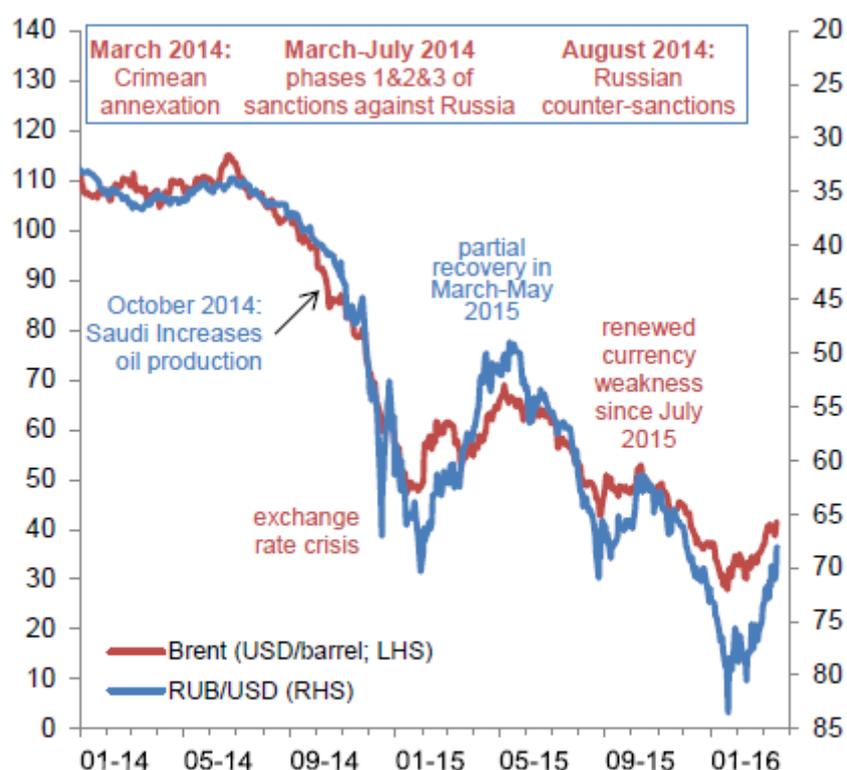
⁵⁰ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p. 19, accessed 04/10/16.

- Exchange rate

“During 2014, the RUB fell by -72% against the USD (-51% against the EUR), despite heavy foreign exchange (FX) interventions by the Central Bank of Russia (CBR). In 2015, the RUB remained very volatile and, in the second half of the year, depreciated once again strongly, mainly due to the renewed slump in global oil prices, but also because the CBR discontinued large-scale FX interventions in order to halt the decline in its FX reserves, which indeed have stabilised at around USD320bn since mid-2015. At the end of 2015, the RUB was down by another -30% y/y against the USD (though unchanged y/y against the EUR). In early 2016, the RUB’s downtrend continued before a moderate recovery began in mid-February, both in line with oil price movements. Euler Hermes expects the course of the RUB will continue to depend mainly on oil price developments. Changes on the economic sanction fronts and CBR actions will have only limited impact on the exchange rate”⁵¹

The high correlation between oil prices and the RUB/USD exchange rate:⁵²

Figure 57: Brent Oil Price, Russia’s Political Crisis and RUB/USD Exchange Rate



Sources: IHS, Euler Hermes

(Source: <http://www.eulerhermes.com/mediacenter/Lists/mediacenter-documents/Country-Report-Russia.pdf>, accessed 04/10/16)

- Current account balance

“Net exports mitigated the overall contraction of GDP somewhat (...). However, this was the result of a collapse in real imports by -25.6% while real exports still grew by a modest +3.1%, thanks to the weakened RUB. (...)”⁵³

⁵¹ <http://www.eulerhermes.com/mediacenter/Lists/mediacenter-documents/Country-Report-Russia.pdf>, p. 2, accessed 04/10/16.

⁵² The right axis shows values of the RUB/USD exchange rate in a descending order, as increasing values of that rate means that the ruble is depreciating against the dollar.

⁵³ <http://www.eulerhermes.com/mediacenter/Lists/mediacenter-documents/Country-Report-Russia.pdf>, p. 2, accessed 04/10/16.

The current account surplus increased to 5.4 percent of GDP in 2015⁵⁴, in contrast to 3.2 percent in 2014 (Table A. 13).

The forecasts for the current account balance as a percentage of GDP are in the range of 2.8 to 5.4 in 2016 and 5.7 to 7.4 in 2017 (Table 11).

- Foreign reserves

“(…) FX reserves dropped from USD470bn at end- 2013 to a low of USD308bn in April 2015, though they have stabilised at around USD320bn thereafter. While current FX reserves are still comfortable in terms of import cover (13 months) or in relation to external debt falling due in the next 12 months (estimated at USD140bn), the future development needs to be monitored closely and is not fail safe.”⁵⁵

Emerging and Developing Europe

“Emerging Europe is projected to continue growing at a broadly steady pace, albeit with some slowing in 2016. (…)” (IMF, 2016, p. 3).

See Table A. 3 for the list of countries and their Net External Position.

See Table 12 for 2016-2017 forecasts.

Emerging and Developing Asia

China

Goldman Sacks, in a recent in-depth report about China, provides an outlook for the Chinese economy. We summarize below their main prospects for 2016 and their analysis of global economic exposure to China. Table 14 provides 2016-2017 forecasts for the Chinese economy from alternative sources.⁵⁶

- Growth

Chinese official statement about rebalancing the economy:

“As early as March 2007, then-Premier Wen Jiabao highlighted the need to rebalance the Chinese economy away from an investment-led, export driven economy toward a consumption-oriented economy when he told reporters at the National People’s Congress that ‘the biggest problem in China’s economy is that the growth is unstable, imbalanced, uncoordinated and unsustainable ... these are all pressing issues that need to be addressed as soon as possible or they will threaten China’s economic growth ... The government must boost domestic demand, open markets and promote technological innovation.’ (…)” (Goldman Sacks, 2016, p. 18).

The current state of affairs:

“We estimate that at the end of 2015, investment stood at 45.3% of GDP and private consumption at 38.2% (...). In spite of Premier Wen Jiabao’s directive, the economy has not been rebalanced: investment has increased as a share of GDP, and private consumption has decreased slightly. At 45.3% of GDP, investment is high relative to China’s own history. It also exceeds peaks

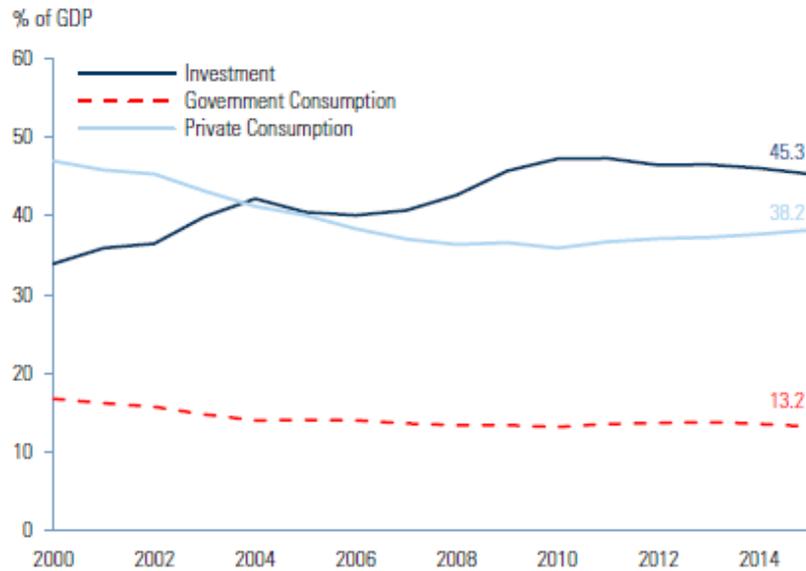
⁵⁴ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p. 18, accessed 04/10/16.

⁵⁵ <http://www.eulerhermes.com/mediacenter/Lists/mediacenter-documents/Country-Report-Russia.pdf>, p. 2, accessed 04/10/16.

⁵⁶ Before starting, we should advert that a major problem in the economic analysis of China is the quality of the official data. See a discussion in Goldman Sacks, 2016, p. 7-10.

reached by other countries, including the ‘Asian Tigers’ that pursued an investment-led and export-driven growth strategy (...)” (Goldman Sacks, 2016, p. 18). See Figure 58 and the left panel of Figure 59.

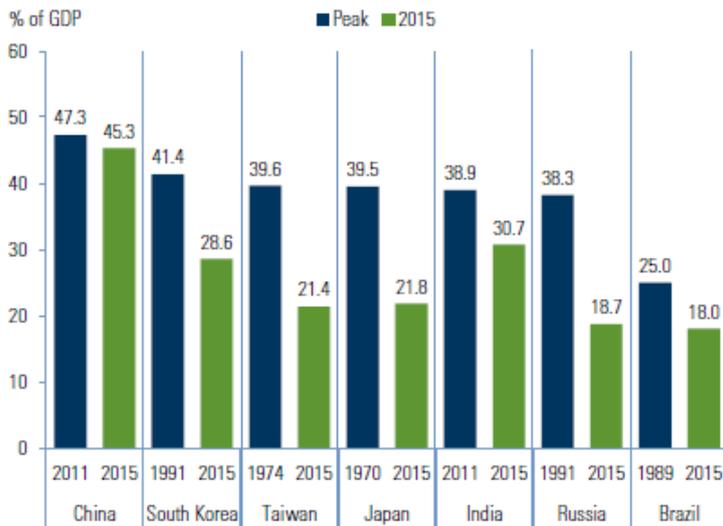
Figure 58: China – GDP by Expenditures



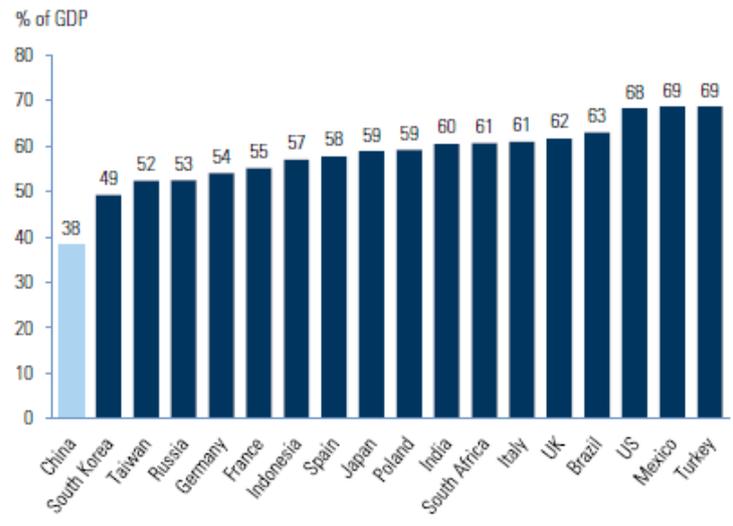
Data through 2015.
 Note: ISG estimates for 2015.
 Source: Investment Strategy Group, Datastream, NBS.

(Source: Goldman Sacks , 2016, p. 18)⁵⁷

Figure 59: China – Investment and Consumption in Comparison with Other Economies



Note: Based on data since 1960. ISG estimate for China in 2015, IMF estimates for all other countries.
 Source: Investment Strategy Group, Datastream, IMF, OECD, national statistical agencies.



Data as of 2015.
 Note: ISG estimate for China, IMF estimates for all other countries.
 Source: Investment Strategy Group, Datastream.

⁵⁷ The acronym NBS stands here for the Chinese National Bureau of Statistics.

(Source: Goldman Sacks , 2016, p. 19)

“Similarly, at 38.2%, household consumption as a share of GDP is extremely low both on an absolute basis and relative to other major emerging market and developed market countries (...)” (Goldman Sacks, 2016, p. 18). See the right panel of

Figure 59.

Nevertheless,

“Looking at the most recent data, the long-term trend may finally be reversing. Investment as a share of GDP has declined from a peak of 47.3% in 2011, and consumption has increased from a trough of 35.9% in 2010. Furthermore, net exports have decreased from 8.7% of GDP in 2007 to an estimated 3.3% in 2015. Of course, given the general quality of the data, it may well be false precision to suggest a reversal in investment and consumption trends based on changes of around two percentage points. However, we believe other data confirms an increase in consumption. For example, consumer oriented multinational companies have reported strong sales in China. (...)” (Goldman Sacks, 2016, p. 18-19).

The official target rates for 2016-2020:

“China’s stated economic goal is to double the 2010 GDP and GDP per capita by 2020, which requires an average annual real GDP growth rate of 6.5% in 2016–20. (,,)” (Goldman Sacks, 2016, p. 40).

Growth - recent trend and 2016 forecast:

“China’s growth is on a decelerating trend. (...) GDP growth has been declining since 2007, from a peak of 14.2% to 6.9% in 2015. We expect this slowdown to continue in 2016. We see China’s economy growing between 5.8% and 6.8%, which reflects a slowdown of 0.6 percentage point from 2015. (...)” (Goldman Sacks, 2016, p. 40).

Figure 60: China – Real GDP Growth



Data through 2015.

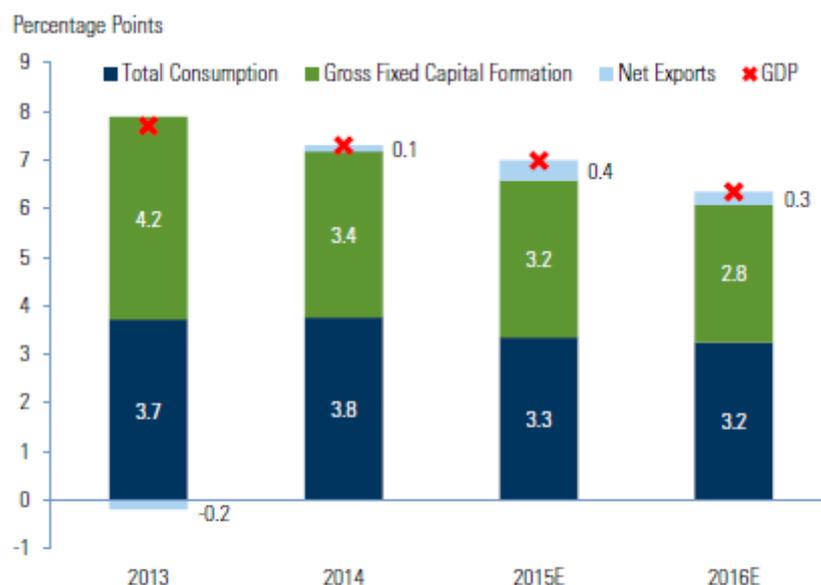
Source: Investment Strategy Group, Datastream, NBS.

(Source: Goldman Sacks , 2016, p. 40)

“Even though the midpoint of our central case scenario in 2016 is below the 6.5% minimum target, we are relatively confident that China’s GDP will grow between 5.8% and 6.8%. We assign a 75% probability to our central case, with an equal probability that growth will exceed or fall short of our range. In 2016, the probability is extremely low of a hard landing—defined as a headline GDP growth rate lower than 5% and declining (...)” (Goldman Sacks, 2016, p. 43-44).

“The slower growth rate we expect is driven by a deceleration in fixed asset investments, a more modest contribution from net exports relative to 2015 and a slight deceleration in the pace of consumption growth. (...) the deceleration in investment has been the primary driver of the slowdown since 2013 (...)” (Goldman Sacks, 2016, p. 41). See Figure 61.

Figure 61: China - Contributions to Annual Real GDP Growth



Note: ISG forecasts for 2015 and 2016.
Source: Investment Strategy Group, Datastream, NBS.

(Source: Goldman Sacks , 2016, p. 41)

The components of investment:

“Investment in China is primarily composed of manufacturing (including mining) at 33%, infrastructure at 24% and real estate investment at 22%. The growth rates in manufacturing and real estate have declined, and we expect this trend to continue. Infrastructure investment has been relatively stable and should hold steady as the government boosts growth by supporting infrastructure projects (...)” (Goldman Sacks, 2016, p. 41).

“The biggest downside risk to our view is a greater-than-expected slowdown in real estate investment. It has already slowed significantly over the last five years, declining from annualized growth rates of 30–40% in 2010 and 2011 to a 4% contraction in the September to November 2015 period (...). While regulators have eased home purchase restrictions and mortgage financing requirements, we expect the slowdown to continue through 2017.” (Goldman Sacks, 2016, p. 42).

Consumption - 2016 forecast:

“Another risk to our growth outlook is consumption. If unemployment increases or wage growth decreases, consumption growth may be lower than our forecast of 6.4%.” (Goldman Sacks, 2016, p. 43).

- Employment

Goldman Sachs contrasts the volatility of their employment index with the smoothness of the official unemployment rate:

“(...) The Goldman Sachs GIR China Employment Growth Tracker, which includes employment survey data from Purchasing Managers Indexes and ManpowerGroup, shows employment growth steadily declining since the second quarter of 2010 (...). This deterioration is in contrast to the NBS data, which shows the unemployment rate declining from 4.20% to 4.05% over

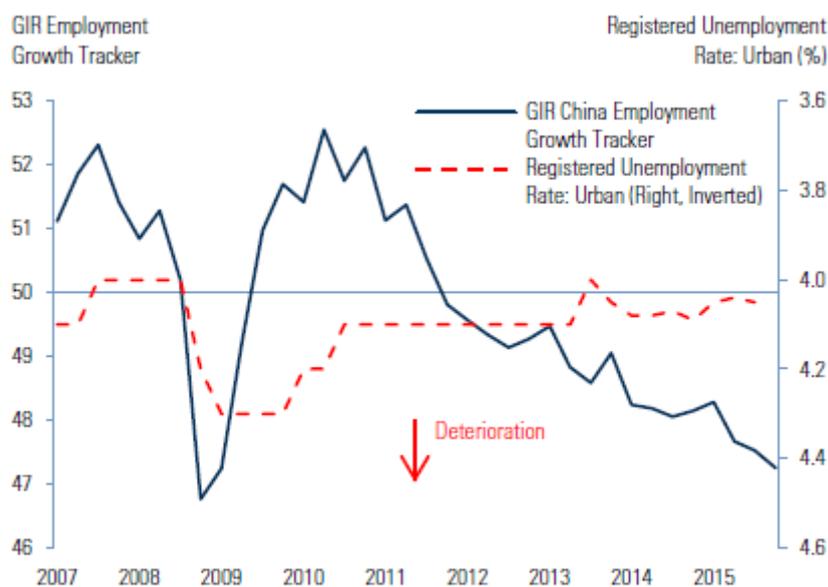
that same period. (...)" (Goldman Sacks, 2016, p. 43). See The IMF estimate of the unemployment rate in 2015 is 4.1 percent.

Figure 62.

The IMF estimate of the unemployment rate in 2015 is 4.1 percent.⁵⁸

Figure 62: China – Employment Measurements

Alternative estimates show a weakening in Chinese labor markets, in contrast to official data.



Data through Q4 2015.

Note: The GIR China Employment Growth Tracker is based on a series of high-frequency labor market indicators in China. It is presented as a diffusion index, where lower readings point to deteriorating labor market dynamics.

Source: Investment Strategy Group, Goldman Sachs Global Investment Research, NBS.

(Source: Goldman Sacks , 2016, p. 43)

Goldman Sacks refers to a NBER study that “have proposed an alternative measure which, historically, has been five to six percentage points higher than the official unemployment rate.” (Goldman Sacks, 2016, p. 43).

Sticking to their measurement, they conclude:

“While employment is weakening, (...), we do not expect any meaningful deterioration in employment that would slow the pace of consumption growth even further.” (Goldman Sacks, 2016, p. 43).

“We also expect the government to provide additional monetary and fiscal stimulus measures to maintain growth close to 6.5%, such as additional cuts to the benchmark interest rates, lower reserve

⁵⁸ The time series for the unemployment rate provided by the IMF is available at: <http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weorept.aspx?pr.x=62&pr.y=10&sy=2007&ey=2015&scsm=1&ssd=1&sort=country&ds=.&br=1&c=924&s=LUR&grp=0&a=>, accessed 04/13/16. The data source is CEIC, but we see that the level is very close to the official data.

requirement ratios and further public-private partnerships to boost investments.” (Goldman Sacks, 2016, p. 43).

- Debt

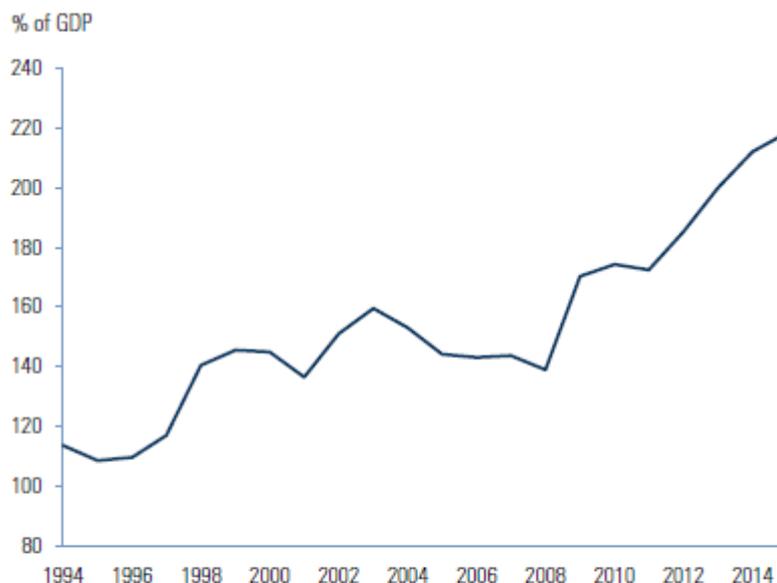
The Chinese general government gross debt is low by international standards. The estimate for 2015 is 43.2 percent of the GDP (Table A. 10). It includes the debt of local governments but not the debt of state-owned enterprises (SOE).⁵⁹

As discussed earlier (p. 19-21), the main form of financing the Chinese economy is through bank loans (Figure 13: Flow of financing to the Chinese real economy 2015) and the bank sector is dominated by the “Big Four state-owned banks”. In addition, non-financial SOE are steadily increasing their debt/assets ratio (Figure 15).

Further, “much of the debt of SOEs (...) has the implicit guarantee of the central government; it is highly unlikely that the central government will let several major SOEs default on their debt.” (Goldman Sacks, 2016, p. 21).

“(...) the rapid growth of China’s debt load is cause for concern. Debt in China has grown by double digits over the last eight years, primarily driven by debt in the nonfinancial private sector, which is composed mostly of SOEs. (...) the biggest year-on-year increase occurred in 2009, after the government responded to the global financial crisis by launching a quasi-fiscal stimulus of RMB 4 trillion (\$570 billion) in November 2008. (...) it was equivalent to 12.6% of China’s 2008 GDP. (...)” (Goldman Sacks, 2016, p. 22). See Figure 63.

Figure 63: China – Debt to GDP Ratio



Data through 2015.

Source: Investment Strategy Group, Bank for International Settlements, IMF.

(Source: Goldman Sacks , 2016, p. 22)

The concern is:

⁵⁹ See: IMF, 2015C, p. 40.

“(…) Every major country with a rapid increase in debt has experienced either a financial crisis or a prolonged slowdown in GDP growth (…). History suggests that China will face the same fate.” (Goldman Sacks, 2016, p. 22).

In conclusion:

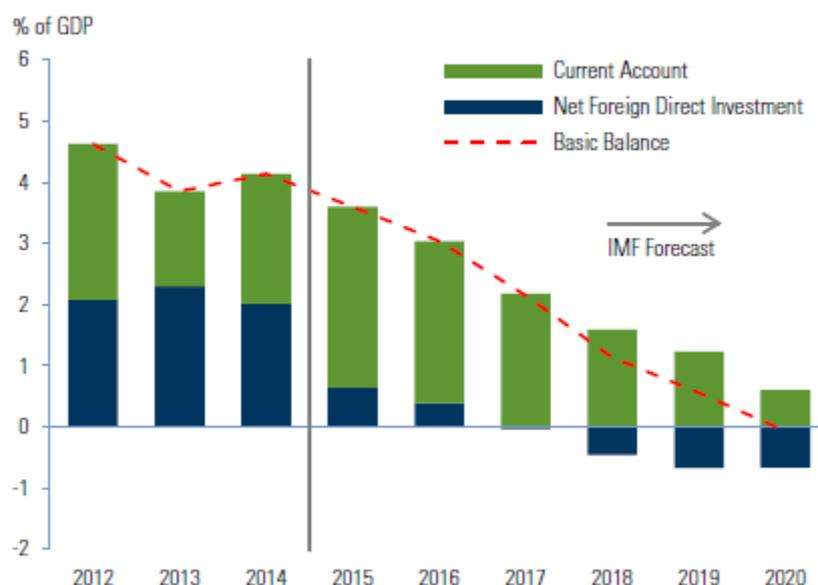
“(…) While we believe that the tipping point is not around the corner, we also recognize that China’s model of maintaining growth by increasing investments that are, in turn, largely financed by debt is not sustainable. China faces an extremely challenging balancing act: It has to slow the pace of debt growth and investments but not by so much that its economy slows down too sharply. This balancing act depends on making further progress on structural reforms to accelerate TFP growth, which would enable China to boost GDP growth without increasing investments and growing debt-to-GDP.” (Goldman Sacks, 2016, p. 23). (See *Total Factor Productivity* (TFP) in the Lexicon).

- Current account balance

“(…) we expect China to have a current account surplus and continued foreign direct investment that should allow it to replenish its high-quality foreign assets through 2019 (…). China’s 2015 current account surplus, for example, is estimated at \$337 billion and its net foreign direct investments at \$74 billion, equivalent to 3.6% of GDP. In 2016, the projected numbers are slightly lower, at \$324 billion, \$48 billion and 3% of GDP, respectively.” (Goldman Sacks, 2016, p. 44).

Figure 64: China – Current Account and Foreign Direct Investment

China’s current account surplus is expected to persist over the next several years.



Data as of October 2015.
Source: Investment Strategy Group, IMF.

(Source: Goldman Sacks , 2016, p. 44)

- Foreign reserves

“(…) Official FX reserves stood at \$3.33 trillion as of the end of December 2015, and additional reserve assets including holdings of SDR and gold bring the total to about \$3.40 trillion. Our colleagues in GIR estimate that of the total official reserves, a minimum of \$2.0 trillion is held in high-quality, relatively liquid assets.¹³³ Tao Wang of UBS also estimates \$2.0 trillion of such assets.¹³⁴ In addition to these assets, China has long-term foreign assets held by the China Investment Corporation (the sovereign wealth fund)

and by corporate subsidiaries of the State Administration of Foreign Exchange (the reserve manager). (...)" (Goldman Sacks, 2016, p. 44).

When considering the question whether China has the means to avert a hard landing in 2016, Goldman Sacks claim that:

"(...) China has a very high savings rate—the highest of any major country in the world, as discussed earlier. The public and private sectors do not have sizable external borrowings that would make them vulnerable to withdrawal of foreign capital. The country has tight capital controls and, for now, has tightened them even further. And, most importantly, China has vast foreign exchange (FX) reserves. (...)" (Goldman Sacks, 2016, p. 44).

"Clearly, China is highly unlikely to run out of resources to avert a hard landing in 2016." (Goldman Sacks, 2016, p. 44).

In order to balance the above view and look beyond 2016, see also the earlier discussion on the Chinese exchange rate and recent financial developments, on p. 25-32, and Figure 21: China - Change in foreign-exchange reserves.

Besides the prospects for 2016, Goldman Sacks analyzed two scenarios for 2016-2020:

"China has a great dilemma: either it can choose to maintain growth through fiscal and monetary stimulus and risk a credit crisis as a result of debt-to-GDP reaching unsustainable levels, or it can implement important reforms over the next five years and accept slower growth in exchange for better long-term prospects. More specifically, China can pursue one of two paths:

The Likely Path: China's 6.5% minimum growth target is achieved for a few years—maybe two to three years—through rapid investment and increased debt. Thereafter, GDP growth rates decline steadily. We call this a base case scenario because we believe this is the path most likely to be selected by policymakers.

(...)

An Alternative Path: China's leadership forgoes the 6.5% target and, instead, focuses on implementing reforms and slowing the pace of credit growth." (Goldman Sacks, 2016, p. 45).

Further details about the two scenarios, the reasons behind the likelihood of them and the structural reforms in question are in the original report. Now, we conclude the overview about China with Goldman Sacks analysis of how the slowdown of China may affect the global economy. Below is a summary of channels (exports, direct sales, banks and financial markets) and estimates of potential impacts.

- Economic exposure to China via trade

"China accounts for 13% of global exports and 10% of global imports. (...)" (Goldman Sacks, 2016, p. 11).

"(...) Its demand accounts for 50–60% of the global production of iron ore, nickel, thermal coal and aluminum, and a significant share of copper, tin, zinc, steel, cotton and soybeans (...)" (Goldman Sacks, 2016, p. 11). See Figure 65.

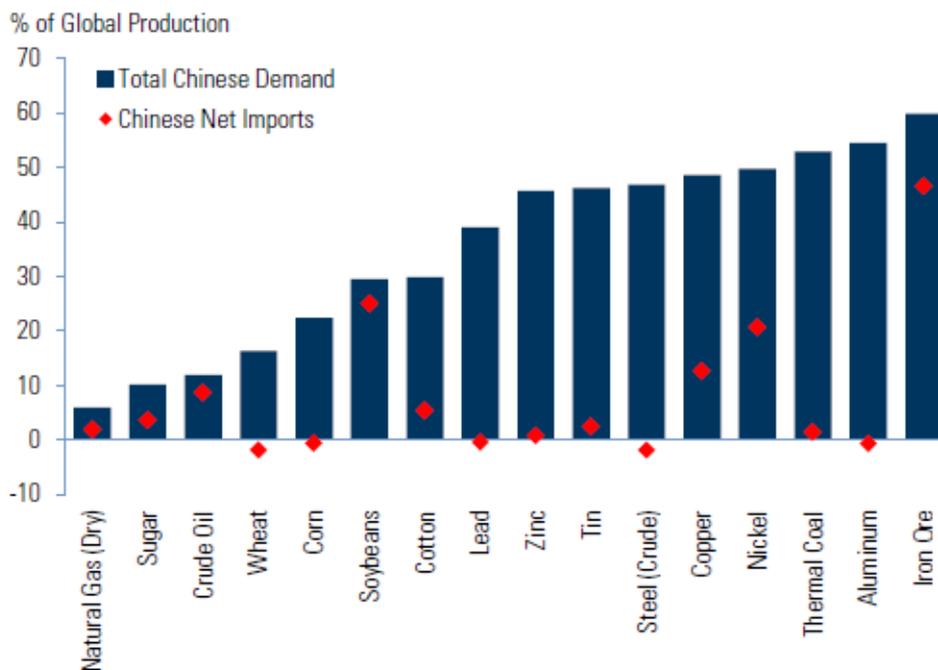
"(...) While its imports of commodities make up a smaller percentage of global production, we believe total demand is more relevant since excess production relative to local Chinese demand will have a dampening effect on relevant commodity prices globally, especially when the excess production is exported. (...)" (Goldman Sacks, 2016, p. 11).

In spite of the impressive numbers mentioned above, Goldman Sacks claim that the potential impact of China slowdown on developed and emerging markets has been overstated. When looking at Figure 66, they argue that exports to China may be significant as a share of GDP on an individual country level for some countries, including

countries that are not in the table because of their tinny contribution for the global GDP. However, on the aggregate:

“(...) the share of GDP affected by a China slowdown is not large in either developed or emerging market economies, at 2.3% in each case. (...)” (Goldman Sacks , 2016, p. 12).

Figure 65: Chinese Share of Global Demand for Commodities

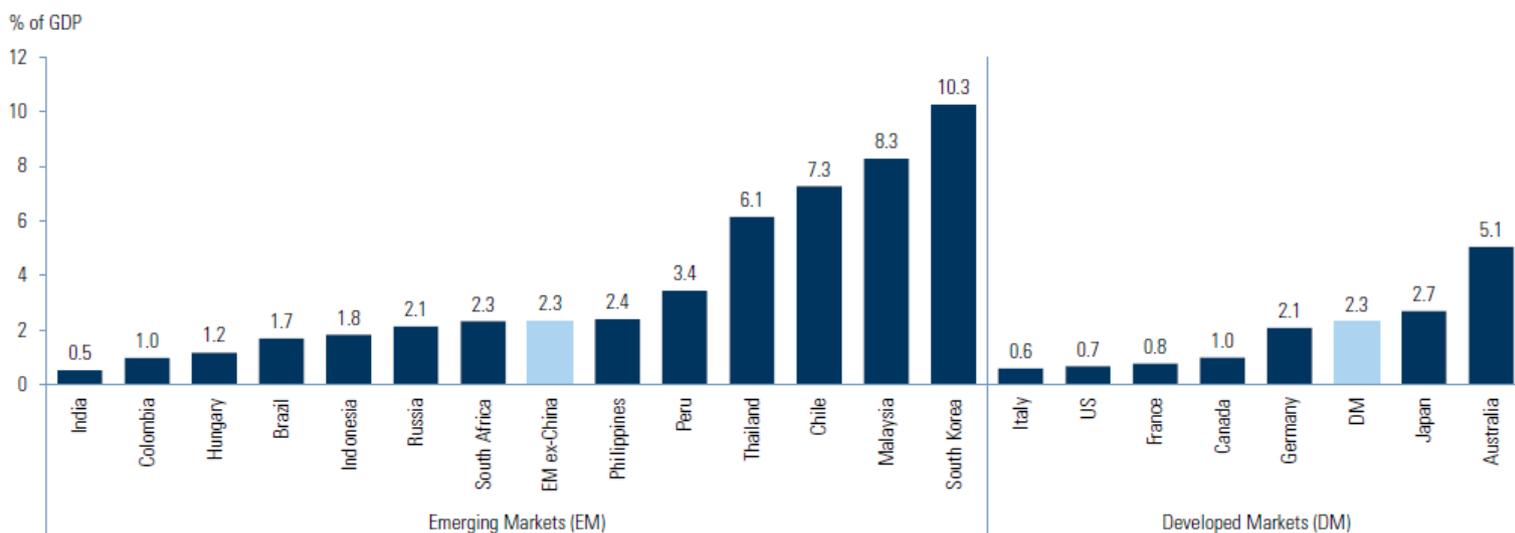


Note: 2015 estimates except for natural gas (2014) and steel (2013).

Source: Investment Strategy Group, Bloomberg, British Petroleum, US Energy Information Administration, Goldman Sachs Global Investment Research, US Department of Agriculture, World Bureau of Metals Statistics.

(Source: Goldman Sacks , 2016, p. 10)

Figure 66: Exports to China as a Share of GDP



Data from Q3 2014 through Q2 2015.

Note: Based on merchandise exports.

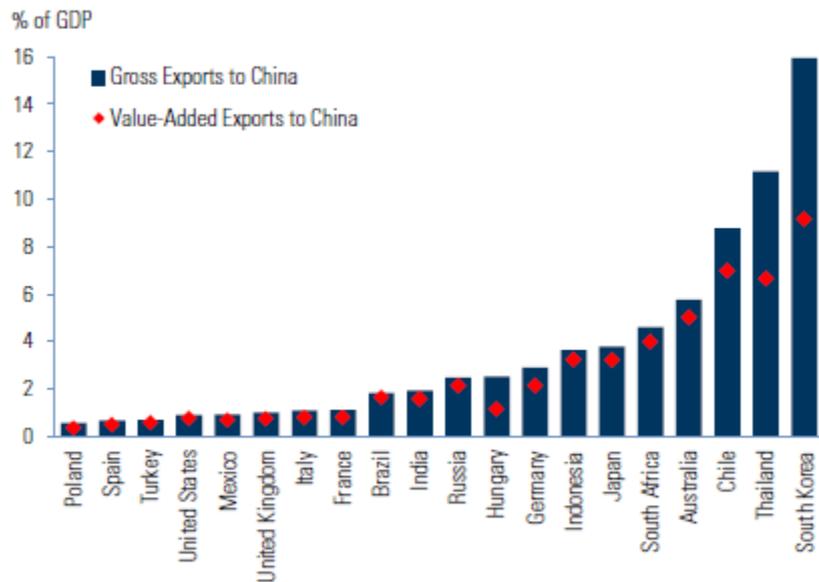
Source: Investment Strategy Group, IMF.

(Source: Goldman Sacks , 2016, p. 11)

In addition, they claim that gross exports to China overstate the economic exposure to the country, since part of them has another final destination. This is the case, for instance, of one-third of Australia's export to China.

Figure 67: Gross and Value-Added Exports to China

Exposure based on value-added exports is lower than gross exports imply.



Data as of 2011 (latest available).
Source: Investment Strategy Group, OECD.

(Source: Goldman Sacks , 2016, p. 12)

Goldman Sacks proposes to use “value-added exports to China as a more effective measure of true economic exposure”. (Goldman Sacks , 2016, p. 12). Figure 67 shows gross and value-added exports to China for selected countries.

About the role of China slowdown in the decline of commodity prices:

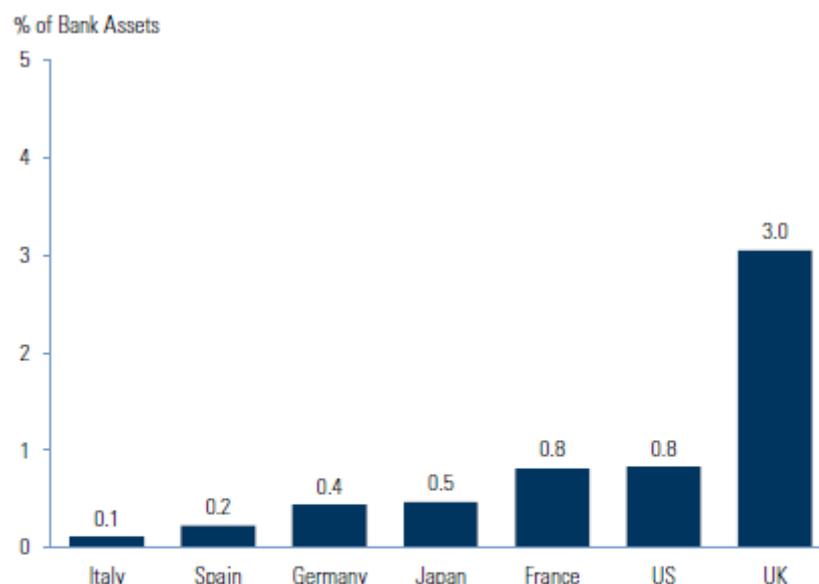
“We also believe that the attribution of the broad-based decline in commodity prices to the slowdown in China has been overstated. Some commodities, such as the ones (...) call the “capex commodities”³⁸ (commodities used in heavy industry to create infrastructure, such as iron ore, steel, cement and copper), are affected by the slowdown in China. Others, such as what they call the “opex commodities” (commodities used to operate the economy, such as oil and natural gas), have not declined because of the slowdown in China.

A closer examination of the supply and demand for crude oil best illustrates this misattribution of the price declines. (...) its price has declined significantly over the last several years: 63% from its postcrisis peak in April 2011 and 59% since its most recent peak in July 2014, as measured by Brent. Yet, (...), Chinese demand has increased steadily since 2011. (...)(Goldman Sacks , 2016, p. 15).

- Economic exposure to China via banks

There is limited exposure of the banking sector from developed economies, as shown in Figure 68.

Figure 68: Banking Sector Exposure to China



Data as of Q2 2015.

Note: Based on consolidated claims on China on an ultimate risk basis as a share of total assets.

Source: Investment Strategy Group, Bank for International Settlements.

(Source: Goldman Sacks , 2016, p. 12)

- Economic exposure to China via direct sales

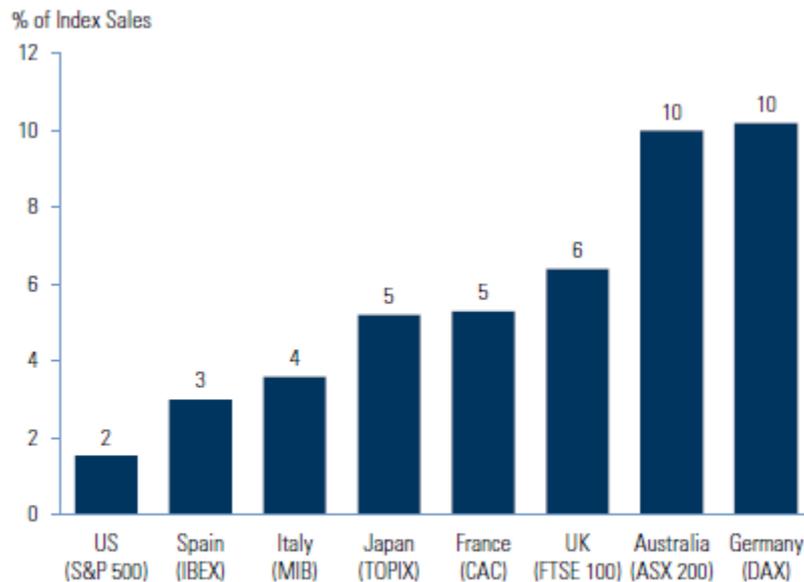
“Countries are also exposed to a slowdown in China through their corporate sectors. Large multinational companies derive sales and profits from goods manufactured and sold in China and from services provided in China; this corporate profit is not captured by exports. Lower profits stemming from a slowdown in China have a second order effect on global economies as equity markets may weaken, resulting in tighter financial conditions.” (Goldman Sacks , 2016, p. 13).

Figure 69 shows “sales exposure of companies represented by major equity market indexes”.

“(…) We must note, however, that it is very difficult to quantify the exposure of major markets’ corporate sectors to China with much precision. Many major multinational companies aggregate their Asia-Pacific sales and do not break out China separately. Therefore, estimates of sales to China, in all likelihood, understate actual sales. Moreover, earnings, which are most relevant, are not attributed to specific regions, so we have to turn to the national income accounts for a gauge of profit exposure to China. Such exposure is much smaller, measuring 0.7% in the US and about 3% in Japan.” (Goldman Sacks , 2016, p. 13).

The conclusion about exposure via trade, direct sales and the bank exposure is that they “are not of a scale to have significant impact on major economies and financial markets” (Goldman Sacks , 2016, p. 13).

Figure 69: Sales Exposure to China



Data as of 2014.

Source: Investment Strategy Group, Goldman Sachs Global Investment Research.

(Source: Goldman Sacks , 2016, p. 13)

- **Financial markets exposure to China**

“(…) it is likely that the US equity market would overreact to news of an economic slowdown in China relative to the country’s 2% (or slightly higher) share of S&P 500 sales and the meager 0.7% share of profits (…). The increase in the correlation between US and Chinese equities in recent years reinforces this notion. (…), the correlation has now reached levels last seen during the global financial crisis, and its increase is greater than what would be suggested by the direct and indirect economic impacts. (…)” (Goldman Sacks , 2016, p. 14).

“(…) Between August 10 and August 27 of 2015, a 21.5% drop in local Chinese equities as measured by the CSI 300 Index triggered a 5.5% decline in US equities as measured by the S&P 500 Index, an 8.1% drop in non-US developed equities as measured by the MSCI EAFE Index and an 8.4% decline in the MSCI Emerging Markets Index. Similarly, in the first two weeks of 2016, China jolted the financial markets with a 16.4% drop in Chinese equities, triggering an 8.0% decline in the S&P 500 Index and an 8.8% and 10.7% drop in the MSCI EAFE and MSCI EM indexes, respectively. (…)” (Goldman Sacks , 2016, p. 1).

“The Organisation for Economic Co-operation and Development’s (OECD’s) latest semiannual ‘Outlook’ also concludes that the drag from changes in financial conditions could be greater than the economic impact.³⁴ It estimates that a two percentage point decline in domestic demand growth in China would slow global growth by 0.33% per year for two years. However, if such a decline negatively impacts the financial markets, global growth would slow by 0.75–1% per year for two years. (…)” (Goldman Sacks , 2016, p. 13-14).

The IMF discussed the growing relevance of financial linkages between China and other EM economies in the GFSR October 2015, especially after 2010, when the offshore

market for the Chinese currency started to flourish. See here, on p. 26, an earlier discussion.

In conclusion,

“We believe that developed financial markets will, in all likelihood, overreact to deteriorating conditions in China. Part of the overreaction will be driven by expectations of further deterioration in emerging markets, especially if a continued slowdown in China corresponds to further depreciation of the renminbi. However, some of the overreaction will be driven by the inevitably greater focus of market participants on the latest headlines. (...)” (Goldman Sacks , 2016, p. 14).

Perhaps the reorientation of China away from an export-driven model and towards a consumption-driven model of growth will give space to new possibilities:

“As Michael Pettis, professor at Peking University in Beijing and author of *The Great Rebalancing*, has so aptly stated, ‘China, like Japan in the 1980s, is the biggest arithmetical component of growth, but with its huge current account surplus, it creates negative demand. The US is the engine of global growth because it provides net demand.’ (...)” (Goldman Sacks , 2016, p. 15).

“Eventually, the market reaction may converge to the real economic impact, but in the meantime, any unanticipated slowdown will negatively impact the financial markets. Moreover, limited transparency in the decision-making process and the rationale for certain policy measures heightens investor uncertainty, which inevitably reveals itself in the form of higher market volatility. Of course, in the extreme case of a hard landing (less-than-3% growth rates), along with a sudden currency depreciation of more than 15% (still substantially less than the 60% depreciation of the Brazilian real and the Russian ruble), global economies and financial markets would be severely impacted.” (Goldman Sacks , 2016, p. 15).

India⁶⁰

“(...) India and the rest of emerging Asia are generally projected to continue growing at a robust pace, although with some countries facing strong headwinds from China’s economic rebalancing and global manufacturing weakness.” (IMF, 2016, p. 3).

- Growth

Growth forecasts are in the range of 6.4 to 7.9 percent in 2016 and 6.5 to 8.1 percent in 2017 (Table 15).

- Employment

The ILO forecast of unemployment is 3.4 percent in 2016 and 2017 (Table 15).

- Inflation

The forecasts for inflation are in the range of 4.9 to 5.8 percent in 2016 and 5 to 5.7 percent in 2017 (Table 15).

- Public debt

The IMF forecast for the general government gross debt as a percentage of GDP is 63.9 in 2016 and 62.8 in 2017 (Table 15).

- Current account balance

The forecasts for the current account balance as a percentage of GDP are in the range of -1.6 to -0.6 in 2016 and -2 to -0.6 in 2017 (Table 15).

For the ASEAN-5 (the founder members of the Association of Southeast Asian Nations: Indonesia, Malaysia, the Philippines, Singapore, and Thailand), the IMF’s

⁶⁰ Idem.

expected weighted growth rate is 4.8 percent in 2016 and 5.1 percent in 2017 (Table A. 4).

Latin America and the Caribbean

“Aggregate GDP in Latin America and the Caribbean is now projected to contract in 2016 as well, albeit at a smaller rate than in 2015, despite positive growth in most countries in the region. This reflects the recession in Brazil and other countries in economic distress.” (IMF, 2015F, p. 3).

Brazil⁶¹

- Growth

Growth forecasts are in the range of -4.3 to -1.6 percent in 2016 and 0 to 2 percent in 2017 (Table 18).

- Employment

The IMF forecast of unemployment is 8.6 percent in 2016 and 8.9 percent in 2017 (Table 18).

- Inflation

The forecasts for inflation are in the range of 5.5 to 9.1 percent in 2016 and 5.1 to 7.3 percent in 2017 (Table 18).

- Public debt

The forecasts for the general government gross debt as a percentage of GDP are in the range of 73.8 to 74.5 in 2016 and 75.8 to 78.9 in 2017 (Table 18).

- Current account balance

The forecasts for the current account balance as a percentage of GDP are in the range of -3.8 to -1 in 2016 and -3.8 to -1.1 in 2017 (Table 18).

Mexico⁶²

The IMF forecasts for 2016 and 2017 are in Table 17.

Middle East and North Africa

“Higher growth is projected for the Middle East, but lower oil prices, and in some cases geopolitical tensions and domestic strife, continue to weigh on the outlook.” (IMF, 2015f, p. 3).

Saudi Arabia growth rate is expected to fall from 3.4 in 2015 to 1.2 in 2016 and then rise to 1.9 in 2017 (Table A. 4).

Iran’s growth rate is expected to rise from 0.8 in 2015 to 4.4 percent in 2016 (Table A. 6).

Sub-Saharan Africa

“Most countries in sub-Saharan Africa will see a gradual pickup in growth, but with lower commodity prices, to rates that are lower than those seen over the past decade. This mainly reflects the

⁶¹ Comments on recent developments and prospects to be included.

⁶² Comments on recent developments and prospects to be included.

continued adjustment to lower commodity prices and higher borrowing costs, which are weighing heavily on some of the region's largest economies (Angola, Nigeria, and South Africa) as well as a number of smaller commodity exporters. " (IMF, 2015f, p. 3).

South Africa⁶³

- Growth

Growth forecasts are in the range of 0 to 1 percent in 2016 and 1.5 to 2.5 percent in 2017 (Table 21).

- Employment

The IMF forecast of unemployment is 25.7 percent in 2016 and 25.6 percent in 2017 (Table 21).

- Inflation

The forecasts for inflation are in the range of 5.7 to 6 percent in 2016 and 5.6 to 6.1 percent in 2017 (Table 21).

- Public debt

The forecasts for the general government gross debt as a percentage of GDP are in the range of 49.5 to 49.8 in 2016 and 50.6 to 50.8 in 2017 (Table 21).

- Current account balance

The forecasts for the current account balance as a percentage of GDP are in the range of -4.5 to -4.3 in 2016 and -4.5 in 2017 (Table 21).

⁶³ Idem.

Table 9: Emerging Market and Developing Economies - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	4.5	4.9	Table A. 4
BNP Paribas ¹	4.1	4.6	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
Goldman Sachs ¹	4.9	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
• Inflation rate - end of period consumer prices (%)			
IMF	5	4.7	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/29/16
BNP Paribas ¹	6.4	5.4	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
• General Government Gross Debt (% of GDP)			
IMF	46.2	47.3	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/29/16
• Current Account Balance (% of GDP)			
IMF	-0.2	-0.3	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/29/16
¹ Emerging Markets only.			

Table 10: Commonwealth of Independent States - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	0	1.7	Table A. 4
• Inflation rate - end of period consumer prices (%)			
IMF	8.5	6.6	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/29/16
• General Government Gross Debt (% of GDP)			
IMF	26	26.3	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/29/16
• Current Account Balance (% of GDP)			
IMF	2.5	3.2	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/29/16

Table 11: Russia - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	-1	1	Table A. 4
Allianz	-1	2.5	https://www.allianz.com/v_1453730682000/media/economic_research/research_data/english_documents/forecasts/BRICTabellenenglisch.pdf , accessed 03/28/16
BNP Paribas	-1.8	0.6	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
Goldman Sachs	1.5	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
Moody's	-3 to -2	0 to 1	https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
Morgan Stanley	-2.1	---	http://www.morganstanley.com/ideas/spring-2016-global-economic-and-strategy-outlook , accessed 03/26/16
• Unemployment rate (%)			
IMF	6.5	6	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/27/16
• Inflation rate - end of period consumer prices (%)			
IMF	8.5	6	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
Allianz ¹	8.5	7.5	https://www.allianz.com/v_1453730682000/media/economic_research/research_data/english_documents/forecasts/BRICTabellenenglisch.pdf , accessed 03/28/16
BNP Paribas	9.1	7.2	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	21	21.9	Table A. 10
BNP Paribas ²	19.4	22.4	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives , accessed 04/10/16
• Current Account Balance (% of GDP)			
IMF	5.4	5.7	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16
BNP Paribas	2.8	7.4	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives , accessed 04/07/16
¹ Annual average. ² Public debt / GDP (%).			

Table 12: Emerging and Developing Europe - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	3.1	3.4	Table A. 4
• Inflation rate - end of period consumer prices (%)			
IMF	3.7	4.1	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/29/16
• General Government Gross Debt (% of GDP)			
IMF	45.1	46	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/29/16
• Current Account Balance (% of GDP)			
IMF	-2.4	-3	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/29/16

Table 13: Emerging and Developing Asia - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	6.3	6.2	Table A. 4
• Inflation rate - end of period consumer prices (%)			
IMF	3.2	3.3	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/29/16
• General Government Gross Debt (% of GDP)			
IMF	47.4	48.9	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/29/16
• Current Account Balance (% of GDP)			
IMF	1.8	1.1	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/29/16

Table 14: China - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	6.3	6	Table A. 4
Allianz	6.5	6	https://www.allianz.com/v_1453730682000/media/economic_research/research_data/english_documents/forecasts/BRICTabellenenglisch.pdf , accessed 03/28/16
BNP Paribas	6.4	6.1	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
Goldman Sachs	6.4	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
Moody's	5.5 to 6.5	5.5 to 6.5	https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
Morgan Stanley	6.5	---	http://www.morganstanley.com/ideas/spring-2016-global-economic-and-strategy-outlook , accessed 03/26/16
PIMCO	5.5 to 6.5	---	https://www.pimco.com/insights/economic-and-market-commentary/cyclical-outlook/calmer-cs-ahead-china-commodities-and-central-banks-dominate-the-global-outlook , accessed 03/26/16
Standard & Poor's	6.3	---	https://www.spratings.com/documents/20184/908557/US_SR_Event_Webcast_16JAN_ChinaEcon11516/7c07d687-1a22-41f3-a3f8-8dc44a2b7ef6 , accessed 03/26/16
• Unemployment rate (%)			
IMF	4.1	4.1	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/27/16
• Inflation rate - end of period consumer prices (%)			
IMF	1.8	2.2	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
Allianz ¹	2.2	2.7	https://www.allianz.com/v_1453730682000/media/economic_research/research_data/english_documents/forecasts/BRICTabellenenglisch.pdf , accessed 03/28/16
BNP Paribas	1.5	1.7	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
PIMCO	1 to 1.5	---	https://www.pimco.com/insights/economic-and-market-commentary/cyclical-outlook/calmer-cs-ahead-china-commodities-and-central-banks-dominate-the-global-outlook , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	46	48.3	Table A. 10
• Current Account Balance (% of GDP)			
IMF	2.8	2	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16
BNP Paribas	3.1	2.2	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives , accessed 04/07/16

¹Annual average.

Table 15: India - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	7.5	7.5	Table A. 4
Allianz	7.2	6.5	https://www.allianz.com/v_1453730682000/media/economic_research/research_data/english_documents/forecasts/BRICTabellenenglisch.pdf , accessed 03/28/16
BNP Paribas	7.9	8.1	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
Goldman Sachs	6.4	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
Moody's	6.5 to 7.5	6.5 to 7.5	https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
Morgan Stanley	7.5	---	http://www.morganstanley.com/ideas/spring-2016-global-economic-and-strategy-outlook , accessed 03/26/16
• Unemployment rate (%)			
ILO ¹	3.4	3.4	http://www.ilo.org/ilostat/faces/help_home/data_by_country/country-details/indicator-details?country=IND&subject=UNE&indicator=UNE_2EAP_SEX_AGE_RT&datasetCode=YI&collectionCode=ILOEST&_afLoop=112014541586499#%40%3Findicator%3DUNE_2EAP_SEX_AGE_RT%26subject%3DUNE%26_afLoop%3D112014541586499%26datasetCode%3DYI%26collectionCode%3DIOEST%26country%3DIND%26_adf.ctrl-state%3D95qog2275_260 , accessed 03/28/16
• Inflation rate - end of period consumer prices (%)			
IMF	5.6	5.1	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
Allianz	5.5	5.7	https://www.allianz.com/v_1453730682000/media/economic_research/research_data/english_documents/forecasts/BRICTabellenenglisch.pdf , accessed 03/28/16
BNP Paribas	5.8	5.2	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
Moody's	4.9	5	https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	63.9	62.8	Table A. 10
• Current Account Balance (% of GDP)			
IMF	-1.6	-2	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16
BNP Paribas ¹	-0.6	-0.6	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives , accessed 03/29/16
¹ Estimates of the no. of unemployed in the total 15+ population.			

Table 16: Latin America and the Caribbean - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	-0.3	1.6	Table A. 4
Allianz ¹	-0.7	2.7	https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf , accessed 03/26/16
• Inflation rate - end of period consumer prices (%)			
IMF	10.5	9.4	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
• General Government Gross Debt (% of GDP)			
IMF	56.3	56.9	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
• Current Account Balance (% of GDP)			
IMF	-3	-2.9	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
¹ Latin America only.			

Table 17: Mexico - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	2.6	2.9	Table A. 4
Moody's	2 to 3	2.5 to 3.5	https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Unemployment rate (%)			
IMF	4	3.9	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/27/16
• Inflation rate - end of period consumer prices (%)			
IMF	3	3	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	52.1	52	Table A. 10
• Current Account Balance (% of GDP)			
IMF	-2	-2.2	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16

Table 18: Brazil - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	-3.5	0	Table A. 4
Allianz	-2.5	2	https://www.allianz.com/v_1453730682000/media/economic_research/research_data/english_documents/forecasts/BRICTabellenenglisch.pdf , accessed 03/28/16
BNP Paribas	-4	0	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
Goldman Sachs	-1.6	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
Moody's	-3.5 to -2.5	0 to 1	https://www.moody.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
Morgan Stanley	-4.3	---	http://www.morganstanley.com/ideas/spring-2016-global-economic-and-strategy-outlook , accessed 03/26/16
• Unemployment rate (%)			
IMF	8.6	8.9	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/26/16
• Inflation rate - end of period consumer prices (%)			
IMF	5.5	5.1	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
Allianz	8.8	6.5	https://www.allianz.com/v_1453730682000/media/economic_research/research_data/english_documents/forecasts/BRICTabellenenglisch.pdf , accessed 03/28/16
BNP Paribas	9.1	7.3	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	74.5	75.8	Table A. 10
BNP Paribas	73.8	78.9	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives , accessed 04/10/16
• Current Account Balance (% of GDP)			
IMF	-3.8	-3.8	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16
BNP Paribas	-1	-1.1	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives , accessed 04/07/16

Table 19: Middle East and North Africa - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF ¹	3.6	3.6	Table A. 4
• Inflation rate - end of period consumer prices (%)			
IMF	5.2	4.8	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
• General Government Gross Debt (% of GDP)			
IMF	40.8	42.2	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
• Current Account Balance (% of GDP)			
IMF	-4.2	-2.5	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
¹ Middle East, North Africa, Afghanistan and Pakistan.			

Table 20: Sub-Saharan Africa - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	4	4.7	Table A. 4
• Inflation rate - end of period consumer prices (%)			
IMF	7.1	6.4	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
• General Government Gross Debt (% of GDP)			
IMF	35.5	36.2	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
• Current Account Balance (% of GDP)			
IMF	-5.5	-5.1	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16

Table 21: South Africa - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	0.7	1.8	Table A. 4
BNP Paribas	0.9	1.6	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27405 , accessed 03/28/16
Moody's	0 to 1	1.5 to 2.5	https://www.moody.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Unemployment rate (%)			
IMF	25.7	25.6	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/26/16
• Inflation rate - end of period consumer prices (%)			
IMF	5.7	5.6	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
BNP Paribas ¹	6	6.1	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27405 , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	49.8	50.8	Table A. 10
BNP Paribas	49.5	50.6	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27405 , accessed 03/28/16
• Current Account Balance (% of GDP)			
IMF	-4.5	-4.5	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16
BNP Paribas	-4.3	-4.5	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27405 , accessed 03/29/16
¹ Year average.			

Advanced Economies

“(…) The income windfall gains from lower oil prices have supported a pickup in private consumption in advanced economies, broadly as expected, except in the United States, where harsh winter weather and other temporary factors weakened the consumption response somewhat, and Japan, where the consumption response has been dampened by delayed pass-through and wage moderation. (…)” (IMF, 2015f, p. 3).

U.S.

- Growth

“(…) Overall activity remains resilient in the United States, supported by still-easy financial conditions and strengthening housing and labor markets, but with dollar strength weighing on manufacturing activity and lower oil prices curtailing investment in mining structures and equipment. (…)” (IMF, 2015f, p. 2-3).

“The recovery is expected to continue in the United States, supported by lower energy prices, reduced fiscal drag, strengthened balance sheets, and an improving housing market (…). These forces are expected to more than offset the drag on net exports coming from the strengthening of the dollar.” (IMF, 2015f, p. 13). (See *fiscal drag* in the Lexicon).

Allianz points to consumption as a key driver for the economic activity in 2016:

“(…) Consumption, in particular, started the new year with fresh momentum. As the situation on the labor market remains solid, a trend that is increasingly feeding through into wage momentum, and falling gasoline prices translate into substantial increases in purchasing power, private consumption is likely to remain one of the main pillars driving the economy in the quarters to come, too. We also expect to see an ongoing recovery in the residential construction sector, which is still below the longer-term average in relation to gross domestic product. By contrast, exports are likely to show only moderate growth given the further rise in the US dollar seen in recent months. And with oil prices falling further, adjustments in the oil sector will weigh on business investment for longer than previously expected. (…)”⁶⁴

BNP Paribas:

“(…) In 2016, exports are likely to be the biggest damper on growth due to the strong dollar and slowing world trade. Although recession seems inevitable in the industrial sector, the rest of the US economy should benefit from the very factors squeezing manufacturing (low oil prices and the strong dollar). Consumer spending could surprise on the upside, buoyed by an unfalteringly dynamic job market. (…)”⁶⁵

Moody’s contrasts the drop in non-residential investment (e.g. commercial real estate, tools, machinery, factories) with the rise of the residential one. It also confirms the pattern of labor intensity growth, discussed earlier in the context of advanced economies:

“(…) Growth in households’ spending has strengthened significantly, with both consumption and residential investment rising strongly (…). Yet, non-residential investment has been weak and slowed during 2015. We expect this contrast to persist in 2016-17 (…).

Weak investment is partly accounted for by the correction in the energy sector: investment in energy extraction slumped one third in real terms in 2015, shaving nearly 1.5 percentage points off total investment growth. However, investment in other sectors has also been muted, despite low interest rates and yields, at least for investment-grade corporates. (…).

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https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf, p. 7, accessed 04/01/16.

⁶⁵ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369>, p. 4, accessed 04/01/16.

“(…) a decline in the job intensity of growth is unlikely: wage growth remains moderate and the stronger dollar favours growth in job-intensive services rather than manufacturing.(…)”⁶⁶

BNP Paribas comments on the low productive investment in light of labor productivity:

“(…) Sluggish investment is a problem, notably in terms of productivity gains. Between 2011 and 2015, labour productivity rose only 0.5% a year, compared to 2.3% a year in the five years preceding the 2007-2009 crisis, and an average of 3.2% over the four years following the 2001 recession.”⁶⁷

Real GDP growth is estimated as 1.9 percent in 2015 (Table A. 4). Table 24 summarizes market forecasts for the U.S. economy. Growth expectations are in the range of 1.7 to 2.5 percent for 2016 and 1.5 to 2.6 percent for 2017.

- Employment

According to Goldman Sachs, the U.S. economy should be back to full employment by the end of 2016.⁶⁸

The IMF estimates of output gap as percentages of GDP are: -1.6 in 2015, -1 in 2016 and -0.4 in 2017. The estimate of the unemployment rate in 2015 is 5.3 percent.⁶⁹

The forecasts of unemployment rates are in the range of 4.5 to 5.5 percent in 2016 and 4 to 5.1 percent in 2017 (Table 24).

- Inflation

Since 2012, the FED aims at an inflation rate of 2 percent per year.

In 2015,

“Inflation remains below the FOMC’s longer-run goal of 2 percent: The price index for personal consumption expenditures (PCE) rose only ½ percent over the 12 months ending in December. The PCE price index excluding food and energy items, which often provides a better indication of future inflation, also remained subdued, rising 1½ percent over that period. Inflation has been held down substantially by the drop in energy prices; declines in the prices of non-oil imported goods have contributed as well. (…)” (FED, 2016, p. 1).

The inflation rate is expected to rise as the economy is getting close to full employment. Forecasts are in the range of 1 to 1.8 percent in 2016 and 1.8 to 2.4 in 2017 (Table 24).

- Policy interest rates

The following short run interest rates are instruments of the monetary policy of the FED:⁷⁰

a) Federal funds rate

⁶⁶ https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_1014679, p. 14, accessed 04/02/16.

⁶⁷ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p.5, accessed 04/08/16.

⁶⁸ See the video: <http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html?videoid=139052>.

⁶⁹ <http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx>, accessed 04/02/16.

⁷⁰ For an overview of the monetary tools of the FED: <http://www.federalreserve.gov/monetarypolicy/policytools.htm> , accessed 03/31/16.

“(…) the interest rate at which depository institutions lend reserve balances to other depository institutions overnight (…)” (See *Depository institution* in the Lexicon);

b) Discount rate

“(…) the interest rate charged to commercial banks and other depository institutions on loans they receive from their regional Federal Reserve Bank’s lending facility (…)”;

c) Interest rate on required reserves (IORR rate)

“(…) is intended to eliminate effectively the implicit tax that reserve requirements used to impose on depository institutions (…)”;

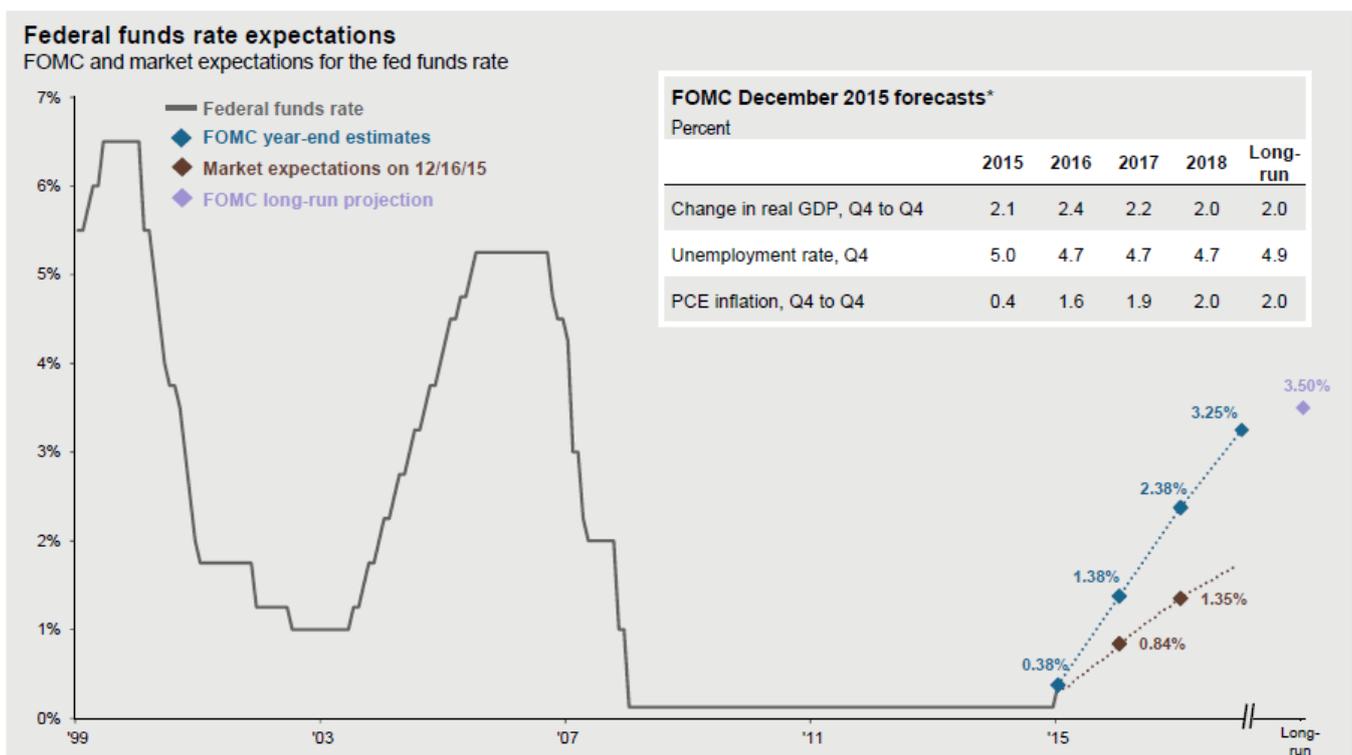
d) Interest rate on excess reserves (IOER rate)

“(…) during monetary policy normalization, the Federal Reserve intends to move the federal funds rate into the target range set by the FOMC primarily by adjusting the IOER rate (…)”.

The federal funds and the discount rates set a floor for (short run) money market interest rates.

Figure 70 shows the trajectory of the federal funds rate along the period 1999-2015 (solid line). In addition, it shows official expectations in the short (blue dashed line) and long run (violet point) and market expectations in the short run (brown dashed line) as of 12/16/15, i.e. right after the increase in the federal funds rate by the FED.

Figure 70: FOMC and Market Expectations for the Federal Funds Rate



Source: FactSet, Federal Reserve, J.P. Morgan Asset Management.
Market expectations are the federal funds rates priced into the fed futures market as of the date of the December 2015 Federal Open Market Committee (FOMC) meeting. *Forecasts of 17 FOMC participants, midpoints of central tendency except for federal funds rate, which is a median estimate.
Guide to the Markets – U.S. Data are as of December 31, 2015.

(Source: https://am.jpmorgan.com/blob-gim/1383280028969/83456/MI-GTM_1Q16.pdf, accessed 03/31/16)

The U.S. Department of the Treasury (hereafter, the U.S. Treasury) sets the policy rates for the public debt, i.e. short, mid- and long-term interest rates on government

securities, such as government bonds. They are a benchmark for interest rates that are free of credit risk. The Treasury Yield Curve (see *Yield Curve* in the Lexicon) is a reference for the spread between short and long-term interest rates.⁷¹

The securities issued by the U.S. Treasury are:⁷²

a) Treasury Bills

“Treasury bills are direct, short-term debt obligations of the U.S. government. (...). Once per quarter, the U.S. government issues Treasury bills with one-year maturities. T-bills have minimal interest-rate risk, since they have very short-term maturities. Treasury bills are issued at a discount from their par value. That is, they do not pay interest. (...);”

b) Treasury notes

“Treasury notes are direct debt obligations of the U.S. Treasury that pay semiannual interest as a percentage of the stated par value, have intermediate-term maturities (1-10 years) and mature at par value. (...)” (See *par value* in the Lexicon);

c) Treasury bonds

“Treasury bonds are the direct debt obligations of the U.S. Treasury that pay semiannual interest as a percentage of par value and mature at par, like Treasury notes. They differ from T-notes in the length of their maturities, which are generally 10 to 30 years. (...).”

Table 35 shows expectations and projections for the federal funds rate and yields of U.S. Treasury securities by mature. The table is in descending order of publication date. It contains the downwards revision of FED expectations regarding the federal funds rate, together with market expectations about the FED rate and yields from Treasury securities. Except by one institution, market expectations are below official ones. Figure 86 contains a yield curve for the government bonds.

There are two main reasons for the lower official expectations. One is the divergent policy rates between U.S., EMU, Japan and other advanced economies. As the policy rates in U.S. increases and, together with them, the spreads relative to the EMU and other advanced economies, the dollar tends to appreciate due to capital flows to U.S., which has adverse effects on U.S. exports and, consequently, on growth prospects.

Figure 72 shows current spreads of ten-year government bonds from selected countries w.r.t. Germany and the U.S. In the majority of cases, the yield is below that of the U.S. Treasury bond.

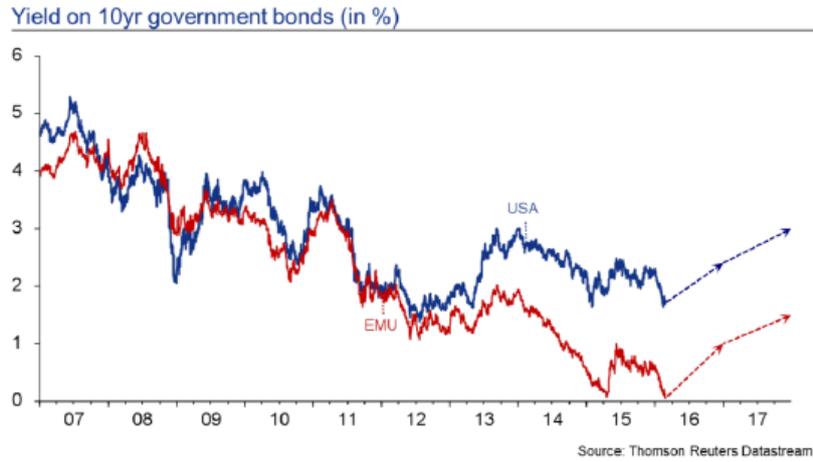
⁷¹ The Treasury provides daily information on its policy rates: <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/default.aspx>, accessed 03/31/16.

⁷² An overview of the Treasury securities: <http://www.investopedia.com/exam-guide/finra-series-6/investment-securities/us-united-states-government-securities.asp>. See also: <http://www.treasurydirect.gov/indiv/research/faq/faq.htm>, accessed 03/31/16.

Figure 71 shows the spreads of 10-year government bonds between U.S. and EMU in a time perspective, starting from 2007 until the third quarter of 2015.

Figure 72 shows current spreads of ten-year government bonds from selected countries w.r.t. Germany and the U.S. In the majority of cases, the yield is below that of the U.S. Treasury bond.

Figure 71: U.S. - EMU Divergent Policy Rates and Spreads



(Source: https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf.)

Figure 72: Selected Countries vs U.S., Germany –Ten Year Government Bonds Spreads

Country ▲	Latest yield	Spread vs bund	Spread vs T-bonds
Australia	2.53%	+2.40	+0.75
Austria	0.33%	+0.20	-1.44
Belgium	0.37%	+0.24	-1.40
Canada	1.24%	+1.11	-0.54
Denmark	0.43%	+0.30	-1.35
Finland	0.40%	+0.28	-1.37
France	0.38%	+0.25	-1.40
Germany	0.13%	--	-1.65
Greece	8.70%	+8.57	+6.93
Ireland	0.71%	+0.58	-1.07
Italy	1.23%	+1.10	-0.55
Japan	-0.06 %	-0.19	-1.83
Netherlands	0.21%	+0.08	-1.56
New Zealand	2.95%	+2.82	+1.18
Portugal	2.74%	+2.61	+0.97
Spain	1.44%	+1.31	-0.34
Sweden	0.77%	+0.64	-1.01
Switzerland	-0.33 %	-0.46	-2.11
UK	1.41%	+1.28	-0.36
US	1.77%	+1.65	--

Data delayed at least 15 minutes, as of Apr 01 2016 22:05 BST.

(Source: <http://markets.ft.com/Research/Markets/Government-Bond-Spreads>, accessed 04/01/16)

Another reason for slowing the pace of monetary policy normalization is the lower U.S. growth prospects due to domestic conditions. Among them is the lower than expected labor productivity, mentioned before in the subsection Growth, employment, and labor productivity in advanced economies.

Below there are two market views about the U.S. monetary policy.

Allianz:

“While the ECB is expected to leave its monetary policy unchanged after March (in terms of both key interest rates and unconventional measures), we still expect the Fed to implement two rate hikes of 25 basis points each – albeit not until the second half of the year. We believe that the Federal Reserve's decision, taken in December 2015, to put an end to its zero interest rate policy was warranted, if not long overdue, especially given that ongoing solid job growth has almost brought the labor market back to full employment. Further changes are likely to be very gradual. With monetary policies across the globe differing considerably and economies also at different stages of the economic cycle, the Fed is finding it difficult to gauge the impact of rate hikes.

Consequently, it will most likely eschew adhering to a rigid pattern when it comes to adjusting key interest rates in favor of responding flexibly to the incoming data. The Fed is likely to adopt a 'wait and see' policy in the first half of 2016. From a global perspective, the ideal situation would be one in which the major central banks create more leeway for themselves again by (cautiously) guiding their monetary policy back to normal as soon as the situation stabilizes, as we expect it to. Excessive caution in scaling back monetary expansion, not to mention engaging in competitive devaluation via monetary policy, are tactics that have virtually no impact on economic growth but come hand-in-hand with numerous nasty side effects. Should new crises emerge, the central banks would have no room to act.”⁷³

BNP Paribas takes into account the rising inflation as the economy is getting close to full employment and consumption is elevated due to it and to windfall benefits of declined oil prices:

“■From ‘risk off’ to ‘risk on’ ■Dovish Fed, for how long?”

(...) the Federal Reserve of Atlanta points towards first quarter annualised growth of 1.4% after reaching 2.3% earlier in the quarter. (...). This has not stopped some Federal Reserve officials from calling for a rate hike as early as in April, on the back of a pick-up in inflation. Core inflation is now up 2.3% coming from 1.7% some months ago. This hawkish talk is quite different from the dovish signal sent by the latest FOMC meeting and it seems that markets attach more importance to the latter than to the former. The dovishness has supported risk appetite, thereby continuing a trend that started around mid-February, and on the back of this, Wall Street rallied and Treasury yields increased. The risk-on environment has been particularly welcomed in emerging markets which have seen a strengthening of their currencies. Whether the pendulum will eventually swing in the other direction again very much depends on the outlook for Fed policy.”⁷⁴

Canada

“Canada is a net exporter of most energy commodities and a significant producer of crude oil and other liquids from oil sands, natural gas, and hydroelectricity. (...)”⁷⁵

According to the WEO October 2015:

⁷³ Allianz. *Working Paper 199*. February 23, 2016, p. 3-4.

https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf, accessed 04/01/16.

⁷⁴ BNP Paribas. *Eco WEEK*. March 25, 2016, p. 1.

<http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613>, accessed 04/01/16.

⁷⁵ <https://www.eia.gov/beta/international/analysis.cfm?iso=CAN>, accessed 02/04/16.

“In commodity exporters, lower commodity prices weigh on the outlook through reduced disposable income and a decline in resource-related investment. The latter mechanism has been particularly sharply felt in Canada, where growth is now projected to be about 1 percent in 2015, 1.2 percentage points lower than forecast in April. (...)” (IMF, 2015f, p. 14).

“(...) Lower capital expenditures in the oil sector were also a major contributor to the slowdown in Canada, where economic activity contracted modestly during the first two quarters of 2015.” (IMF, 2015f, p. 1).

As argued earlier, in subsection Commodity prices - Oil, nonconventional oil production may become not feasible due to the decline in oil prices. The estimate mentioned before was that “If oil prices stay around \$60 per barrel, roughly one-third of current oil production and more than two-thirds of the expected increase in global oil production could become uneconomical”.

The WEO Update, from January 2016, estimates that the growth rate in 2015 is 1.2 percent, which is below one percent point relatively to the forecast in the WEO April 2015.

According to OECD forecasts from November 2015:

“(...) The drag from falling energy investment should fade away by early 2016, while non-energy exports lead the subsequent pick-up, with business investment following. As economic slack is taken up through 2016, inflation should increase to above the 2% midpoint of the Bank of Canada’s inflation target range in 2017.

Increases in policy rates are assumed in late 2016 and to be gradual thereafter. Further macro-prudential measures should be taken to contain financial stability risks from high household debt and house prices. Reductions in the general government budget deficit are set to decline, reflecting the incoming federal government’s pledge to run small deficits to finance infrastructure spending.

Reducing barriers to foreign direct investment in telecommunications, broadcasting and airlines, and continued efforts to increase the quantity and productivity of R&D would raise long-term growth prospects. (...)”⁷⁶

Table 25 contains economic forecasts for Canada.

Japan

“(...) in December 2012, the incoming government headed by Shinzo Abe started to implement the so-called ‘Three arrows programme’. The first arrow is a very accommodative monetary policy. In April 2013, the Bank of Japan (BoJ) announced a quantitative and qualitative easing (QQE), to be conducted until inflation had reached 2%. The Bank started to buy assets, mainly government bonds (JGBs) at an annual pace of JPY 65 trillion. In October 2014, the asset buying programme was stepped up to an annual pace of JPY 80 trillion. By end 2015, the monetary base had increased by 160% to JPY 350 trillion (70% of GDP). The second arrow is the flexible use of fiscal policy. In the short-run fiscal policy was expansionary through the adoption of fiscal stimulus programmes. In the long-run, it should become restrictive, as the government aims at achieving a primary surplus by FY 2020. Finally, the third arrow is a wide-ranging structural reform agenda that aims at raising Japan’s potential growth rate to 2%. (...)”

The most eye-catching policy is the BoJ’s asset purchase programme, which has led to a sharp weakening of the yen. Since November 2012, the currency has lost a third of its value against the US dollar. This has been a boon for exporting firms, allowing them to regain market share and, more importantly, improve profit margins. Business conditions have improved significantly and corporate profitability has reached historically high levels (...).

However, firms mainly producing for the domestic market have experienced less marked improvements, affected by the substantial decline in purchasing power as a result of the 3 point VAT hike

⁷⁶ <http://www.oecd.org/economy/canada-economic-forecast-summary.htm>, accessed 02/04/16.

to 8% in April 2014 and losses in the terms of trade related to depreciation. Although the latter reversed in 2015 following the sharp fall in oil prices, private consumption is expected to have declined by 0.9% in 2015.

In addition, the record profits have not been translated in increased capital spending even though, according to our estimations, the output gap has disappeared. In 2015, private non-residential capital spending may have increased by less than 1%.⁷⁷

- **Growth**

“(…) Growth in Japan is also expected to firm in 2016, on the back of fiscal support, lower oil prices, accommodative financial conditions, and rising incomes. (…)” (IMF, 2016, p. 3).

“In Japan GDP growth is projected to rise from –0.1 percent in 2014 to 0.6 percent in 2015 and 1.0 percent in 2016 (…). The gradual pickup reflects support from higher real compensation and higher equity prices due to the Bank of Japan’s additional quantitative and qualitative easing, as well as lower oil and commodity prices.” (IMF, 2015f, p. 13-14).

“(…) the effects of the structural reform programme are likely only to be noticeable in the medium term. In the coming years, the reforms are likely to spread well beyond the export sector and large enterprises, as the reform agenda will become more targeted at SMEs, agriculture, health care and the services sector.

This year growth is likely to remain at around 0.7% as in 2015. The slowdown in exports, largely related to slowing Asian demand growth is compensated by a strong pick up in domestic demand (close to 1%). In 2017, growth is expected to ease to only 0.4%, assuming that the government will indeed go ahead with hiking the VAT rate to 10%.

The major risk for our scenario is the floundering of the Chinese economy. Given the importance of China - in 2014, almost 25% of Japanese exports were shipped to the PRC (including Hong Kong) – a more rapid slowdown would also lower Japanese growth to zero or even below.”⁷⁸

Table 26 compiles the forecasts for Japan. Growth expectations are in the interval of 0 to 1 percent for 2016 and 0 to 0.9 percent in 2017.

- **Employment**

“Since end 2012, the economy has created 1 million jobs. Almost all these jobs were in health care and welfare and are related more to the greying of the population than a change in policy orientation. Nevertheless, the improvement in business conditions of the manufacturing sector has stopped the steady decline in employment in the manufacturing sector. The unemployment rate, at 3.3% in November, is historically low and labour shortages have appeared.

For the moment, the impact on wages has been limited. (…)⁷⁹

The forecasts for unemployment rates are 3 to 4 percent in 2016 and 2.9 to 4 percent in 2017 (Table 26).

- **Inflation**

“Despite the expansionary monetary policy, inflation is currently close to zero, mainly due to the fall in energy prices. However, the UTokyo daily price index has recently strongly increased (chart 3). Since September, it has been even around 1.3% higher from a year earlier. This index uses scanner data from about 300 supermarkets across Japan. Its rise indicates that supermarkets have been raising prices aggressively. This is partly related to the depreciation of the yen, but may also be due to a recovery in consumer demand thanks to improved wages and bonuses. According to BoJ Governor Haruhiko Kuroda,

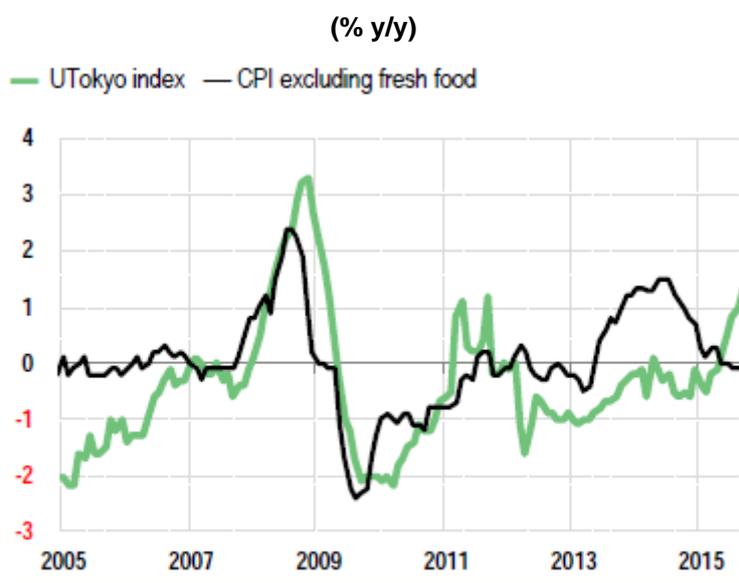
⁷⁷ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369>, p. 24, accessed 04/02/16.

⁷⁸ Idem, p. 25.

⁷⁹ Idem, p. 25.

‘the simultaneous occurrence of base pay increases and price hikes should be regarded as evidence that a positive feedback loop between the increases in employment and wages and the moderate rise in inflation is now in place.’ In our scenario, we expect inflation slowly to increase to around 1.1% in 2017, excluding the effect of tax hikes.”⁸⁰

Figure 73: Is Japan getting out of deflation?



Sources: Datastream and BNP Paribas

(Source: <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdt=2/369>, p. 25, accessed 04/02/16)

The forecasts for the inflation rate are 0.1 to 0.75 percent in 2016 and 1.8 percent in 2017 (Table 26).

- Policy interest rates

On January 29, the Bank of Japan (BoJ) surprised financial markets by setting to minus 0.1 percent the rate on balances held by other institutions at the central bank. In its last meeting, on March 15, it kept that rate unchanged.

The BoJ decision on January was announced as a response to falling oil prices and the global perspectives of economic growth, in light of the slowdown of the Chinese economy. In a broader perspective, the Japanese monetary policy is determined to avoid deflation and, as explained above, the monetary policy is one dimension of the economic policy that aims to revive the Japanese economy, the so-called ‘Abenomics’ policy by the media, in reference to Prime Minister Shinzo Abe.

Besides the interest rate on reserves at the central bank, another relevant reference in the Japanese economy is the ‘overnight call rate’, the rate that applies to interbank loans of short maturity, usually one day (overnight).⁸¹

Table 38 shows forecasts for the overnight call rate and yields from government bonds. Figure 89 shows a yield curve for government bonds derived on April 1.

- Public debt

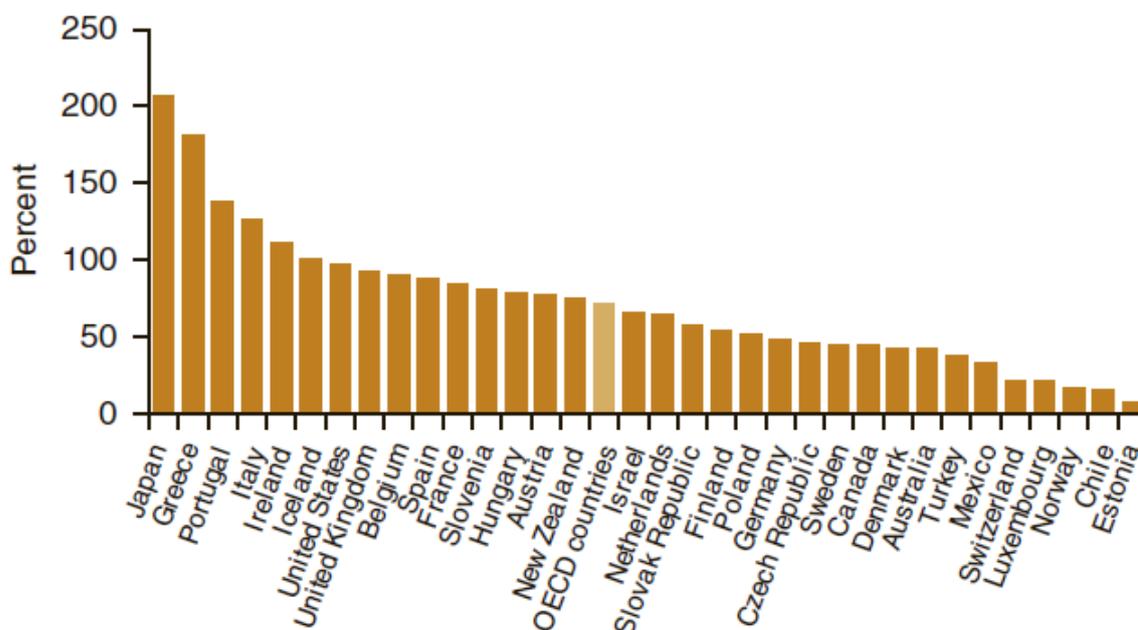
“■ A balanced budget is still far away

⁸⁰ Idem, p. 25.

⁸¹ <http://www.global-rates.com/interest-rates/central-banks/central-bank-japan/boj-interest-rate.aspx>, accessed 02/04/16.

The government has made some progress in fiscal consolidation. In 2014, the VAT rate was hiked by 3 points to 8%, which has increased tax receipts by JPY 6.6 trillion or 1.3% of GDP. As a result, the government is expected to succeed in halving the primary deficit-to-GDP ratio from 6.6% in FY 2010 to 3.3% in FY 2015. The aim is to reduce this ratio to 1% in 2018 and to achieve a primary surplus by 2020. An important element in the medium-term fiscal strategy is to raise the VAT rate by 2 percentage points to 10% in April 2017. The measure is likely to provoke a recession. On the other hand, postponing the rate hike might cast doubt on the government's determination to improve the fiscal position and result in further downgrades of Japanese debt by the rating agencies. The effect of the latter is limited given strong demand for JGBs by Japanese financial institutions.⁸² (See *Value Added Tax* in the Lexicon; FY=Fiscal Year; JGB=Japan Government Bond).

Figure 74: OECD Countries – Government Debt to GDP, 2014



Source: World Bank Public Sector Debt Database.

(Source: WB, 2016c, p. 15)

According to The World Bank:

“Japan has by far the highest government debt-to-GDP ratio of OECD countries

Since the 2008 global financial crisis, government debt levels in many OECD countries have remained on a rising trajectory, despite concerted efforts at fiscal consolidation. However, government debt burdens vary significantly as evidenced by the debt-to-GDP ratio that ranged, in 2014, from as low as 7 percent for Estonia to as high as 206 percent for Japan, which relies primarily on the domestic bond market to raise the funds needed to finance the continuously rising costs of supporting its aging population. OECD countries outside the Euro Zone, with the second and third highest debt-to-GDP ratio, were the United States and the United Kingdom, 97 percent and 94 percent, respectively, at the end of 2014. Although ratios for the United Kingdom and the United States are similar, their debt profiles differ. Virtually all government debt of the United Kingdom is financed by the domestic creditors, whereas over one-third of government debt in the United States is owed to external creditors.” (WB, 2016c, p. 15).

The forecasts for the general government gross debt as percentage of GDP are 206 to 247.8 percent in 2016 and 205 to 248.8 percent in 2017 (Table 26).

⁸² <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369>, p. 25, accessed 04/02/16.

- Current Account Balance

The forecasts as percentage of GDP are 3 to 3.6 in 2016 and 3 to 3.3 in 2017 (Table 26).

European Union

On January 2015, the European Commission announced more flexibility for the application of the fiscal rules defined in the Stability and Growth Pact, which ban and penalize annual fiscal deficits superior to 3 percent of GDP, expects convergence to balanced budgets and gradual reduction of public debt to 60 percent of GDP. The flexibility comes in exchange for structural reforms and investments.⁸³

A recent appreciation of the above measurement:

“(...) the extra leeway created by the ‘adjustments’ to the Stability and Growth Pact rules has been taken up, but remains limited. Italy is without doubt the country to have made best use of this additional headroom. Latest estimates from the European Commission suggest that Italy’s fiscal policy will be expansionist by 0.7 of a point, more than in Germany (0.5pp), which is having to tackle the influx of migrants but enjoys very robust public finances. Similarly in the Netherlands, a relaxation of the structural balance of around 0.5% of GDP is expected. Constraints are greater in Eurozone countries where the deficit is still greater than 3% of GDP¹. Thus fiscal policy is likely to be slightly restrictive in France and more or less neutral in Spain and Portugal. Overall, the support expected on a Eurozone level is limited, at around 0.2% of GDP.”⁸⁴

Another recent initiative at the European Union level is the European Fund for Strategic Investments (EFSI), which “aims to revive investment in strategic projects around Europe”⁸⁵

In the BNP Paribas view:

“(...) In one year, the European Fund for Strategic Investment (EFSI) has approved financing of infrastructure projects or innovative companies worth just over EUR 10 billion, and expects that associated investment will eventually reach EUR 76 billion. The pace will need to be stepped up if the Plan’s ambition remains to encourage more than EUR 300 billion in additional investment in the European Union by the end of 2017. All in all, and although it is welcome, fiscal support remains modest. (...)”⁸⁶

According to the same view, the European Union “leaves the ECB virtually alone in the task of stimulating economic activity and prices”.⁸⁷

⁸³ For the official announcement and the rules, see: http://europa.eu/rapid/press-release_IP-15-3220_en.htm. For a summarized explanation of these new guidelines, see: <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=25258>. Accessed 04/08/16.

⁸⁴ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, accessed 04/08/16, p. 7. Accessed 04/08/16.

⁸⁵ For the official website: <http://www.eib.org/efsi/what-is-efsi/index.htm>

⁸⁶ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, accessed 04/08/16, p. 7. Accessed 04/08/16.

⁸⁷ Idem.

U.K.

- Growth

“Since mid-2013, the UK’s economic recovery has been fuelled above all by household spending: the annual growth rate of household spending more than doubled between 2012 and 2014 and accelerated again in early 2015 (from 1.1% to 2.5%, and then to an average of 3.3% in the first six months of this year). The job market was the main factor behind this trend.”⁸⁸

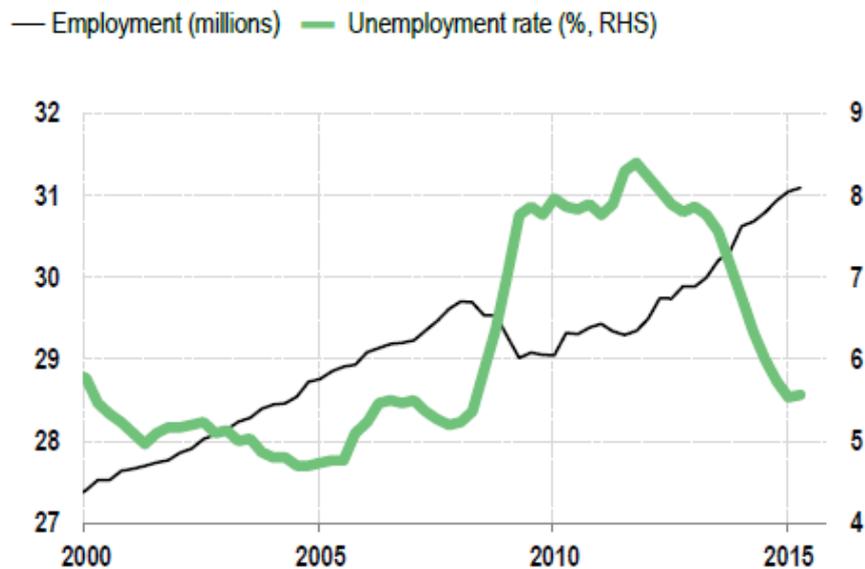
In 2015, the real GDP growth rate was 2.3 percent, according to the Eurostat.⁸⁹

Table 27 contains the forecasts for the U.K. economy. The expected real GDP growth rates are between 1.5 to 2.7 percent in 2016 and 2 to 3 percent in 2017.

- Employment

“As in the rest of the developed world, the 2008-2009 crisis triggered a very strong surge in unemployment. Between early 2008 and late 2009, payroll employment fell by nearly 4%. The unemployment rate peaked at 8.5% at the end of 2011. The situation turned around in 2012 with a strong upturn in new job creations, a trend that even gained in strength. At first sight, the transformation of the UK job market seems to be a kind of miracle: the unemployment rate dropped to 5.4% of the labour force recently, barely higher than the pre-crisis lows.”⁹⁰

Figure 75: U.K. - Employment Figures



Source: ONS

(Source: <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27045>, p. 24, accessed 04/03/16)

“As in the US, albeit to a lesser extent, the sharp drop-off in the unemployment rate masks a smaller reduction in underemployment. One sour note is the increase in part-time work, which now affects more than one job out of four. Most importantly, however, real wage trends were particularly discouraging.

⁸⁸ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27045>, p. 24, accessed 04/03/16.

⁸⁹ <http://ec.europa.eu/eurostat/web/national-accounts/data/main-tables>, accessed 04/03/16.

⁹⁰ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27045>, p. 24, accessed 04/03/16.

Between early 2008 and mid- 2014, average weekly earnings (including bonuses) deflated by consumer price inflation declined 8.8%. The drop-off was even bigger if we look solely at the private sector (-9.6%).”⁹¹

“In the UK, the adjustment in employment following the 2008-2009 global economic and financial crisis was very different than in other countries. In the vast majority of cases, employment was adjusted through volumes (number of employees), while in the UK, there was a massive adjustment through prices (wages). Inflation was higher in the UK than in North America or the rest of Europe, which played a key role. But this was not the only factor at play: the collapse in labour productivity in the UK also explains the decline in real wages.”⁹²

“(…) an upturn in employment can go hand in hand with a decline in investment, as companies turn more towards labour than capital. Yet investment is one of the key determinants of future labour productivity. Seen in this light, one of the strengths of the post-crisis period in the UK – the strong rebound in employment – can also be seen as one of its weak points – a protracted decline in productivity, which in the end results in a decline in living standards.

Although we cannot conclude from the national accounts that capital spending has contracted (this was the case in 2008-2009, but gross spending has since rebounded), investment as a share of demand has diminished, and this is even more apparent if we exclude investment in buildings. After taking into account capital depreciation, it seems rather clear that the UK’s productive sector has drastically modified its use of production resources in favour of labour in recent years. The increase in the cost of capital relative to the cost of labour is due not only to the decline in real wages, but also to more difficult access to financing. The Bank of England’s very accommodating monetary policy triggered a decline in bond yields. But the debt reduction process in the financial sector, coupled with a more cautious risk management, explains the sluggish growth of lending. Small and mid-sized companies were hit hardest, since they do not enjoy the same access to bond markets that large companies do.”⁹³

The forecasts for the unemployment rate are between 4.5 to 5.5 percent in 2016 and 2017 (Table 27).

- Inflation

“The deterioration in the purchasing power of wages can be explained by the rapid (but short-lived) surge in inflation, which was generally higher than in the rest of the developed world. In fall 2011, at a time when oil prices were rebounding, the annual inflation rate was 5%. At the same time, inflation in the US and the eurozone was limited to 3.9% and 3%, respectively. Since year-end 2013, in contrast, inflation has clearly dropped below the Bank of England’s 2% target, and until recent months, it is the moderation of nominal wages that has been curbing the increase in purchasing power.”⁹⁴

The forecasts for the inflation rate are between 0.5 to 1.7 percent in 2016 and 1.9 to 2 percent in 2017 (Table 27).

- Policy interest rates

The main short run interest rate set by the Bank of England is the ‘Bank Rate’:

“Bank Rate had a direct influence on interest rates in the domestic banking system, being the rate at which the Bank of England, acting as lender of last resort, would normally lend (…).”⁹⁵

Other relevant reference rate in the U.K. economy is the London Interbank Offered Rate (Libor), which is an average of lending rates for interbank loans in London:

⁹¹ Idem.

⁹² Idem.

⁹³ Idem.

⁹⁴ Idem.

⁹⁵ http://www.bankofengland.co.uk/statistics/pages/iadb/notesiadb/wholesale_baserate.aspx, accessed 04/02/16.

“LIBOR (or ICE LIBOR) is the world’s most widely-used benchmark for short-term interest rates. It serves as the primary indicator for the average rate at which banks that contribute to the determination of LIBOR may obtain short-term loans in the London interbank market. Currently there are 11 to 18 contributor banks for five major currencies (US\$, EUR, GBP, JPY, CHF), giving rates for seven different maturities. A total of 35 rates are posted every business day (number of currencies x number of different maturities) with the 3-month U.S. dollar rate being the most common one (usually referred to as the “current LIBOR rate”).”⁹⁶

Table 37 contain market forecasts and projections for the Bank Rate, 3-month Libor rate for loans denominated in sterling’s (£ or GBP) and yields of U.K. government bonds, which are called ‘gilt’.

The Bank of England is planning to normalize its monetary policy. However, according to market expectations, the Bank Rate should maintain its actual level (0.5%) during 2016 and will rise in 2017.

- Current account

Apart from declined labor productivity, the appreciation of the Sterling also contributed to loss in competitiveness and deterioration in the external account:

“(…) Since early 2013, Sterling has appreciated strongly, with a 16.8% increase in the effective exchange rate. (…)”

The current account balance is deteriorating since 2012 (as % GDP): –1.7 in 2011; –3.7 in 2012; –4.5 in 2013; –5.9 in 2014. In 2015, the estimated value is -4.7 (Table A. 12). The forecasts are -4.8 to -4.3 percent in 2016 and -3.8 to -3.5 percent in 2017 (Table 27).

- Brexit

There is an ongoing debate about the exit of Britain from the European Union, since February 20th when the British Prime Minister David Cameron set a date (June 23rd) for a referendum on the topic.

The issues at stake, the implications of the exit for U.K. and for the EU, the opinion polls can be followed online. See, for instance:

- a) The Economist

“A background guide to ‘Brexit’ from the European Union”,

<http://www.economist.com/blogs/graphicdetail/2016/02/graphics-britain-s-referendum-eu-membership>, accessed on 04/03/16;

- b) Financial Times

“UK’S EU REFERENDUM”, <https://next.ft.com/eu-referendum>, accessed on 04/03/16;

- c) VoxEU.org – a portal for research-based policy analysis of the CEPR (a network of Economists mainly from universities throughout Europe)

<http://www.voxeu.org/search/node/uk%20brexit>.

The above forecasts for U.K. did not take into account the ‘Brexit’ debate.

⁹⁶ <http://www.investopedia.com/terms/l/libor.asp>, accessed 04/02/16.

Euro area

- Growth

“(…) In the euro area, stronger private consumption supported by lower oil prices and easy financial conditions is outweighing a weakening in net exports. (…)” (IMF, 2015f, p. 3).

In 2015, the real GDP growth rate is 1.6 percent, in contrast to 0.9 percent in 2014.

“(…) Internal demand, particularly household consumption, is likely to remain the main driver of European growth in 2016 (…)”⁹⁷

“Several factors are contributing to this. The first is obviously the recovery in the employment market virtually everywhere in Europe. (….) European households’ income has been underpinned in recent quarters by dynamic job creation in the countries where employment was worst affected by the crisis (salaried employment was up by 2.0% to 2.5% a year in mid-2015 in Spain, Portugal and Ireland), as well as by a fairly strong increase in per-capita remuneration in some countries that are close to full employment, such as Germany (+2.5% in the same period). In addition to these “structural” factors, there is of course the weakness of oil prices (…). Activity levels in 2016 should also benefit from looser fiscal policies, which are likely to be neutral or even slightly expansionary in several major eurozone countries, mostly as a result of cuts to taxes and social security contributions, or refugee-related spending. As regards internal demand, the main uncertainty is the future development of investment trends. With the demand outlook strengthening, companies could step up their capex, given favourable financing conditions. The expected recovery in housing investment by households in some countries could also mean that investment will play a greater role in the composition of growth in 2016.”⁹⁸

The forecasts for real GDP growth rate are in the range of 1 to 2 percent in 2016 and 2017 (Table 28).

- Employment

The unemployment rate dropped from 11.6 percent in 2014 to 10.9 in 2015.⁹⁹

The forecasts are in the range of 10.1 to 10.5 percent in 2016 and 9.6 to 10.2 percent in 2017 (Table 28).

- Inflation

“(…) although demand is slightly more resilient, companies are feeling little pressure on costs. In most member states, still high unemployment levels and continued efforts to boost competitiveness are significantly limiting wage pressures (except in Germany), while the fall in energy prices is reducing production costs. Little by little, the recovery in business activity, the absorption of excess production capacity and the strength of household demand, particularly in the service sectors, are likely to lead to somewhat stronger growth in consumer prices. Nevertheless, at this stage, the trend is too slow for comfort.”¹⁰⁰

The forecasts are in the range of -0.1 to 1.1 percent in 2016 and 1.1 to 1.6 percent in 2017 (Table 28).

- Policy interest rates

⁹⁷ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27370>, accessed 04/05/16.

⁹⁸ Idem.

⁹⁹ <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tsdec450&plugin=1>, accessed 04/03/16.

¹⁰⁰ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27370>, accessed 04/05/16.

The main policy rate of the ECB (the refinancing rate) applies to Main Refinancing Operations (MRO), which is a “regular open market operation executed by the Eurosystem (...) for the purpose of providing the banking system with the amount of liquidity that the former deems to be appropriate. Main refinancing operations are conducted through weekly standard tenders (in which banks can bid for liquidity) and normally have a maturity of one week.”¹⁰¹

Another relevant short-term interest rate, which is a reference for money markets, is the Euro Interbank Offered Rate (Euribor):

“(...) a daily reference rate, published by the European Money Markets Institute, based on the averaged interest rates at which Eurozone banks offer to lend unsecured funds to other banks in the euro wholesale money market (or interbank market).”¹⁰²

In the euro area, individual governments are in charge of the fiscal policy and issue their own securities. As we saw earlier, there is financial fragmentation, see for instance in the peak of the Greek crisis (sovereign spreads in Figure 30 panel 2 and corporate spreads in Figure 30 panel 4). Thus, in the forecasts of interest rates, usually some weighted average of yields of national bonds is used, or the forecast refers to a specific national bond.

Table 36 and Figure 87 show market expectations and projections for the refinancing rate and yields from government bonds in the Euro area.

Figure 76 shows other set of market expectations for the policy rates of FED (federal funds rate), ECB (deposit rate) and Bank of England (Bank Rate). According to them, FED will raise the interest rate in 2016 and forwards in a linear path. U.K. will follow similar pattern but will start the process in 2017. ECB will ease further the monetary policy in 2016 and its deposit rate is expected to become positive only in 2019. We see also that market revised downwards the expectations in February 2016 in comparison to November 2015.

In concerning the monetary policy divergence between U.S. and U.K. in one side and Euro area and Japan in the other, BNP Paribas reports that:

“There will not be a currency war. Without expressly coordinating their actions, this is the joint message issued by the ECB and the Fed in early March. Their communication helped restore calm in the financial markets and further reduced the associated risks (...).”¹⁰³

In the BNP Paribas view:

“If the central banks were really counting solely on the external sector to stimulate their economies, then a currency war would be justified, since a depreciated currency would be much better at locking in trade growth. At a time of sluggish growth, however, any gains by some would mean losses for others, and any monetary policy actions designed to promote currency depreciation would certainly trigger similar retaliation. Some have seen the monetary policy actions of recent years as an illustration of such an offensive, but we have long held a more cautious view. (...).”¹⁰⁴

¹⁰¹ <https://www.ecb.europa.eu/home/glossary/html/act4m.en.html#223>, accessed 04/01/16.

¹⁰² <https://en.wikipedia.org/wiki/Euribor>, accessed 04/01/16.

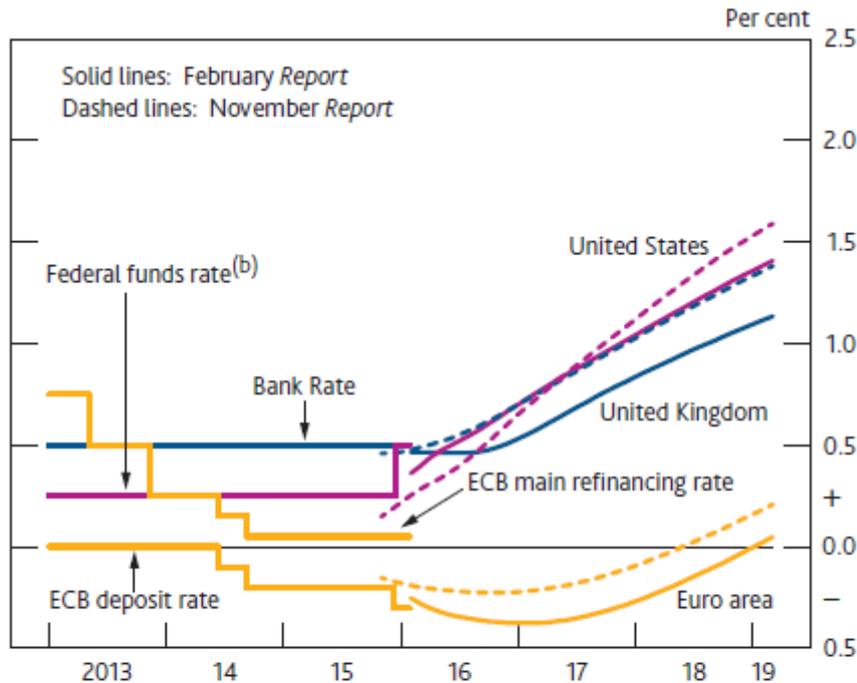
¹⁰³ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, accessed 04/08/16.

¹⁰⁴ Idem.

However, countries do prevent their currencies from appreciate. For instance, countries in the European Union and outside the Euro:

“At the end of last year, several European central banks introduced negative interest rates, anticipating or reacting to a similar decision by the ECB, which only revived fears of a currency war. The reason the central banks of Denmark, Sweden and Switzerland introduced negative interest rates, pulling them ever lower, was clearly to prevent their currencies from soaring against the euro, a trend that would have eroded their external competitiveness.”¹⁰⁵

Figure 76: U.K., U.S., EMU, Japan – Market Expectations of Policy Rates



Sources: Bank of England, Bloomberg, European Central Bank (ECB) and Federal Reserve.

(a) The February 2016 and November 2015 curves are estimated using instantaneous forward overnight index swap rates in the fifteen working days to 27 January 2016 and 28 October 2015 respectively.

(b) Upper bound of the target range.

(Source: Bank of England, 2016, p. 1, accessed 04/01/16)

According to PNB Paribas, the monetary policy of the ECB is not actively pursuing to boost exports:

“(…) At a time of low inflation, the ECB can only welcome the euro’s depreciation, although without actively seeking it. The decisions announced in March removed any ambiguity. By changing the weighting of its various policy tools to favour those that stimulate lending and to counter negative rates, the ECB clearly affirmed that its actions were directed internally.”¹⁰⁶

The ECB monetary policy is more concerned with the possibility that falling oil prices will drop the inflation and thus raise real interest rates and real wages, with adverse consequences for investments and perhaps for employment:¹⁰⁷

¹⁰⁵ Idem.

¹⁰⁶ Idem.

¹⁰⁷ Employment may not be affected by the drop in inflation if labor productivity raises enough to keep the equilibrium in the labor market, assuming that nominal wages do not change or change less than implied by labor productivity growth (i.e. the “second-round effect” or “slower wage growth” mentioned in the text).

“At the beginning of April, the euro price of Brent Crude was 30% lower than a year ago. Although it has a direct negative effect on consumer prices, the fall in the oil price is generally positive for medium-term inflation prospects. This is less true in current circumstances, however, as the risks of second round effects (i.e. slower wage growth) are greater: it is clear that a deflationary shock would not have the same impact when inflation is close to 2% and expectations well-anchored as it has when inflation is close to 0% and expectations are on the slide. Under these conditions, real interest rates tend to rise and wages could stagnate. (...)”¹⁰⁸

For PNB Paribas, the above reasoning may have motivated the last measurement of ECB’s monetary policy:

“The fear of second round effects probably explains the scale of monetary easing announced in March: a 10 basis point cut in the deposit facility rate, to -0.4%, an increase in the rate of monthly purchases under the quantitative easing programme from EUR 60 billion to EUR 80 billion, and the launch of four new long-term refinancing operations (...)”¹⁰⁹

The change in ECB approach of monetary policy instruments on March 2016:

“By announcing during the press conference that the lower bound of interest rate policy had been reached, but that the ECB does not lack ammunition, Mr Draghi signalled a step change in the bank’s approach. Abandoning the quest to lower the euro’s exchange rate (which explains its recent rise against the dollar), monetary policy will now focus on non-conventional tools, and in particular measures to boost lending. The latest statistics from the ECB have indicated a gradual recovery in Eurozone net lending. But since mid-2014 the most notable aspect has been the reduction in the cost of borrowing. Peter Praet, the ECB’s Chief Economist, noted that the fall in financing costs for non-financial companies since mid-2014 was equivalent to what might have been achieved with a 100 basis points reduction in the main refinancing rate, currently at 0%.”¹¹⁰

- Public debt

In 2015, “the fiscal deficit fell by just over half a point of GDP (to 2.0%), as did government debt (to 91.2%).”¹¹¹

The forecasts for the public debt as percentage of GDP are in the range of 90.2 to 92.8 percent in 2016 and 88.5 to 91,5 percent in 2017 (Table 28).

France

- Growth

Real GDP growth rate is 1.2 in 2015, in contrast to 0.2 in 2014. ¹¹² The forecasts are in the range of 0.5 to 1.5 percent in 2016 and 0.5 to 1.7 percent in 2017 (Table 29).

“In 2016, we are more likely to see a levelling off of the jobless rate rather than an inversion of the unemployment curve. With growth estimated at 1.4%, the French economy should generate enough jobs to keep pace with the increase in the active population, but not much more.(...)” ¹¹³

¹⁰⁸ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, accessed 04/08/16, p. 6.

¹⁰⁹ Idem, p. 7.

¹¹⁰ Idem, p. 7.

¹¹¹ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27370>, accessed 04/05/16.

¹¹² <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tec00115&plugin=1>, accessed 04/06/16.

¹¹³ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369>, accessed 04/06/16, p. 10.

- Employment

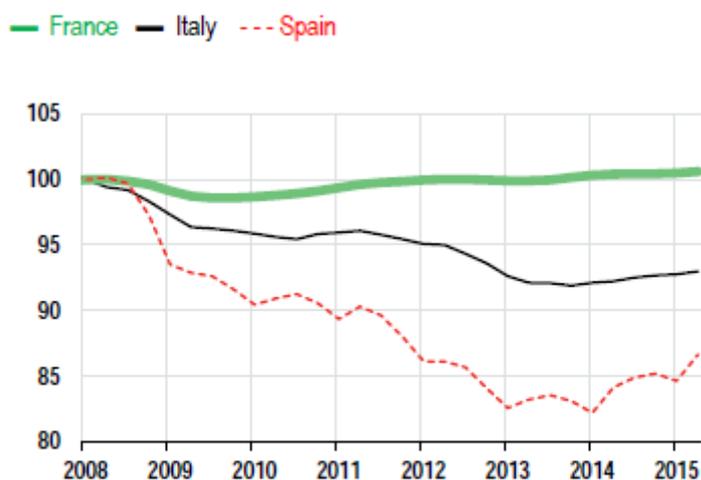
The unemployment rate in 2015 rose to 10.4 percent from 10.3 percent in 2014. In 2007 the rate was 8 percent.

“France is the only major eurozone country in which the unemployment rate continues to rise. (...)”¹¹⁴

“(...) Unlike Italy and Spain, however, which experienced major net job destructions, French employment remained broadly stable (see chart). After a decline in 2009, French employment recovered gradually, but only modestly, essentially thanks to subsidised contracts in the non-market sector (...). In Q3 2015, employment barely surpassed the early 2008 level. Net job creations failed to absorb the new arrivals to the job market. (...)”¹¹⁵

Figure 77: Employment in France, Italy and Spain

Q1 2008 = 100



Source: Eurostat

(Source: <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369>, accessed 04/06/16)

“(...) The resilience of the French job market during the crisis years was essentially due to the non-market sector through subsidised contracts. This probably helps explain the slowdown in productivity. Without this sector, employment would have contracted by 1% between 2011 and 2014. After a timid turnaround in 2015, employment in the business sector is expected to accelerate this year.”¹¹⁶

“(...) employment is fairly dynamic for temporary job contracts. This is the category that was hit hardest by the crisis, and today it is the one providing most of the job growth, which makes the improvement all the more precarious.”¹¹⁷

“On the whole, although the unemployment rate is expected to ease slightly (...), we will probably have to wait until 2017 before seeing a veritable inversion of the unemployment curve. Even so, we expect the year that begins to mark a turning point for the business sector.”¹¹⁸

The forecasts for the unemployment rate are in the range of 9 to 10.3 percent in 2016 and 9 to 10.2 percent in 2017 (Table 29).

- Inflation

¹¹⁴ Idem.

¹¹⁵ Idem.

¹¹⁶ Idem, p.11.

¹¹⁷ Idem, p.10.

¹¹⁸ Idem, p.11.

The forecasts for the inflation rate are in the range of 0.3 to 1 percent in 2016 and 1.1 percent in 2017 (Table 29).

- Public debt

The fiscal deficit decreased from -3.9 percent of GDP in 2014¹¹⁹ to -3.5 in 2015¹²⁰.

The forecasts for the general government gross debt (as % of GDP) are 96.6 to 98 in 2016 and 97 to 98 in 2017 (Table 29).

“For the second straight year, France has been identified¹ by the European Commission as showing excessive macroeconomic imbalances. Those imbalances concern the elevated public debt, the high jobless rate and, most importantly, the insufficient competitiveness of goods and services supply. As poor competitiveness reflects the weak performance of the productive system as a whole, not just of export companies, it is perhaps the best illustration of the French economy's deep-seated problems.”¹²¹

- Current account balance

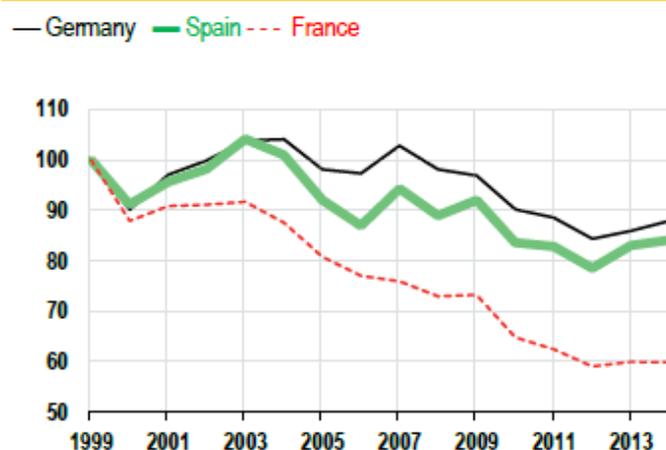
The loss in market share in the exports of goods:

“French exports accounted for 3.7% of global exports of goods and services in 2014, down from 5.7% in 1999. The cumulated losses in market share amount to 35.6%. It stands at 40% for goods. The French lost market share is partly due to the emerging economies' incursion on global markets since the late 1990s. It is therefore a common feature in all developed countries, but the decline has been much larger in France than in the rest of Europe. Between 1999 and 2014, the cumulated fall in Germany's goods export market share was only 12%, and the figure for Spain was 16%. In Italy, it was 31%. Only the UK fared worse than France, with an overall decline of 45%².”¹²²

² These figures relate solely to goods exports, which make up around 75% of French exports. France did better in exporting services, with its market share falling 24% between 2000 and 2014 as opposed to 45% in Italy and 26% in Spain, although the decline was only 14% in the UK and 2.7% in Germany.”¹²³

Figure 78: France, Germany and Spain - Market Share in the Exports of Goods

1999 = 100



Source: Eurostat.

¹¹⁹ <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tec00127&plugin=1>, accessed 04/08/16.

¹²⁰ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p. 10, accessed 04/08/16.

¹²¹ Idem.

¹²² Idem.

¹²³ Idem.

(Source: <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, accessed 04/08/16)

The main conclusion for the poor performance:

“(…) France's global market share was adversely affected by the fact that a large proportion of its exports were directed to Europe, a region that is growing at a slower pace than the rest of the world. (…)”¹²⁴

However,

“(…) it also exported in product markets that grew faster than the global average, which had the opposite effect. Overall, (…) the sharp decline in France's market share is mainly due to an inadequate quality/price ratio.”¹²⁵

The temporary improvement in the exports of goods:

“France's current-account deficit had changed very little since 2008, remaining around 0.9% of GDP, but 2015 brought a significant improvement in France's trade position. Its current-account deficit fell 0.8 points to 0.1% of GDP. Most of that correction was due to the goods trade balance, where the deficit narrowed from EUR 57.6 bn (2.7% of GDP) to EUR 45.2 bn (2% of GDP).

However, the improvement was entirely due to lower oil prices (…)”¹²⁶

The forecasts for the current account balance are -0.4 to -0.1 percent of GDP in 2016 and -0.8 to -0.4 in 2017 (Table 29).

Germany

- Growth

Real GDP growth rate is 1.7 in 2015, in contrast to 1.6 in 2014.¹²⁷ The forecasts are in the range of 1.3 to 2.5 percent in 2016 and 1 to 2 percent in 2017 (Table 30).

The main economic drive and the main challenge this year:

“(…) In 2016, the rebalancing of growth drivers towards internal demand looks set to continue, boosted by the labour market and purchasing power thanks to wage growth and low inflation. Meanwhile, the rapid integration of refugees of working age into the labour market will be the major challenge for this year, and represents a real opportunity to reverse the ageing of the population. Lastly, the good health of the public finances will help fund the integration of this new workforce and support economic activity.”¹²⁸

Consumption growth rates:

“(…) The rate of growth in real private consumption, which we predict will come to 2.2%, is actually expected to be outshone by the rate of growth in real public consumption (+3.1%) in 2016. Having

¹²⁴ Idem.

¹²⁵ Idem.

¹²⁶ Idem, p.11.

¹²⁷ <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tec00115&plugin=1>, accessed 04/06/16.

¹²⁸ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369>, accessed 04/06/16, p. 8.

expanded by a mere 0.2% last year, construction investment this year looks set to increase by 2.5% thanks to a substantial increase in residential construction and public-sector investment.”¹²⁹

Housing market:

“(…) the effect of low interest rates is felt in the housing market by improving housing affordability. In combination with the positive outlook for incomes and employment, it has boosted household spending for real estate. As a result, house prices have risen sharply in recent years, in particular in the big cities. In 2015, house prices in the seven major cities were 45% higher compared with five year earlier. The strong demand for housing has stimulated construction activity. In 2015, more dwellings were completed than in the year before (245 000 units). However, this has been insufficient to dampen prices. The rapid increase in construction orders indicates that the construction boom should last longer. Moreover, the current inflow of refugees should support residential construction in the medium term. The sharp rise in property prices could pose a threat for the banking sector in the event of a price correction. The Bundesbank has warned that prices have been outpacing both economic and demographic fundamentals. However, in a monetary union, the national authorities have limited possibilities to dampen mortgage lending other than by taking macroprudential measures, such as minimum standards for residential real-estate loans. (…)”¹³⁰

Non-residential investments:

“Despite favourable financing conditions and rising capacity utilisation, business investment has remained subdued. At the same time, savings surplus for the non-financial corporation sector has been very high. It is one of the main contributors to Germany’s large current account surplus. According to the investment survey, manufacturers expect to increase their capital spending by 4% in 2016, the same pace as in 2015. (….) Instead of investing in Germany, excess savings have been used to finance equity acquisitions aimed at establish strategic ties with other firms in the global value chain. In addition, even though the public sector would be able to borrow at negative real interest rates, public investment is likely to remain lacklustre. This is partly due to a mismatch between the resources allocated to the different layers of government. This is in particular hampering investment at a municipal level. Moreover, investment is also held up by complicated planning procedures. The government is currently exploring how it could involve more private financing in public investment projects.”¹³¹

- Employment

The unemployment rate dropped from 5 percent in 2014 to 4.6 percent in 2015. The forecasts are in the range of 4 to 6.3 percent in 2016 and 4 to 6 percent in 2017 (Table 30).

“(…) the impact that the inflow of refugees will have on the German labor market will take some time to emerge. (….) We expect the seasonally adjusted jobless total to start creeping up from around the middle of 2016, a trend that will continue in 2017. Contrary to previous forecasts, however, the average number of people out of work in 2016 will drop by a good 50,000 as against 2015 and is unlikely to be significantly higher than the 2015 level (2.79 million) in 2017 either.”¹³²

- Inflation

¹²⁹

https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf, accessed 04/06/16, p. 8.

¹³⁰ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, accessed 04/08/16, p. 8.

¹³¹ Idem, p. 8.

¹³² Idem, p. 11.

The inflation rate (HICP, annual average rate of change) fell from 0.8 percent in 2014 to 0.1 percent in 2015.¹³³

“Despite strong activity growth, inflation has remained weak. HICP inflation even turned temporarily negative in February (-0.2%) before rebounding in March to 0.1%. These developments are mainly energy-related. Excluding energy, inflation is around 0.8%, which is still lower than the ECB inflation objective – below but close to 2%.”¹³⁴

The expected inflation rates are 0 to 1.1 percent in 2016 and 1.5 to 1.7 percent in 2017 (Table 30).

- Public debt

The fiscal surplus in Germany grew from 0.3 percent of GDP in 2014 to 0.7 percent in 2015. The general government gross debt dropped from 74.9 percent of GDP in 2014 to 71.6 percent in 2015.¹³⁵ The expectations for the general government gross debt as percentage of GDP are 68.2 to 68.8 in 2016 and 65.8 to 65.9 in 2017.

“(…) the German government recently agreed on maintaining a balanced budget for the coming four years. The agreement settled a conflict between the two coalition partners. The Christian Democrats (CDU) pleaded for a prudent policy, while the Social Democrats (SPD) were in favour of an expansionary budget. Rising tax receipts driven by favourable growth assumptions and falling debt service costs have created room for increased spending for refugees, security and infrastructure. (…)”¹³⁶

- Immigration costs and demographic impacts in the short run

Estimates of refugee costs in the short run:

“(…) EUR 8 billion has been earmarked for welcoming refugees in 2016, but some suggest that twice this amount could be needed. The European Commission arrives at more or less the same conclusions. It puts the cost of refugee arrivals at 0.25 point of GDP in 2016, from 0.1 point in 2015, and expects a smaller negative effect on the public finances. The Commission believes that the budget surplus will still be 0.5% of GDP in 2016. In such circumstances, total debt will fall to less than 69% of GDP in 2016, from more than 71% in 2015, and is likely to continue its rapid fall, taking it below the 60% mark by 2020.”¹³⁷

The immigration from areas in conflict, according to Allianz:

“(…) we estimate that around 1.2 million people will be recognized as having the legal status of "refugee" in the period from 2015 until 2017.

(…). The decisive parameter will be net immigration, i.e. how many refugees, including their families, actually remain in Germany. This gives rise to another series of difficult questions: how quickly will migrants who have their asylum applications declined leave the country? Will recognized refugees move

¹³³ <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tec00118&plugin=1>, accessed 04/07/16.

¹³⁴ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, accessed 04/08/16, p. 8.

¹³⁵ The figures for 2014 are from <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tec00127&plugin=1> and <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tsdde410&plugin=1>. The figures for 2015 are from <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p. 8, accessed 01/04/16.

¹³⁶ Idem.

¹³⁷ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369>, accessed 04/06/16, p. 9.

back to their country of origin if the situation there improves? How much immigration is likely to come as a result of family members joining relatives who have already moved to Germany? In our estimate of the economic implications of migration, we have assumed net immigration of 1.8 million refugees (incl. family reunion) in the period between 2015 and 2017.”¹³⁸

The immigration from EU countries and the total demographic impact in the short run, according to Allianz:

“In addition to the arrival of refugees, Germany is also still witnessing significant net immigration from other EU countries. This means that, despite a negative birth ratio of around 200,000 a year, the German population is expected to expand by around 2.5 million, or around 3%, between 2015 and 2017.”¹³⁹

Estimates of refugee costs in the short run, according to Allianz:

“In order to estimate the impact of refugee migration on government finances, we have looked at average cumulative net immigration for the year. Our scenario suggests that average cumulative population growth in 2017 will come to around 1.6 million people compared with 2014. We have put the annual government costs for accommodation and care, as well as integration measures, at EUR 15,000 per refugee. We expect the costs per refugee to be slightly higher than the EUR 1,000 a month that is most commonly cited at the moment, particularly because of the plans to step up the integration measures. Based on these assumptions, we arrive at gross additional government spending of EUR 16.5bn this year and EUR 24.0bn next year. These costs will, however, fall if refugees find work. Initially, however, refugees are more often likely to find part-time jobs and/or jobs paying relatively low salaries, meaning that they will still have certain entitlements to social benefits from the state. Further training measures and language courses will also come at a cost. As a result, even for those refugees who find work we still see additional state spending of EUR 5,000 a year.

A large proportion of the refugees are of working age. Many of the ones who have their status recognized will not, however, be able to register as seeking work right away due to the need to complete training measures such as language and further training courses. Consequently, we estimate a cumulative increase in the number of registered refugees of working age of 700,000 in the period leading up to 2017. Around 200,000 can be realistically expected to have found a job by 2017. Taking into account the costs saved by the state as a result, additional state spending will still come to just under EUR 16bn this year and EUR 22bn next year.”¹⁴⁰

- Current account balance

The current account balance as a percent of GDP grew from 7.4 in 2014 (Table A. 12) to 8.1 in 2015¹⁴¹. The forecasts are in the range of 7.7 to 8 in 2016 and 7.5 to 7.6 in 2017 (Table 30).

“Although there is still a certain degree of uncertainty regarding how exports will develop, we do not expect the current global economic slowdown to become further entrenched. Thanks to the healthy price competitiveness of German exporters, exports are likely to get back into their stride in the course of the year. Real average export growth in 2016 is expected to come in at around 3% following an increase of 5.4% last year. (...)”¹⁴²

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https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf, accessed 04/08/16, p. 9.

139 Idem.

140 Idem, p. 10.

141 <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369>, accessed 04/06/16, p. 8.

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https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf, accessed 04/08/16, p. 8.

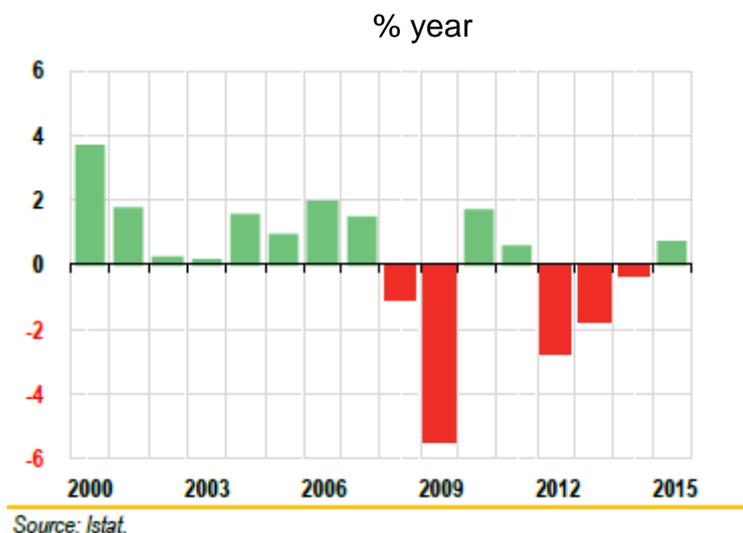
Italy

- Growth

“In 2015, Italy came out of recession, after three consecutive years of contraction and despite a negative contribution from net exports. The Italian recovery was supported by domestic demand, which positively contributed to the overall growth for the first time in five years.”¹⁴³

“(…) Real GDP rose by 0.8%, after three consecutive contractions, which had brought the economy 9 percentage points below the 2007 level. (…)”¹⁴⁴

Figure 79: Italy – Real GDP Growth Rate



(Source: <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p.12, accessed 04/09/16)

From a sectoral perspective:

“Conditions in the manufacturing sector strengthened. Value added increased by 1.5%, with a mixed scenario by sector (…). Activity in the services sector rose by less than 0.5% in 2015, the same rate as in 2014, while construction further suffered, with value added more than 30 percentage points below the pre-crisis level.”¹⁴⁵

Consumption:

“During the crisis, Italian households had significantly reduced their expenditures, with a cumulative decline of almost 8 percentage points in real terms. Consumption resumed increasing in the second part of 2013. Last year, private expenditure rose by almost 1%, as in 2014 (…)”¹⁴⁶

“(…) Households benefited from the improvement of labour market conditions as well as from the recovery of financial wealth. (…)”¹⁴⁷

¹⁴³ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives> accessed 04/09/16, p. 12.

¹⁴⁴ Idem.

¹⁴⁵ Idem.

¹⁴⁶ Idem.

¹⁴⁷ Idem.

Household's financial wealth:

“In the second part of 2015, total value of financial assets owned by Italian households increased to almost EUR 3.9 billion, partly recovering the loss recorded in the first part of the crisis. Over the recent years, the composition of wealth has strongly changed, as a consequence of both the persisting uncertainty surrounding the economic outlook and the low level of interest rates. Italian households have significantly reduced the share of debt securities, both private and public, while increasing that of investment fund shares and that of deposits”¹⁴⁸

Gross fixed capital formation as percentage of the GDP is declining since 2007:

2007	2008	2009	2010	2011	2012	2013	2014	2015
21.6	21.2	20.0	19.9	19.7	18.4	17.2	16.6	16.5

Source: <http://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tec00011&language=en>, accessed 04/09/16.

According to OECD:

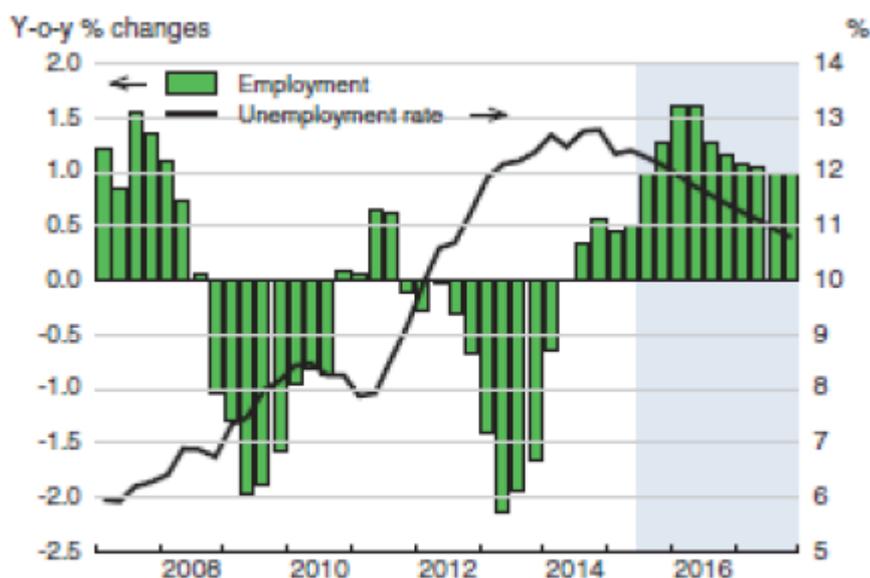
“(…) bank credit remains constrained due to the large and still rising amount of non-performing loans, hampering investment growth. (…)”¹⁴⁹

Growth forecasts are in the range of 0.5 to 1.6 percent in 2016 and 0.5 to 1.5 percent in 2017 (Table 31).

- Employment

Total unemployment rate declined from 12.7 percent in 2014 to 11.9 percent in 2015, which it is almost twice its pre-crisis rate.¹⁵⁰

Figure 80: Italy - Labor Market



Source: OECD Economic Outlook 98 database.

(Source: <http://www.oecd.org/economy/italy-economic-forecast-summary.htm>, accessed 04/09/16)

¹⁴⁸ Idem.

¹⁴⁹ <http://www.oecd.org/economy/italy-economic-forecast-summary.htm>, accessed 04/09/16.

¹⁵⁰ <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tsdec450&plugin=1>, accessed 04/09/16.

“(…) The composition of employment continued to shift towards more stable contract arrangements, as a result of labour market reforms, which consisted in new rules on individual dismissal and approved social contribution relief. (…)”¹⁵¹

Unemployment forecasts are in the range of 10.5 to 11.9 percent in 2016 and 10.5 to 11.6 percent in 2017 (Table 31).

- Inflation

The inflation rate (HICP, annual average rate of change) fell from 0.2 percent in 2014 to 0.1 percent in 2015.¹⁵²

“(…) Large, although declining, economic slack will contain consumer price and wage inflation.”¹⁵³

Figure 81: Italy – Inflation and Output Gap



(Source: <http://www.oecd.org/economy/italy-economic-forecast-summary.htm>, accessed 04/09/16)

The inflation forecasts are in the range of 0 to 0.8 percent in 2016 and 0.9 to 1 percent in 2017 (Table 31).

- Public debt

The fiscal deficit fell from -3 percent in 2014¹⁵⁴ to -2.7 percent in 2015¹⁵⁵.

The forecasts for the general government gross debt as percent of GDP are 132.1 to 132.3 in 2016 and 130.4 to 130.5 in 2017 (Table 31).

¹⁵¹ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives> accessed 04/09/16, p. 12.

¹⁵² <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>, accessed 04/09/16.

¹⁵³ <http://www.oecd.org/economy/italy-economic-forecast-summary.htm>, accessed 04/09/16.

¹⁵⁴ <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tec00127&plugin=1>, accessed 04/09/16.

¹⁵⁵ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p. 12, accessed 04/08/16.

- Current account balance

“In 2015, net exports shaved 0.3 percentage points off the GDP growth rate, as imports rose more than exports (respectively +6% and +4.3%). In value terms, exports of goods and services increased close to EUR 500 bn, going above 30% of GDP for the first time ever. International shipments to some advanced countries strongly rose, such as the United States (+20.9%), Spain (+10.1%) and the United Kingdom (+7.3%). A huge decline was recorded in trade with Russia (-25.2%), while exports to China slowly fell (-0.7%). At the beginning of 2016, Italian exports decelerated, suffering from the slowdown in main emerging economies.”¹⁵⁶

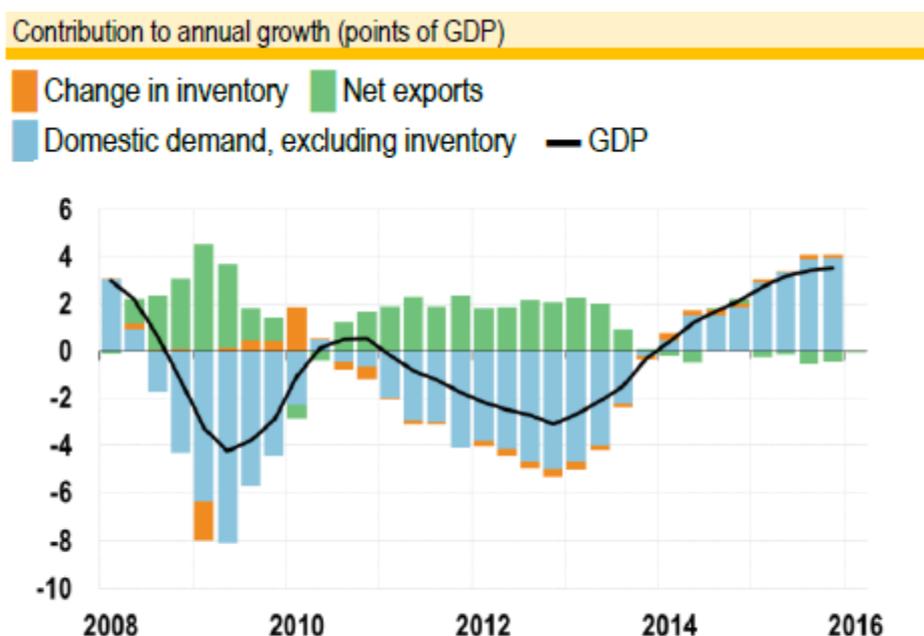
In spite of the deficit in the trade balance in 2015, the surplus in the current account increased (as % GDP) from 1.9 in 2014 (Table A. 12) to 2.1 in 2015¹⁵⁷. The forecasts are 2 to 2.3 in 2016 and 1.7 to 2 percent in 2017 (Table 31).

Spain

- Growth

“(…) GDP is still in a catch-up phase and will probably hold to a relatively robust growth rate. Containing the negative effects of the slowdown in the emerging countries on its economy, Spain is expected to report much stronger growth than of most its Eurozone partners in 2016. GDP growth could reach 2.6% this year, after 3.2% in 2015.”¹⁵⁸

Figure 82: Spain – Domestic Demand and Net Exports



Source: INE

(Source: <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p.15, accessed 04/09/16)

¹⁵⁶ Idem.

¹⁵⁷ Idem.

¹⁵⁸ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p. 14, accessed 04/09/16.

“Domestic demand is expected to slow, but will continue to fuel growth. Companies are still inclined to invest. They will benefit from advantageous financial conditions, thanks to the ECB’s very accommodating monetary policy. Low commodity prices should also help them consolidate margins. Given the expected increase in demand, all these factors should continue to support investment in capital goods. This environment, coupled with a slight upturn in real estate prices (+3.6% in 2015, vs. +0.3% in 2014), should trigger an upturn in construction investment.”¹⁵⁹

Growth forecasts are in the range of 2.5 to 2.8 percent in 2016 and 2.1 to 2.4 percent in 2017 (Table 32).

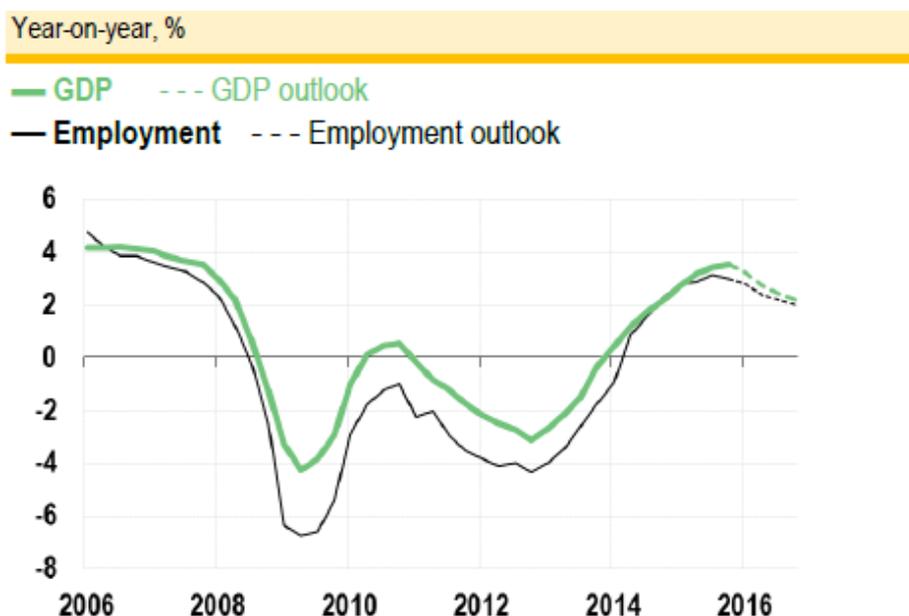
- Employment

The unemployment rate declined from 24.5 percent in 2014 to 22.1 percent in 2015.¹⁶⁰

“Employment increased 2.9% in 2015, with 528,000 job creations. Spanish companies will continue to create jobs this year as well. Employment should continue to rise at a relatively strong pace according to the European Commission and PMI surveys. Wage increases will remain small. Once again, the services sector, where productivity is low, is expected to make the biggest contribution to job creations this year². (...)”¹⁶¹ (See *Purchasing Managers’ index (PMI)* in the Lexicon).

² This sector contributed 80% to the increase in employment in 2015.”¹⁶²

Figure 83: Spain – Employment and GDP



Source: INE

(Source: <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p.15, accessed 04/09/16)

¹⁵⁹ Idem.

¹⁶⁰ <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tsdec450&plugin=1>, accessed 04/09/16.

¹⁶¹ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, p. 14, accessed 04/09/16.

¹⁶² Idem.

The forecasts for unemployment are in the range of 19.9 to 21 percent in 2016 and 18.6 to 20 percent in 2017 (Table 32).

- Inflation

Since the unemployment rate is still very high, it will prevent wage increases.

According to BNP Paribas:

“(…) The sharp drop in oil prices through early 2016, and to a lesser extent, the euro’s appreciation, should hold consumer price trends in negative territory this year. Wage moderation will also limit the upward pressure on core inflation.”¹⁶³

The forecasts for inflation are in the range of -0.9 to 0.9 percent in 2016 and 0.9 to 1 percent in 2017 (Table 32).

- Public debt

The public deficit:

“After peaking at 10.4% of GDP in 2012, Spain’s public deficit has been reduced significantly in recent years. This improvement is the fruit of drastic austerity measures into 2014, and then two years of renewed growth.

In its budget proposal submitted to the European Commission last fall, Mariano Rajoy’s government had pledged to reduce the deficit to 4.2% of GDP in 2015 and to 2.8% in 2016, but it eased up its deficit reduction efforts in the run up to the 20 December general elections. Consequently, the public deficit was reduced by only 0.6 points in 2015, to 5.2% of GDP, which is 1 point higher than initially planned. This easing trend puts Spain in a delicate situation. It seems very unlikely that the country will manage to comply with its budget proposal and bring the deficit below 3% of GDP in 2016. To do so, would require a major fiscal effort at a time when the country is still struggling to form a new government, more than three months after the general elections.”¹⁶⁴

In the PNB Paribas view, the current political impasse likely will lead to new elections in Spain on June 2016.

One of the main political parties, the Spanish Socialists Workers’ Party (PSOE):

“(…) has until 2 May to reach an agreement with the other parties. Parliament has two months after the first investiture vote to elect a president. If it fails to do so, early elections will be called in late June.

Early elections seem all the more likely since the PSOE has few options. (…)”¹⁶⁵

The political impasse generates uncertainty regarding the public finance:

“Ongoing growth will provide the new government with some manoeuvring room, but it will apparently have to make some compromises with all of the parties and to scale back austerity efforts. That would also call into question the target of reducing the public debt (99.3% of GDP in 2014).”¹⁶⁶

The forecasts for the general government gross debt as a percent of GDP are in the range of 98.8 to 102 percent in 2016 and 98.3 to 100.7 percent in 2017 (Table 32).

- Current account balance

“Spain is bound to be hit by the slowdown in growth in some of the emerging economies. It will be hit especially hard by less favourable cyclical trends in Asia and South America¹. The euro’s appreciation

¹⁶³ Idem, p. 14-15.

¹⁶⁴ Idem, p. 15.

¹⁶⁵ Idem, p. 15.

¹⁶⁶ Idem, p. 15.

against the dollar, which can be attributed to the Federal Reserve's slower-than-expected increase in the discount rate, could also alter the competitiveness of Spanish companies." ¹⁶⁷

"¹ Respectively, these two regions accounted for 9.6% and 6.1% of Spain's merchandise exports in 2015, up from 6.3% and 5.6% in 2007." ¹⁶⁸

"(...) Spanish export firms will continue to benefit from past efforts to boost competitiveness in recent years. The Eurozone is Spain's main export outlet (nearly 50% of merchandise exports in 2015), and although the current recovery lacks punch, it nonetheless offers a few opportunities. (...)" ¹⁶⁹

The forecasts for the current account balance as a percent of GDP are in the range of 0.6 to 1.1 percent in 2016 and 0.5 to 1.1 percent in 2017 (Table 32).

Other Advanced Economies

Australia

Australia is a net metal exporter and this activity represented about 5.2 percent of its GDP in 2014. (IMF, 2015f, p. 45).

Regarding the Australian position as a producer and the capital intensity of this activity:

"From an economic point of view, iron ore is by far the most important base metal, with a \$225 billion annual industry in terms of global sales. (...) The top iron-ore-producing country is China, whose share is about half of the world's production, followed by Australia and Brazil. (...) Considering that mining iron ore is capital intensive, iron ore production is concentrated among top producers (...). The production of iron ore depends crucially on the level of investment activity in the sector, which has been on the decline in the past few years. The demand for iron ore comes primarily from large steel-producing countries such as China, which consumes more than half of the world production of iron ore." (IMF, 2015f, p. 45).

The main players in the metal market:

"(...) by 2014 almost half of metal exports were going from Australia, Brazil, and Chile to China. China has become the largest importer of metals, with its share increasing from less than 10 percent to 46 percent from 2002 to 2014 (...)" (IMF, 2015f, p. 44).

Metal prices declined recently in consequence of increased supply and the slowdown of China. (See Figure 84).

The decline of metal prices has direct impacts on Australia through exports and reduced investments in the natural-resource-related sector.

According to the IMF:

"(...) Australia's projected growth of 2.4 percent in 2015, a bit weaker than predicted in April, also reflects the impact of lower commodity prices and resource-related investment—partly offset by supportive monetary policy and a weaker exchange rate." (IMF, 2015f, p. 45).

¹⁶⁷ Idem, p. 14.

¹⁶⁸ Idem.

¹⁶⁹ Idem.

Figure 85 shows the recent evolution of (and apparently correlation between) metal prices, real effective exchange rate and mining sector investments in Australia. The panel on the right side illustrates the evolution of house prices.

In the OECD perspective:

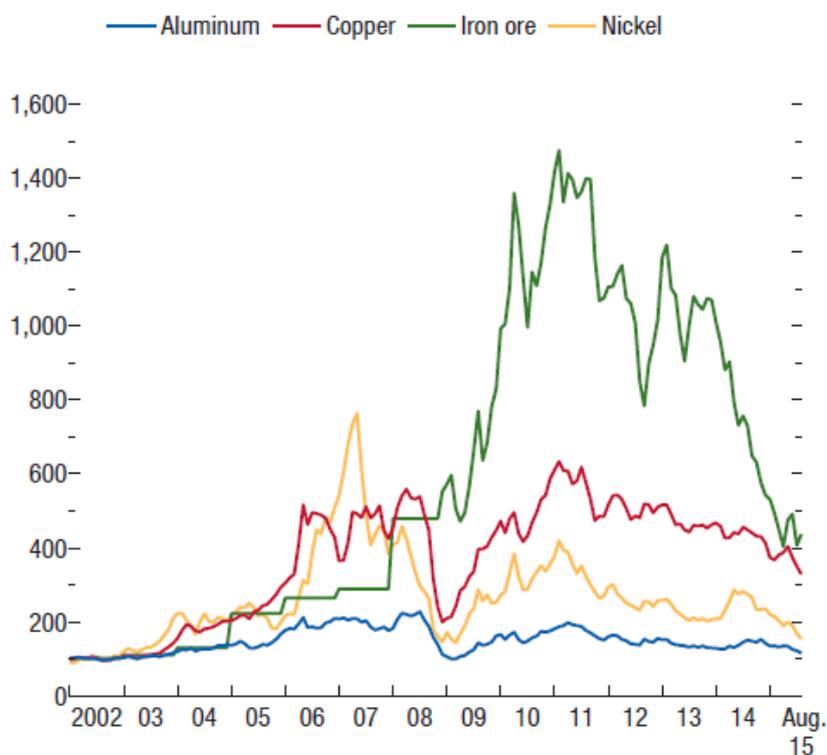
“Economic growth is projected to recover to 3% in 2017. Ongoing decline in resource-sector investment will be offset by strengthening consumption, non-resource sector investment and exports. Consumer price inflation will increase gradually as the economic upswing gathers momentum and the labour market starts tightening.

With prudential measures reducing downside risks from the housing boom, further monetary policy easing should be implemented in the event of a deepening downturn. (...)”¹⁷⁰

Table 34 contains additional forecasts.

Figure 84: Metal Price Indexes

(2002 = 100)

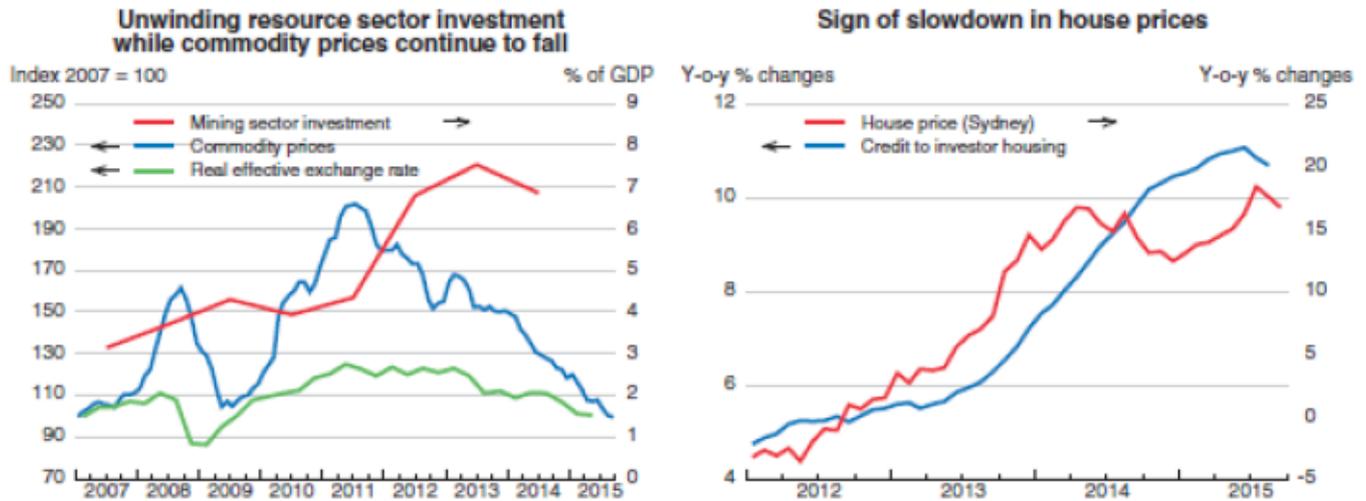


Sources: IMF, Primary Commodity Price System; and IMF staff calculations.

(Source: IMF, 2015f, p. 41)

¹⁷⁰ <http://www.oecd.org/economy/australia-economic-forecast-summary.htm>, accessed 04/03/16.

Figure 85: Australia – Recent Developments



Source: OECD Economic Outlook 98 database; Reserve Bank of Australia; Australian Bureau of Statistics; CoreLogic / RP Data.
 StatLink <http://dx.doi.org/10.1787/888933296025>

(Source: <http://www.oecd.org/economy/australia-economic-forecast-summary.htm>, accessed 04/03/16)

Table 23: Advanced Economies - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	2.1	2.1	Table A. 4
BNP Paribas	1.6	1.4	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
Goldman Sachs ¹	2	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
• Unemployment rate (%)			
IMF	6.4	6.3	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
• Inflation rate - end of period consumer prices (%)			
IMF	1.4	1.9	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
BNP Paribas	0.6	1.7	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives , accessed 04/07/16
• General Government Gross Debt (% of GDP)			
IMF	104.6	104	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
• Current Account Balance (% of GDP)			
IMF	0.3	0.1	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16

Table 24: U.S. - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	2.6	2.6	Table A. 4
FED ¹	2.3 to 2.5	2 to 2.3	FED, 2016, p. 36
Allianz	2.3	2.3	https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf , accessed 03/26/16
BNP Paribas	1.9	1.5	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
Goldman Sachs	2.2	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
J. P. Morgan	2.4	2.2	https://am.jpmorgan.com/blob-gim/1383280028969/83456/MI-GTM_1Q16.pdf , accessed 03/28/16
Moody's	2 to 3	2 to 3	https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
Morgan Stanley	1.7	---	http://www.morganstanley.com/ideas/spring-2016-global-economic-and-strategy-outlook , accessed 03/26/16
PIMCO	1.75 to 2.25	---	https://www.pimco.com/insights/economic-and-market-commentary/cyclical-outlook/calmer-cs-ahead-china-commodities-and-central-banks-dominate-the-global-outlook accessed 03/26/16
Standard & Poor's	2.7	2.6	https://www.spratings.com/documents/20184/908557/US_SR_Event_Webcast_16JAN_ChinaEcon11516/7c07d687-1a22-41f3-a3f8-8dc44a2b7ef6 , accessed 03/26/16
• Unemployment rate (%)			
IMF	4.9	4.8	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/26/16
FED ¹	4.6 to 4.8	4.6 to 4.8	FED, 2016, p. 36
Allianz	4.8	4.7	https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf , accessed 03/27/16
BNP Paribas	4.8	5.1	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369 , accessed 03/28/16
J. P. Morgan	4.7	4.7	https://am.jpmorgan.com/blob-gim/1383280028969/83456/MI-GTM_1Q16.pdf , accessed 03/28/16
Moody's	4.5 to 5.5	4 to 5	https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
Standard & Poor's	4.6	---	https://www.spratings.com/documents/20184/908557/US_SR_Event_Webcast_16JAN_ChinaEcon11516/7c07d687-1a22-41f3-a3f8-8dc44a2b7ef6 , accessed 03/28/16
• Inflation rate - end of period consumer prices (%)			
IMF	1.4	2.1	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
FED ¹	1.2 to 1.7 ²	1.8 to 2 ²	FED, 2016, p. 36

Allianz	1.8	2.4	https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf , accessed 03/28/16
BNP Paribas	1.4	2.1	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
J. P. Morgan	1.6	1.9	https://am.jpmorgan.com/blob-gim/1383280028969/83456/MI-GTM_1Q16.pdf , accessed 03/28/16
PIMCO	1 to 1.5	---	https://www.pimco.com/insights/economic-and-market-commentary/cyclical-outlook/calmer-cs-ahead-china-commodities-and-central-banks-dominate-the-global-outlook accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	106	105.8	Table A. 9
BNP Paribas ³	74.7	75	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369 , accessed 03/28/16
• Current Account Balance (% of GDP)			
IMF	-2.9	-3.2	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16
BNP Paribas	-2.8	-2.9	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives , accessed 04/07/16
¹ Central tendency. ² PCE inflation (see Lexicon).			

Table 25: Canada - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	1.7	2.1	Table A. 4
Moody's	1.5 to 2.5	1.5 to 2.5	https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Unemployment rate (%)			
IMF	6.8	6.7	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/26/16
Moody's	6.5 to 7.5	6 to 7	https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Inflation rate - end of period consumer prices (%)			
IMF	2	2.2	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	89.4	86.7	Table A. 9
• Current Account Balance (% of GDP)			
IMF	-2.3	-2.7	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16

Table 26: Japan - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	1	0.3	Table A. 4
Allianz	1	0.9	https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf , accessed 03/26/16
BNP Paribas	0.3	0.2	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
Goldman Sachs	1	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
Moody's	0 to 1	0 to 1	https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
Morgan Stanley	0.6	---	http://www.morganstanley.com/ideas/spring-2016-global-economic-and-strategy-outlook , accessed 03/26/16
PIMCO	0.25 to 0.75	---	https://www.pimco.com/insights/economic-and-market-commentary/cyclical-outlook/calmer-cs-ahead-china-commodities-and-central-banks-dominate-the-global-outlook , accessed 03/26/16
• Unemployment rate (%)			
IMF	3.5	3.6	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/26/16
BNP Paribas	3.1	2.9	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369 , accessed 03/28/16
Moody's	3 to 4	3 to 4	https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Inflation rate - end of period consumer prices (%)			
IMF	0.6	1.8	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
BNP Paribas	0.1	1.8	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
PIMCO	0.25 to 0.75	---	https://www.pimco.com/insights/economic-and-market-commentary/cyclical-outlook/calmer-cs-ahead-china-commodities-and-central-banks-dominate-the-global-outlook , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	247.8	248.8	Table A. 9
BNP Paribas ¹	206	205	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369 , accessed 03/28/16
• Current Account Balance (% of GDP)			
IMF	3	3	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16
BNP Paribas	3.6	3.3	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives , accessed 03/29/16

¹ Public Debt (% GDP), excluding social-security funds.

Table 27: U.K. - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	2.2	2.2	Table A. 4
BNP Paribas	1.7	2.0	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
Goldman Sachs	2.7	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
Moody's	1.5 to 2.5	2 to 3	https://www.moody.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
Morgan Stanley	1.7	---	http://www.morganstanley.com/ideas/spring-2016-global-economic-and-strategy-outlook , accessed 03/26/16
PIMCO	1.5 to 2	---	https://www.pimco.com/insights/economic-and-market-commentary/cyclical-outlook/calmer-cs-ahead-china-commodities-and-central-banks-dominate-the-global-outlook , accessed 03/26/16
• Unemployment rate (%)			
IMF	5.5	5.4	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/26/16
BNP Paribas	5.4	---	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27045 , accessed 03/29/16
Moody's	4.5 to 5.5	4.5 to 5.5	https://www.moody.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Inflation rate - end of period consumer prices (%)			
IMF	1.7	2	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
BNP Paribas	0.5	1.9	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	88	86.7	Table A. 9
BNP Paribas	91.3	---	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27045 , accessed 03/28/16
• Current Account Balance (% of GDP)			
IMF	-4.3	-3.5	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16
BNP Paribas	-4.8	-3.8	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/29/16

Table 28: Euro Area - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	1.7	1.7	Table A. 4
ECB	1.4	1.7	ECB, 2016b. p. 9
Allianz	1.7	1.8	https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf , accessed 03/26/16
BNP Paribas	1.3	1.4	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 ,
Goldman Sachs	1.7	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
Moody's	1 to 2	1 to 2	https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
Morgan Stanley	1.5	---	http://www.morganstanley.com/ideas/spring-2016-global-economic-and-strategy-outlook , accessed 03/26/16
PIMCO	1 to 1.5	---	https://www.pimco.com/insights/economic-and-market-commentary/cyclical-outlook/calmer-cs-ahead-china-commodities-and-central-banks-dominate-the-global-outlook , accessed 03/26/16
• Unemployment rate (%)			
IMF	10.5	10,1	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
ECB	10.4	10.2	ECB, 2016b. p. 9
Allianz ¹	10.1	9.6	https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf , accessed 03/27/16
BNP Paribas	10.4	10	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369 ,
• Inflation rate - end of period consumer prices (%)			
IMF	1.1	----	Table A. 7
ECB ²	0.1	1.3	ECB, 2016b. p. 9
Allianz	0.9	1.6	https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf , accessed 03/28/16
BNP Paribas	-0,1	1.1	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 ,
PIMCO	0 to 0.5	---	https://www.pimco.com/insights/economic-and-market-commentary/cyclical-outlook/calmer-cs-ahead-china-commodities-and-central-banks-dominate-the-global-outlook , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	92.8	91.5	Table A. 9
BNP Paribas	90.2	88.5	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369 ,
• Current Account Balance (% of GDP)			
IMF	3	2.8	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/29/16
BNP Paribas	2.6	2.5	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369 ,
¹ According to the EU definition.			
² HICP inflation rate. See <i>Harmonised Index of Consumer Prices (HICP)</i> in the Lexicon.			

Table 29: France - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	1.3	1.5	Table A. 4
Allianz	1.5	1.7	https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf , accessed 03/26/16
BNP Paribas	1.2	1.3	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
Goldman Sachs	1.4	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
Moody's	0.5 to 1.5	0.5 to 1.5	https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Unemployment rate (%)			
IMF	9.9	9.7	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/26/16
BNP Paribas	10.3	10.2	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
Moody's	9 to 10	9 to 10	https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Inflation rate - end of period consumer prices (%)			
IMF	1	1.1	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
BNP Paribas	0.3	1.1	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	98	98	Table A. 9
BNP Paribas	96.6	97	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
• Current Account Balance (% of GDP)			
IMF	-0.4	-0.4	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16
BNP Paribas	-0.1	-0.8	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/29/16

Table 30: Germany - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	1.7	1.7	Table A. 4
Allianz	2.2	1.9	https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf , accessed 03/26/16
BNP Paribas	1.4	1.5	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
Goldman Sachs	1.7	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
Moody's	1.5 to 2.5	1 to 2	https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Unemployment rate (%)			
IMF	4.7	4.7	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/26/16
Allianz ¹	4.5	4.6	https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf , accessed 03/27/16
BNP Paribas	6.3	6.0	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369 , accessed 03/28/16
Moody's	4 to 5	4 to 5	https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Inflation rate - end of period consumer prices (%)			
IMF	1.1	1.5	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
Allianz	1.1	1.7	https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf , accessed 03/28/16
BNP Paribas	0	1.5	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	68.2	65.9	Table A. 9
BNP Paribas	68.8	65.8	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
• Current Account Balance (% of GDP)			
IMF	8	7.5	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16
BNP Paribas	7.7	7.6	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369 , accessed 03/29/16

¹ According to the EU definition.

Table 31: Italy - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	1.3	1.2	Table A. 4
Allianz	1.1	1.5	https://www.allianz.com/v_1456227294000/media/economic_research/research_data/english_documents/forecasts/GlobalGDPEMU.pdf , accessed 03/26/16
BNP Paribas	1	0.9	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
Goldman Sachs	1.6	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
Moody's	0.5 to 1.5	0.5 to 1.5	https://www.moody.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Unemployment rate (%)			
IMF	11.9	11.6	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/26/16
Moody's	10.5 to 11.5	10.5 to 11.5	https://www.moody.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Inflation rate - end of period consumer prices (%)			
IMF	0.8	1	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
BNP Paribas	0	0.9	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	132.3	130.5	Table A. 9
BNP Paribas	132.1	130.4	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
• Current Account Balance (% of GDP)			
IMF	2.3	1.7	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16
BNP Paribas	2	2	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives , accessed 04/07/16

Table 32: Spain - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	2.7	2.3	Table A. 4
Allianz	2.8	2.4	https://www.allianz.com/v_1456227294000/media/economic_research/research_data/english_documents/forecasts/GlobalGDPEMU.pdf , accessed 03/26/16
BNP Paribas	2.6	2.1	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/26/16
Goldman Sachs	2.5	---	http://www.goldmansachs.com/our-thinking/pages/outlook-2016/index.html#forecast , accessed 03/26/16
• Unemployment rate (%)			
IMF	19.9	18.6	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/26/16
BNP Paribas	21	20	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27369 , accessed 03/29/16
• Inflation rate - end of period consumer prices (%)			
IMF	0.9	0.9	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
BNP Paribas	-0.9	1	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	98.8	98.3	Table A. 9
BNP Paribas	102	100.7	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27613 , accessed 03/28/16
• Current Account Balance (% of GDP)			
IMF	1.1	1.1	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16
BNP Paribas	0.6	0.5	http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives , accessed 03/29/16

Table 33: Other Advanced Economies - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	2.5	3.3	Table A. 4
• Unemployment rate (%)			
IMF	4.5	4.3	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
• Inflation rate - end of period consumer prices (%)			
IMF	2	2.2	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
• General Government Gross Debt (% of GDP)			
IMF	41.4	41.2	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16
• Current Account Balance (% of GDP)			
IMF	4.7	4.6	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx , accessed 03/30/16

Table 34: Australia - Forecasts

	2016	2017	Source
• Real GDP growth rate (%)			
IMF	2.9	---	Table A. 5
Moody's	1.5 to 2.5	2 to 3	https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Unemployment rate (%)			
IMF	6.2	6.1	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/26/16
Moody's	5.5 to 6.5	5.5 to 6.5	https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1014679 , accessed 03/26/16
• Inflation rate - end of period consumer prices (%)			
IMF	2.5	2.2	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/28/16
• General Government Gross Debt (% of GDP)			
IMF	37.3	37.6	Table A. 9
• Current Account Balance (% of GDP)			
IMF	-4.1	-3.3	http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/weoselgr.aspx , accessed 03/29/16

Table 35: U.S. - Policy Interest Rates – Forecasts and Projections

	Expectations / Projections	Federal Funds		6-M		1-Y		5-Y		10-Y		20-Y	
		Publication Date	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Financial Times^{1, a}	April 1	---	---	0.4	---	---	---	1.22	---	1.77	---	---	---
The^{2, b} Economist	April 1	---	---	---	---	---	---	---	---	1.85	---	---	---
BNP³ Paribas	April 1	0.25 to 0.5	0.25 to 0.5	---	---	---	---	---	---	1.5 ^c	1.75 ^c	---	---
FED^{4, d}	March 16	0.9	1.9	---	---	---	---	---	---	---	---	---	---
FED^{4, e}	March 16	0.9 to 1.4	1.6 to 2.4	---	---	---	---	---	---	---	---	---	---
U.S.^{5, f} Treasury	February	---	---	0.6	---	0.64	---	1.29	---	1.88	---	2.37	---
Allianz^{6, g}	February 23	---	---	---	---	---	---	---	---	2.2	2.7	---	---
FED^{4, d}	December 2015	1.4	2.4	---	---	---	---	---	---	---	---	---	---
FED^{4, e}	December 2015	0.9 to 1.4	1.9 to 3	---	---	---	---	---	---	---	---	---	---

¹ <http://markets.ft.com/Research/Markets/Bonds>, accessed 04/01/16. ² <http://www.economist.com/node/21604509>, accessed 04/01/16.

³ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27630&src=mail&publication=EcoWeek>, accessed 04/01/16. ⁴ <http://www.federalreserve.gov/monetarypolicy/fomcpresconf20160316.htm>, accessed 03/31/16.

⁵ <https://www.treasury.gov/resource-center/economic-policy/corp-bond-yield/Pages/TNC-YC.aspx>, accessed 03/31/16.

⁶ https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf, accessed 03/31/16.

^a Yield curve. ^b 10-year government bond. ^c 10-year Treasury notes. ^d Median. ^e Central tendency. ^f Yield Curve for Treasury Nominal Coupon derived on February 2016 from monthly average spot rates of Treasury nominal notes and bonds. ^g 10-year Treasury yield, end of quarter, yearly average.

Figure 86: U.S government bonds - yield curve (April 1, 2016)



(Source: <http://markets.ft.com/Research/Markets/Bonds>, accessed 04/01/16)

Table 36: EMU - Policy Interest Rates – Forecasts and Projections

	Expectations / Projections	Refinancing rate		3-M Euribor		2-Y		5-Y		10-Y	
		2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
	Publication Date										
Financial Times^{1, a}	April 1	---	---	---	---	-0.48	---	-0.33	---	0.13	---
The^{2, b} Economist	April 1	---	---	---	---	---	---	---	---	0.15	---
BNP³ Paribas	April 7	0	0	-0.3	-0.3	---	---	---	---	---	---
Idem⁴	April 1	0.05	0.05	-0.6	-0.6	---	---	---	---	-0.2 ^c	-0.2 ^c
Idem^{4, d}	April 1	---	---	---	---	---	---	---	---	0.1	0.1
Idem^{4, e}	April 1	---	---	---	---	---	---	---	---	0.95	0.80
ECB⁵	March	---	---	-0.3	-0.3	---	---	---	---	1.2 ^f	1.4 ^f
Allianz⁶	February 23	---	---	-0.2 ^g	0 ^g	---	---	---	---	0.5 ^h	1.2 ^h

¹ <http://markets.ft.com/Research/Markets/Bonds>, accessed 04/01/16. ² <http://www.economist.com/node/21604509>, accessed 04/01/16.

³ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives>, accessed 04/07/16. ⁴ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27630&src=mail&publication=EcoWeek>,

accessed 04/01/16. ⁵ <https://www.ecb.europa.eu/pub/pdf/other/ecbstaffprojections201603.en.pdf?b04a09832bebde6edaa7798807a7ea28>, accessed 04/01/16. Figures represent market expectations with a cut-off date of February 15.

⁶ https://www.allianz.com/v_1456996478000/media/economic_research/publications/working_papers/en/Update230216e.pdf, accessed 04/01/16.

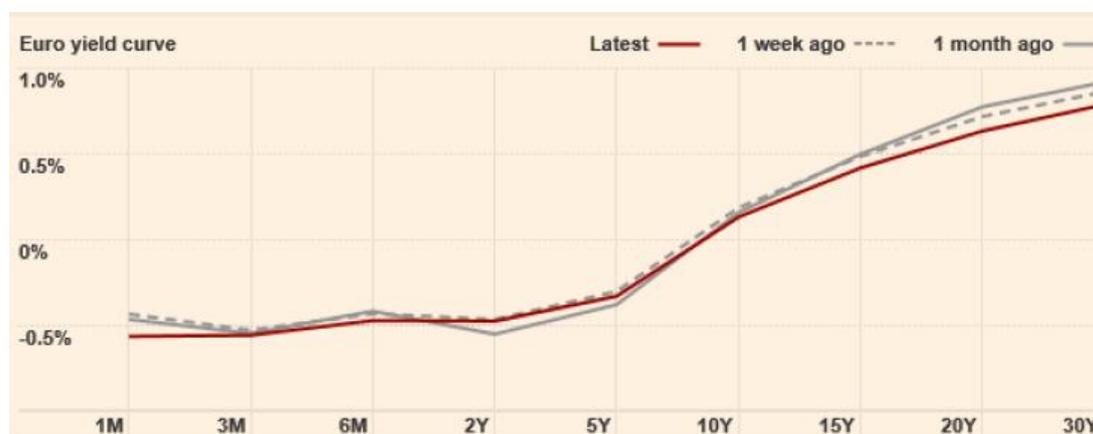
^a Yield curve. ^b 10-year government bond. ^c 10-year bund, issued by Germany's federal government.

^d 10-year OAT, issued by France's federal government. ^e 10-year BTP, issued by Italy's federal government.

^f "The assumption for euro area ten-year nominal government bond yields is based on the weighted average of countries' ten-year benchmark bond yields, weighted by annual GDP figures and extended by the forward path derived from the ECB's euro area all-bonds ten-year par yield, with the initial discrepancy between the two series kept constant over the projection horizon. The spreads between country-specific government bond yields and the corresponding euro area average are assumed to be constant over the projection horizon."³

^g Money market rate; end of quarter, yearly average. ^h Germany as benchmark; end of quarter, yearly average.

Figure 87: Euro area government bonds - yield curve (April 1, 2016)



(Source: <http://markets.ft.com/Research/Markets/Bonds>, accessed 04/01/16)

Table 37: U.K. - Policy Interest Rates – Forecasts and Projections

	Expectations / Projections	Bank Rate		3-M Libor £		2-Y		5-Y		10-Y	
		2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
	Publication Date										
Financial Times^{1, a}	April 1	---	---	---	---	0.41	---	0.83	---	1.4	---
The^{2, b} Economist	April 1	---	---	---	---	---	---	---	---	1.5	---
BNP³ Paribas	April 1	0.5	1	0.75	1.25	---	---	---	---	1.5	1.8
Bank of England	March	0.5 ^{4, c}	0.5 to 0.7 ^{4, c}	---	---	0.34	---	0.81 ^{5, d}	---	1.5	---

¹ <http://markets.ft.com/Research/Markets/Bonds>, accessed 04/01/16.

² <http://www.economist.com/node/21604509>, accessed 04/01/16.

³ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27630&src=mail&publication=EcoWeek>, accessed 04/01/16.

⁴ Bank of England, 2016, p. 32. Figures represent market expectations with a cut-off date of January 27.

⁵ <http://www.bankofengland.co.uk/statistics/pages/yieldcurve/default.aspx>, accessed 04/01/16.

^a Yield curve.

^b 10-year government bond.

^c Central tendency rates.

^d Yield curve for the Gilt (U.K. government bond), spot rates, March 31, 2016.

Figure 88: U.K government bonds - yield curve (April 1, 2016)



(Source: <http://markets.ft.com/Research/Markets/Bonds>, accessed 04/01/16)

Table 38: Japan - Policy Interest Rates – Forecasts and Projections

	Expectations / Projections	Overnight call rate		3-M JPY Libor		2-Y		5-Y		10-Y	
		2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
	Publication Date										
Financial Times ^{1, a}	April 1	---	---	---	---	-0.21	---	-0.21	---	-0.06	---
The Economist ^{2, b}	April 1	---	---	---	---	---	---	---	---	0	---
BNP Paribas ³	April 7	-0.3	-0.5	-0.3	-0.5	---	---	---	---	-0.35	-0.5
BNP Paribas ⁴	April 1	-0.3	-0.5	-0.1	-0.25	---	---	---	---	-0.1	-0.25

¹ <http://markets.ft.com/Research/Markets/Bonds>, accessed 04/01/16.

² <http://www.economist.com/node/21604509>, accessed 04/01/16.

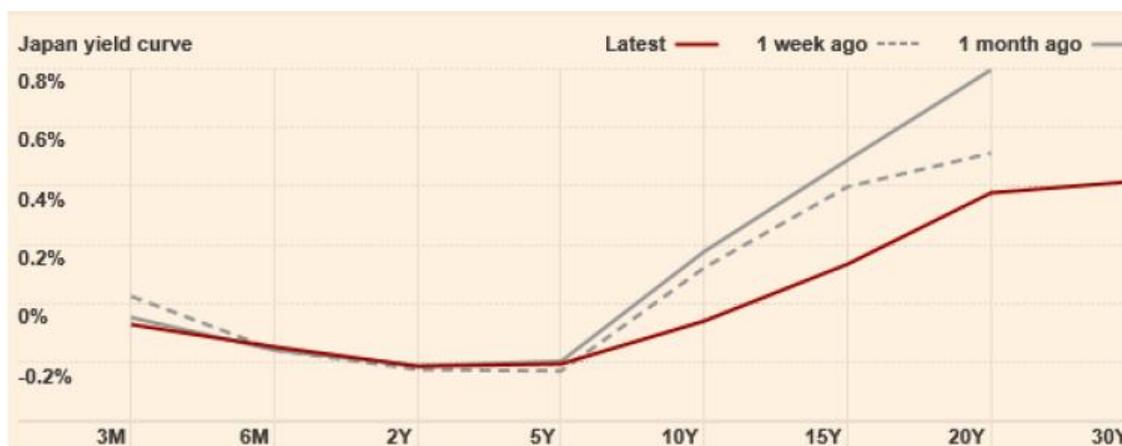
³ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27651&src=mail&publication=Perspectives> accessed 04/07/16.

⁴ <http://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=27630&src=mail&publication=EcoWeek>, accessed 04/01/16.

^a Yield curve.

^b 10-year government bond.

Figure 89: Japan government bonds - yield curve (April 1, 2016)



Source: <http://markets.ft.com/Research/Markets/Bonds>, accessed 04/01/16)

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Lexicon

Basis point

“A basis point is one hundredth of one per cent (0.01 per cent), so 100 basis points (bps) is equal to 1 percentage point. (...)”, <http://lexicon.ft.com/Term?term=basis-point-BPS>, accessed on 02/27/16.

Bull

“An investor who expects share prices to rise - an optimist. The opposite is a bear. If optimism pervades a market, one would describe the sentiment as bullish, the opposite of bearish. A bull market is an extended period of rising share prices, the opposite of a bear market.”, <http://lexicon.ft.com/Term?term=bull>, accessed on 02/22/16.

Basel III

“Global banking regulators sealed a deal, in September of 2010, to effectively triple the size of the capital reserves that the world’s banks must hold against losses, in one of the most important reforms to emerge from the financial crisis.

The package, known as Basel III, sets a new key capital ratio of 4.5 per cent, more than double the current 2 per cent level, plus a new buffer of a further 2.5 per cent. Banks whose capital falls within the buffer zone will face restrictions on paying dividends and discretionary bonuses, so the rule sets an effective floor of 7 per cent. The new rules will be phased in from January 2013 through to January 2019.

Banks will be required to triple core tier one capital ratios from 2 per cent to 7 per cent by 2019. This ratio measures the buffer of highest quality capital that banks hold against future losses.”, <http://lexicon.ft.com/Term?term=Basel-III>, accessed on 02/27/16.

Charge-off

“Lending or other credit-related losses that are written off as unrecoverable. (...)”, <http://www.oxfordreference.com/search?q=+charge-off&searchBtn=Search&isQuickSearch=true>, accessed on 02/22/16.

Common factor

“An element of return that influences many assets. According to multiple factor risk models, the factors determine correlations between asset returns.(...)”, <http://people.duke.edu/~charvey/Classes/wpg/bfglosc.htm>, accessed on 03/01/16.

Core inflation

“The rate of inflation excluding certain sectors whose prices are most volatile, specifically food and energy.”, <http://www-personal.umich.edu/~alandear/glossary/c.html#CoreInflation>, accessed on 07/01/16.

Credit default swaps CDS

“(...) offer protection against the non-payment of unsecured corporate or sovereign debt. A typical CDS contract features one counterparty agreeing to "sell" protection to another. The "protected" party pays a fee each year in exchange for a guarantee that if a bond goes into default, the seller of protection will provide compensation.”, <http://lexicon.ft.com/Term?term=credit-default-swaps--CDS>, accessed on 03/01/16.

Credit risk

“The risk that a debt issuer may default on payments. Also called counterparty risk.” <http://lexicon.ft.com/Term?term=credit-risk>, accessed on 02/29/16.

Current account balance

“(...) The current account balance shows the difference between the sum of exports and income receivable and the sum of imports and income payable (exports and imports refer to both goods and services, while income refers to both primary and secondary income). (...) the value of the current account balance equals the saving-investment gap for the economy.”, (IMF, 2009, p. 9).

Cyclical stocks

“Sometimes shortened to cyclicals. Stocks whose value tends to follow changes in the business or economic cycle. Property developers and automakers are traditional examples.”, <http://lexicon.ft.com/Term?term=cyclical-stocks>, accessed on 02/22/16.

Depository institution

“A depository institution is a financial institution in the United States (such as a savings bank, commercial bank, savings and loan associations, or credit unions) that is legally allowed to accept monetary deposits from consumers. Federal depository institutions are regulated by the Federal Deposit Insurance Corporation (FDIC).

An example of a non-depository institution might be a mortgage bank. While licensed to lend, they cannot accept deposits.”, https://en.wikipedia.org/wiki/Depository_institution, accessed on 04/08/16.

Derivatives

“A financial instrument whose value is based on the performance of underlying assets such as stocks, bonds currency exchange rates, real estate. The main categories of derivatives are futures, options and swaps. (...)”, <http://lexicon.ft.com/Term?term=derivatives>, accessed on 02/29/16.

Effective exchange rate

“A measure of a currency's value against a trade-weighted basket of currencies of the country's main trading partners.”, <http://lexicon.ft.com/Search?searchText=effective-exchange-rate>, accessed on 02/25/16.

Fiscal drag

“The dampening effect on aggregate demand that occurs when an expanding economy creates additional tax revenues, especially under a progressive income tax. (...)”, <http://www-personal.umich.edu/~alandear/glossary/f.html#FiscalDrag>, accessed on 04/02/16.

Foreclosure

“When somebody loses ownership of a property because he or she has not met mortgage payments.”, <http://lexicon.ft.com/Term?term=foreclosure>, accessed on 02/27/16.

Gross debt

“All liabilities that require future payment of interest and/or principal by the debtor to the creditor. This includes debt liabilities in the form of special drawing rights, currency, and deposits; debt securities; loans; insurance, pension, and standardized guarantee programs; and other accounts payable. (...) The term ‘public debt’ is used in the Fiscal Monitor, for simplicity, as synonymous with gross debt of the general government, unless specified otherwise.” (IMF, 2015C, p. 37).

Harmonised Index of Consumer Prices (HICP)

“Consumer price inflation in the euro area is measured by the Harmonised Index of Consumer Prices (HICP). The HICP is compiled by Eurostat and the national statistical institutes in accordance with harmonised statistical methods.”. For additional information, see: <https://www.ecb.europa.eu/stats/prices/hicp/html/index.en.html>, accessed on 02/28/16.

High frequency traders (HFTs)

“High frequency traders (HFTs) use computers to implement various highly active trading strategies to trade at exchanges where automated electronic systems arrange trades. Electronic dealers are the most common HFTs. They post standing limit orders to buy or sell securities or contracts and wait for others to trade with them. (...)”, http://lexicon.ft.com/Term?term=high_frequency-traders, accessed on 03/01/16.

Interest coverage ratio

“The ratio of earnings before interest and taxes to annual interest expense. This ratio measures a firm's ability to pay interest.”, <http://people.duke.edu/~charvey/Classes/wpg/bfglosi.htm>, accessed on 03/02/16.

Joint-stock bank

“A bank which is a public company with shares owned by investors rather than a government.”, http://markets.ft.com/research/Lexicon/Term?term=joint_stock_bank, accessed on 02/22/16.

Listed company

“Company whose shares are traded on an official stock exchange. It must adhere to the listing requirements of that exchange, which may include how many shares are listed and a minimum earnings level.”

<http://lexicon.ft.com/Term?term=listedin-company>, accessed on 03/16/16.

Mark to market

“To adjust the value of an asset portfolio to reflect the latest closing prices.”

<http://lexicon.ft.com/Term?term=mark-to-market>, accessed on 02/29/16.

Money market

“Market in which money is borrowed and lent through the sale and purchase of short-term debt instruments (normally up to 12 months' maturity), such as certificates of deposit, commercial paper, Treasury bills, banker's acceptances and repurchase agreements. Includes interbank market.”,

<http://lexicon.ft.com/Term?term=moneymarket>, accessed on 03/01/16.

Multifactor productivity

“Multifactor productivity measurement helps disentangle the direct growth contributions of labour, capital, intermediate inputs and technology. (...)” (OECD, 2001, p. 20).

See one way of measuring it at OECD, 2001, p. 18.

Mutual fund

“A mutual fund is an open-ended investment fund that gathers capital from a number of investors to create a pool of money that is then re-invested into stocks, bonds and other assets.

Investors are effectively shareholders in the fund in proportion to their investment, but must normally also pay various administrative fees, including in some cases a charge to redeem their money.

Mutual funds are called unit trusts in the UK.”, <http://lexicon.ft.com/Term?term=mualfund>, accessed on 02/29/16.

Output gap and Potential output

“The output gap is an economic measure of the difference between the actual output of an economy and its potential output. Potential output is the maximum amount of goods and services an economy can turn out when it is most efficient—that is, at full capacity. Often, potential output is referred to as the production capacity of the economy.”

“Policymakers often use potential output to gauge inflation and typically define it as the level of output consistent with no pressure for prices to rise or fall.”

<http://www.imf.org/external/pubs/ft/fandd/2013/09/basics.htm>, accessed on 03/19/16.

Outright monetary transactions (OMT)

“The European Central Bank's outright monetary transactions (OMT) or bond-buying programme was announced by Mario Draghi, president of the European Central Bank, in September 2012.

Under the outright monetary transactions programme the ECB would offer to purchase eurozone countries' short-term bonds in the secondary market, to bring down the market interest rates faced by countries subject to speculation that they might leave the euro. (...)”,

<http://lexicon.ft.com/Term?term=outright-monetary-transactions-OMT>, accessed on 02/29/16.

Par value

“The face value of a bond. Par value for a share refers to the stock value stated in the corporate charter. Par value is important for a bond or fixed-income instrument because it determines its

maturity value as well as the dollar value of coupon payments. (...)", <http://www.investopedia.com/terms/p/parvalue.asp>, accessed on 03/31/16.

PCE inflation

"(...) PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. (...)" (FED, 2016, p.36)

Price-to-book ratio

"The price/book (p/b) ratio, sometimes called the market-to-book ratio, links the stock/share price of a company with the book or accounting value of shareholders' equity per share. It reflects how many times book value investors are ready to pay for a share. (...)", http://lexicon.ft.com/Term?term=price_to_book-ratio, accessed on 02/27/16.

Purchasing Managers' Index (PMI)

"The Purchasing Managers' index (PMI) is an indicator of the economic health of the manufacturing sector. The PMI index is based on five major indicators: new orders, inventory levels, production, supplier deliveries and the employment environment. (...)", <http://www.investopedia.com/terms/p/pmi.asp>, accessed on 04/09/16.

Purchasing power parity (PPP)

"(...) They convert different currencies to a common currency and, in the process of conversion, equalise their purchasing power by eliminating the differences in price levels between countries. Thus, when the GDPs and component expenditures of countries are converted to a common currency with PPPs, they are valued at the same price level and so reflect only differences in the volumes of goods and services purchased in the countries.

(...) In their simplest form, PPPs are nothing more than price relatives that show the ratio of the prices in national currencies of the same good or service in different countries. For example, if the price of a litre of Coca Cola is 2.30 euros in France and 2.00 dollars in the United States, then the PPP for Coca Cola between France and the United States is the ratio 2.30 euros to 2.00 dollars or 1.15 euros to the dollar. This means that for every dollar spent on Coca Cola in the United States, 1.15 euros would have to be spent in France to obtain the same quantity and quality (...)", (European Union / OECD, 2012, p. 13-14).

Real exchange rate

"1. The nominal exchange rate adjusted for inflation. Unlike most other real variables, this adjustment requires accounting for price levels in two currencies. The real exchange rate is: $R = EP^*/P$ where E is the nominal domestic-currency price of foreign currency, P is the domestic price level, and P* is the foreign price level.

2. The real price of foreign goods; i.e., the quantity of domestic goods needed to purchase a unit of foreign goods. (...).

3. The relative price of traded goods in terms of nontraded goods.", <http://www-personal.umich.edu/~alandear/glossary/r.html#RealExchangeRate>, accessed on 03/09/16.

Repurchase agreement (Repo)

"(...) is a type of short-term loan much used in the money markets, whereby the seller of a security agrees to buy it back at a specified price and time. The seller pays an interest rate, called the repo rate, when buying back the securities. (...)",

<http://lexicon.ft.com/Term?term=repurchase-agreement>, accessed on 03/01/16.

SDR - Special Drawing Right

"Monetary unit established by the International Monetary Fund (IMF) as an additional international reserve asset and allocated to governments in proportion to their IMF funding quotas. The value of an SDR is determined by a weighted basket of major currencies.",

<http://lexicon.ft.com/Term?term=special-drawing-rights--SDRs>, accessed on 02/25/16.

Spread

"Generally, the difference between two prices or interest rates. (...)",

<http://lexicon.ft.com/Term?term=spread>, accessed on 02/27/16.

Tapering

“The word tapering in financial terms is increasingly being used to refer to the reduction of the Federal Reserve’s quantitative easing, or bond buying programme.(...)”,
<http://lexicon.ft.com/Term?term=tapering>

Term premium

“(...) a term premium is the extra return that lenders demand to hold a longer-term bond instead of investing in a series of short-term securities (a new one-year security each year, for example). Typically, long-term yields are higher than short-term yields, implying that term premiums are usually positive (investors require extra compensation to hold longer-term bonds instead of short-term securities).”,
<http://www.brookings.edu/blogs/ben-bernanke/posts/2015/04/13-interest-rate-term-premiums>, accessed on 02/29/16.

Tier one capital

“One of the two categories into which a bank’s capital is divided, consisting of the most central and important types of capital. According to banking rules, banks must keep a certain amount of tier one capital to protect them against failing. (...)”, <http://lexicon.ft.com/Term?term=tier-one-capital>, accessed on 02/22/16.

Total Factor Productivity

“(...) total factor productivity (TFP) can be taken as a measure of an economy’s long-term technological change or technological dynamism. (...)”,
https://en.wikipedia.org/wiki/Total_factor_productivity, accessed on 04/13/16.

“(...) is the portion of output not explained by the amount of inputs used in production (...)”,
http://www.dictionaryofeconomics.com/article?id=pde2008_T000081&edition=current&q=tfp&topicid=&result_number=2, accessed on 04/13/16.

Trading profit

“The profit made by a financial institution from buying and selling investments another name for operating profit.”, <http://lexicon.ft.com/Search?searchText=trading-profit>, accessed on 02/27/16.

Value Added Tax (VAT)

“A value-added tax (VAT) or goods and services tax (GST) is a popular way of implementing a consumption tax in Europe, Japan, and many other countries. It differs from the sales tax in that taxes are applied to the difference between the seller-purchased price and the resale price. (...)”,
https://en.wikipedia.org/wiki/Value-added_tax, accessed on 04/03/16.

Value at risk

“(...) the largest possible loss that an institution or other investor could incur on a portfolio. (...)”,
<http://lexicon.ft.com/Term?term=value-at-risk--VaR>, accessed on 03/01/16.

Vector autoregression (VAR)

“The vector autoregression (VAR) is an econometric model used to capture the linear interdependencies among multiple time series. (...). All variables in a VAR are treated symmetrically in a structural sense (although the estimated quantitative response coefficients will not in general be the same); each variable has an equation explaining its evolution based on its own lags and the lags of the other model variables. VAR modeling does not require as much knowledge about the forces influencing a variable as do structural models with simultaneous equations: The only prior knowledge required is a list of variables which can be hypothesized to affect each other intertemporally.”, https://en.wikipedia.org/wiki/Vector_autoregression, accessed on 03/20/16.

Yield curve

“A graphical representation of the relationship between the yields and maturities of different bonds of similar quality, currency denomination and risk (usually government bonds).”,
<http://lexicon.ft.com/Term?term=yield-curve>, accessed on 03/31/16.

Abbreviations and Acronyms

APP	Asset Purchase Programme
Bbl	Barrel
BIS	Bank for International Settlements
CNH	Chinese offshore rate exchange rate
CNY	Chinese Yuan, onshore exchange rate
Cum	Cubic meter
Dmt	Dry metric ton
EBITDA	Earnings before Interest, Taxes, Depreciation, and Amortization
ECB	European Central Bank
ELA	Emergency liquidity assistance
EM	Emerging Market
EMDE	Emerging and developing economies
EMU	Economic and Monetary Union
ESM	European Stability Mechanism
FED	U.S. Federal Reserve
FOMC	Federal Open Market Committee
GDP	Gross Domestic Product

GFSR	Global Financial Stability Report
IMF	International Monetary Fund
LDR	Loan-to-Deposit Ratio
LHS	Left Hand Side
Mmbtu	Million British thermal units
Mt	Metric ton (1,000 kilograms)
NPL	Nonperforming Loan
OPEC	Organization of the Petroleum Exporting Countries
PBOC	People's Bank of China
RHS	Right Hand Side
RMB	Renminbi
SOE	State-owned enterprise
Toz	Troy oz
WB	The World Bank
WEO	World Economic Outlook
\$	U.S. dollar

Statistical Appendix

Table A. 1: Classification of Economic Groups and Their Shares in Aggregate GDP, Exports of Goods and Services, Population, in 2014
(Percent of total for group or world) ¹

	Number of Economies	GDP		Exports of Goods and Services		Population	
		Advanced Economies	World	Advanced Economies	World	Advanced Economies	World
Advanced Economies	37	100.0	42.9	100.0	62.2	100.0	14.7
United States		37.2	15.9	16.0	10.0	30.5	4.5
Euro Area	19	28.4	12.2	41.2	25.7	32.2	4.7
Germany		8.0	3.4	12.1	7.5	7.8	1.1
France		5.6	2.4	5.9	3.7	6.1	0.9
Italy		4.6	2.0	4.3	2.7	5.8	0.9
Spain		3.4	1.4	3.1	1.9	4.4	0.7
Japan		10.2	4.4	5.9	3.7	12.2	1.8
United Kingdom		5.5	2.4	5.7	3.6	6.2	0.9
Canada		3.4	1.5	3.9	2.4	3.4	0.5
Other Advanced Economies	14	15.2	6.5	27.3	17.0	15.6	2.3
<i>Memorandum</i>							
Major Advanced Economies	7	74.6	32.0	53.8	33.5	72.0	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	152	100.0	57.1	100.0	37.8	100.0	85.3
Regional Groups							
Commonwealth of Independent States ²	12	8.2	4.7	9.5	3.6	4.7	4.0
Russia		5.8	3.3	6.3	2.4	2.4	2.1
Emerging and Developing Asia	29	52.3	29.9	45.4	17.1	57.3	48.9
China		29.1	16.6	27.9	10.5	22.5	19.2
India		11.9	6.8	5.3	2.0	21.0	17.9
Excluding China and India	27	11.3	6.4	12.2	4.6	13.8	11.8
Emerging and Developing Europe	12	5.7	3.3	8.9	3.3	2.8	2.4
Latin America and the Caribbean	32	15.1	8.6	13.8	5.2	9.9	8.5
Brazil		5.3	3.0	3.0	1.1	3.3	2.8
Mexico		3.5	2.0	4.7	1.8	2.0	1.7
Middle East, North Africa, Afghanistan, and Pakistan	22	13.3	7.6	17.3	6.5	10.5	9.0
Middle East and North Africa	20	11.8	6.8	16.9	6.4	6.9	5.9
Sub-Saharan Africa	45	5.4	3.1	5.1	1.9	14.7	12.6
Excluding Nigeria and South Africa	43	2.6	1.5	2.9	1.1	11.0	9.4
Analytical Groups³							
By Source of Export Earnings							
Fuel	29	20.6	11.8	27.7	10.5	12.4	10.6
Nonfuel	123	79.4	45.4	72.3	27.3	87.6	74.8
Of Which, Primary Products	29	4.9	2.8	4.6	1.7	7.7	6.6
By External Financing Source							
Net Debtor Economies	118	50.4	28.8	45.4	17.1	64.8	55.3
Net Debtor Economies by Debt-Servicing Experience							
Economies with Arrears and/or Rescheduling during 2010–14	19	3.1	1.8	2.3	0.9	5.7	4.8
Other Groups							
Heavily Indebted Poor Countries	38	2.4	1.4	1.9	0.7	11.1	9.5
Low-Income Developing Countries	59	7.3	4.2	6.2	2.3	22.3	19.0

¹The 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.

²Georgia, Turkmenistan, and Ukraine, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.

³South Sudan is omitted from the net external position groups composite for lack of a fully developed database.

(Source: IMF, 2015f, 147)

Table A. 2: Advanced Economies by Subgroup

Major Currency Areas		
United States		
Euro Area		
Japan		
Euro Area		
Austria	Greece	Netherlands
Belgium	Ireland	Portugal
Cyprus	Italy	Slovak Republic
Estonia	Latvia	Slovenia
Finland	Lithuania	Spain
France	Luxembourg	
Germany	Malta	
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	

¹On July 1, 1997, Hong Kong was returned to the People's Republic of China and became a Special Administrative Region of China.

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	

(Source: IMF, 2015f, p. 148)

Table A. 3: 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 ¹	Heavily Indebted Poor Countries ²	Low-Income Developing Countries		Net External Position ¹	Heavily Indebted Poor Countries ²	Low-Income Developing Countries
Commonwealth of Independent States³				Bulgaria	*		
Armenia	*			Croatia	*		
Azerbaijan	•			Hungary	*		
Belarus	*			Kosovo	*		
Georgia	*			FYR Macedonia	*		
Kazakhstan	*			Montenegro	*		
Kyrgyz Republic	*		*	Poland	*		
Moldova	*		*	Romania	*		
Russia	•			Serbia	*		
Tajikistan	*		*	Turkey	*		
Turkmenistan	•			Latin America and the Caribbean			
Ukraine	*			Antigua and Barbuda	*		
Uzbekistan	•		*	Argentina	•		
Emerging and Developing Asia				The Bahamas	*		
Bangladesh	*		*	Barbados	*		
Bhutan	*		*	Belize	*		
Brunei Darussalam	•			Bolivia	•	•	*
Cambodia	*		*	Brazil	*		
China	•			Chile	*		
Fiji	*			Colombia	*		
India	*			Costa Rica	*		
Indonesia	*			Dominica	*		
Kiribati	•		*	Dominican Republic	*		
Lao P.D.R.	*		*	Ecuador	*		
Malaysia	*			El Salvador	*		
Maldives	*			Grenada	*		
Marshall Islands	•			Guatemala	*		
Micronesia	*			Guyana	*	•	
Mongolia	*		*	Haiti	*	•	*
Myanmar	*		*	Honduras	*	•	*
Nepal	•		*	Jamaica	*		
Palau	•			Mexico	*		
Papua New Guinea	*		*	Nicaragua	*	•	*
Philippines	*			Panama	*		
Samoa	*			Paraguay	*		
Solomon Islands	*		*	Peru	*		
Sri Lanka	*			St. Kitts and Nevis	*		
Thailand	*			St. Lucia	*		
Timor-Leste	•			St. Vincent and the Grenadines	*		
Tonga	*			Suriname	*		
Tuvalu	*			Trinidad and Tobago	•		
Vanuatu	*			Uruguay	*		
Vietnam	*		*	Venezuela	•		
Emerging and Developing Europe							
Albania	*						
Bosnia and Herzegovina	*						

(continued)

	Net External Position ¹	Heavily Indebted Poor Countries ²	Low-Income Developing Countries		Net External Position ¹	Heavily Indebted Poor Countries ²	Low-Income Developing Countries	
Middle East, North Africa, Afghanistan, and Pakistan					Republic of Congo	*	•	*
Afghanistan	•	•	*	Côte d'Ivoire	*	•	*	
Algeria	•			Equatorial Guinea	*			
Bahrain	•			Eritrea	*	*	*	
Djibouti	*		*	Ethiopia	*	•	*	
Egypt	*			Gabon	•			
Iran	•			The Gambia	*	•	*	
Iraq	•			Ghana	*	•	*	
Jordan	*			Guinea	*	•	*	
Kuwait	•			Guinea-Bissau	*	•	*	
Lebanon	*			Kenya	*		*	
Libya	•			Lesotho	*		*	
Mauritania	*	•	*	Liberia	*	•	*	
Morocco	*			Madagascar	*	•	*	
Oman	•			Malawi	*	•	*	
Pakistan	*			Mali	*	•	*	
Qatar	•			Mauritius	•			
Saudi Arabia	•			Mozambique	*	•	*	
Sudan	*	*	*	Namibia	•			
Syria	*			Niger	*	•	*	
Tunisia	*			Nigeria	•		*	
United Arab Emirates	•			Rwanda	*	•	*	
Yemen	*		*	São Tomé and Príncipe	*	•	*	
Sub-Saharan Africa					Senegal	*	•	*
Angola	•			Seychelles	*			
Benin	*	•	*	Sierra Leone	*	•	*	
Botswana	•			South Africa	*			
Burkina Faso	*	•	*	South Sudan ⁴	...		*	
Burundi	*	•	*	Swaziland	*			
Cabo Verde	*			Tanzania	*	•	*	
Cameroon	*	•	*	Togo	•	•	*	
Central African Republic	*	•	*	Uganda	*	•	*	
Chad	*	•	*	Zambia	*	•	*	
Comoros	*	•	*	Zimbabwe	*		*	
Democratic Republic of the Congo	*	•	*					

¹Dot (star) indicates that the country is a net creditor (net debtor).

²Dot instead of star indicates that the country has reached the completion point.

³Georgia, Turkmenistan, and Ukraine, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.

⁴South Sudan is omitted from the net external position group composite for lack of a fully developed database.

(Source: IMF, 2015f, p. 150-151)

Table A. 4: Overview of the World Economic Outlook Projections
(Percent change unless noted otherwise; Output is the real GDP growth rate)

	Year over Year						Q4 over Q4		
	2014	Estimates	Projections		Difference from October 2015 WEO Projections 1/		Estimates	Projections	
		2015	2016	2017	2016	2017	2015	2016	2017
World Output 2/	3.4	3.1	3.4	3.6	-0.2	-0.2	3.0	3.4	3.6
Advanced Economies	1.8	1.9	2.1	2.1	-0.1	-0.1	1.8	2.2	2.0
United States	2.4	2.5	2.6	2.6	-0.2	-0.2	2.1	2.7	2.5
Euro Area	0.9	1.5	1.7	1.7	0.1	0.0	1.5	1.8	1.6
Germany	1.6	1.5	1.7	1.7	0.1	0.2	1.5	1.7	1.7
France	0.2	1.1	1.3	1.5	-0.2	-0.1	1.3	1.6	1.5
Italy	-0.4	0.8	1.3	1.2	0.0	0.0	1.3	1.3	1.1
Spain	1.4	3.2	2.7	2.3	0.2	0.1	3.4	2.3	2.3
Japan	0.0	0.6	1.0	0.3	0.0	-0.1	1.5	1.2	-0.3
United Kingdom	2.9	2.2	2.2	2.2	0.0	0.0	2.0	2.2	2.2
Canada	2.5	1.2	1.7	2.1	0.0	-0.3	0.6	2.0	2.2
Other Advanced Economies 3/	2.8	2.1	2.4	2.8	-0.3	-0.1	2.0	2.5	3.3
Emerging Market and Developing Economies 4/	4.6	4.0	4.3	4.7	-0.2	-0.2	4.0	4.5	4.9
Commonwealth of Independent States	1.0	-2.8	0.0	1.7	-0.5	-0.3	-3.3	0.1	1.6
Russia	0.6	-3.7	-1.0	1.0	-0.4	0.0	-4.1	0.2	1.4
Excluding Russia	1.9	-0.7	2.3	3.2	-0.5	-0.8	...	...	...
Emerging and Developing Asia	6.8	6.6	6.3	6.2	-0.1	-0.1	6.5	6.2	6.3
China	7.3	6.9	6.3	6.0	0.0	0.0	6.8	6.1	6.0
India 5/	7.3	7.3	7.5	7.5	0.0	0.0	7.3	7.5	7.6
ASEAN-5 6/	4.6	4.7	4.8	5.1	-0.1	-0.2	4.6	4.8	5.5
Emerging and Developing Europe	2.8	3.4	3.1	3.4	0.1	0.0	3.7	5.0	2.6
Latin America and the Caribbean	1.3	-0.3	-0.3	1.6	-1.1	-0.7	-1.5	0.3	2.0
Brazil	0.1	-3.8	-3.5	0.0	-2.5	-2.3	-5.6	-1.6	0.5
Mexico	2.3	2.5	2.6	2.9	-0.2	-0.2	2.5	2.7	3.0
Middle East, North Africa, Afghanistan, and Pakistan	2.8	2.5	3.6	3.6	-0.3	-0.5	...	...	...
Saudi Arabia	3.6	3.4	1.2	1.9	-1.0	-1.0	3.6	0.5	2.3
Sub-Saharan Africa	5.0	3.5	4.0	4.7	-0.3	-0.2	...	...	...
Nigeria	6.3	3.0	4.1	4.2	-0.2	-0.3	...	...	...
South Africa	1.5	1.3	0.7	1.8	-0.6	-0.3	0.4	0.9	2.4
Memorandum									
Low-Income Developing Countries	6.0	4.6	5.6	5.9	-0.2	-0.2	...	...	...
World Growth Based on Market Exchange Rates	2.7	2.5	2.7	3.0	-0.3	-0.2	2.3	2.8	3.0
World Trade Volume (goods and services)	3.4	2.6	3.4	4.1	-0.7	-0.5	...	...	...
Imports									
Advanced Economies	3.4	4.0	3.7	4.1	-0.5	-0.4	...	...	...
Emerging Market and Developing Economies	3.7	0.4	3.4	4.3	-1.0	-1.1	...	...	...
Commodity Prices (U.S. dollars)									
Oil 7/	-7.5	-47.1	-17.6	14.9	-15.2	4.8	-42.7	5.3	11.1
Nonfuel (average based on world commodity export weights)	-4.0	-17.4	-9.5	0.4	-4.4	0.1	-19.0	-2.2	0.3
Consumer Prices									
Advanced Economies	1.4	0.3	1.1	1.7	-0.1	0.0	0.4	1.3	1.9
Emerging Market and Developing Economies 4/	5.1	5.5	5.6	5.9	0.5	1.0	7.0	9.9	20.4
London Interbank Offered Rate (percent)									
On U.S. Dollar Deposits (six month)	0.3	0.5	1.2	2.2	0.0	0.0	...	...	...
On Euro Deposits (three month)	0.2	0.0	-0.3	-0.2	-0.3	-0.3	...	...	...
On Japanese Yen Deposits (six month)	0.2	0.1	0.1	0.1	0.0	-0.1	...	...	...

Note: Real effective exchange rates are assumed to remain constant at the levels prevailing during November 9–December 7, 2015. Economies are listed on the basis of economic size. The aggregated quarterly data are seasonally adjusted.

1/ Difference based on rounded figures for both the current and October 2015 WEO forecasts.

2/ Countries included in the calculation of quarterly estimates and projections account for approximately 90 percent of world GDP at purchasing power parities.

3/ Excludes the G7 (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and euro area countries.

4/ Countries included in the calculation of quarterly estimates and projections account for approximately 80 percent of the GDP of emerging market and developing economies at purchasing power parities.

5/ For India, data and forecasts are presented on a fiscal year basis and GDP from 2011 onward is based on GDP at market prices with FY2011/12 as a base year.

6/ Indonesia, Malaysia, Philippines, Thailand, Vietnam.

7/ 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 \$50.02 in 2015; the assumed price based on futures markets (as of December 10, 2015) is \$41.97 in 2016 and \$48.21 in 2017.

(Source: IMF, 2016, p.6)

Table A. 5: Advanced Economies: Real GDP
(Annual percent change)

	Average										Projections			Fourth Quarter ²		
	1997–2006										2015			2014:Q4		
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2020	2014:Q4	2015:Q4	2016:Q4		
Real GDP																
Advanced Economies	2.8	2.8	0.2	-3.4	3.1	1.7	1.2	1.1	1.8	2.0	2.2	1.9	1.8	2.0	2.3	
United States	3.3	1.8	-0.3	-2.8	2.5	1.6	2.2	1.5	2.4	2.6	2.8	2.0	2.5	2.5	2.8	
Euro Area ³	2.3	3.0	0.5	-4.6	2.0	1.6	-0.8	-0.3	0.9	1.5	1.6	1.6	0.9	1.5	1.7	
Germany	1.5	3.4	0.8	-5.6	3.9	3.7	0.6	0.4	1.6	1.5	1.6	1.3	1.5	1.6	1.6	
France	2.4	2.4	0.2	-2.9	2.0	2.1	0.2	0.7	0.2	1.2	1.5	1.9	0.1	1.5	1.5	
Italy	1.5	1.5	-1.0	-5.5	1.7	0.6	-2.8	-1.7	-0.4	0.8	1.3	1.0	-0.4	1.2	1.5	
Spain	3.9	3.8	1.1	-3.6	0.0	-0.6	-2.1	-1.2	1.4	3.1	2.5	1.8	2.0	3.2	2.2	
Netherlands	2.8	3.7	1.7	-3.8	1.4	1.7	-1.1	-0.5	1.0	1.8	1.9	2.1	1.5	0.8	2.8	
Belgium	2.4	3.0	1.0	-2.6	2.5	1.6	0.1	0.3	1.1	1.3	1.5	1.5	1.0	1.7	1.4	
Austria	2.5	3.6	1.5	-3.8	1.9	2.8	0.8	0.3	0.4	0.8	1.6	1.1	-0.2	1.3	2.2	
Greece	4.1	3.5	-0.4	-4.4	-5.4	-8.9	-6.6	-3.9	0.8	-2.3	-1.3	2.4	1.4	-5.4	3.0	
Portugal	2.3	2.5	0.2	-3.0	1.9	-1.8	-4.0	-1.6	0.9	1.6	1.5	1.2	0.6	1.6	1.5	
Ireland	7.3	5.5	-2.2	-5.6	0.4	2.6	0.2	1.4	5.2	4.8	3.8	2.5	6.0	2.6	2.6	
Finland	3.9	5.2	0.7	-8.3	3.0	2.6	-1.4	-1.1	-0.4	0.4	0.9	1.6	-0.5	1.0	0.4	
Slovak Republic	4.3	10.7	5.4	-5.3	4.8	2.7	1.6	1.4	2.4	3.2	3.6	3.1	2.6	3.4	3.8	
Lithuania	6.4	11.1	2.6	-14.8	1.6	6.1	3.8	3.3	2.9	1.8	2.6	3.6	2.6	1.2	3.6	
Slovenia	4.1	6.9	3.3	-7.8	1.2	0.6	-2.7	-1.1	3.0	2.3	1.8	2.0	2.4	1.8	2.1	
Luxembourg	4.9	8.4	-0.8	-5.4	5.7	2.6	-0.7	4.4	5.6	4.4	3.4	3.0	8.5	2.8	3.5	
Latvia	7.6	9.8	-3.2	-14.2	-2.9	5.0	4.8	4.2	2.4	2.2	3.3	4.0	2.0	2.1	4.0	
Estonia	7.1	7.7	-5.4	-14.7	2.5	7.6	5.2	1.6	2.9	2.0	2.9	3.4	3.4	3.1	3.0	
Cyprus ⁴	4.0	4.9	3.6	-2.0	1.4	0.3	-2.4	-5.4	-2.3	0.5	1.4	1.8	-1.8	...	...
Malta	2.3	3.9	3.3	-2.5	3.5	2.1	2.5	2.4	3.5	3.4	3.5	2.6	4.1	3.3	3.5	
Japan	0.9	2.2	-1.0	-5.5	4.7	-0.5	1.7	1.6	-0.1	0.6	1.0	0.7	-0.8	1.3	1.3	
United Kingdom	3.1	2.6	-0.3	-4.3	1.9	1.6	0.7	1.7	3.0	2.5	2.2	2.1	3.4	2.2	2.2	
Korea	4.9	5.5	2.8	0.7	6.5	3.7	2.3	2.9	3.3	2.7	3.2	3.6	2.7	3.8	2.0	
Canada	3.4	2.0	1.2	-2.7	3.4	3.0	1.9	2.0	2.4	1.0	1.7	2.0	2.5	0.5	2.0	
Australia	3.6	4.5	2.7	1.6	2.3	2.7	3.6	2.1	2.7	2.4	2.9	2.8	2.5	2.5	3.2	
Taiwan Province of China	4.9	6.5	0.7	-1.6	10.6	3.8	2.1	2.2	3.8	2.2	2.6	3.2	3.2	2.5	2.9	
Switzerland	2.2	4.2	2.2	-2.1	2.9	1.9	1.1	1.8	1.9	1.0	1.3	1.9	2.0	0.5	1.5	
Sweden	3.4	3.4	-0.6	-5.2	6.0	2.7	-0.3	1.3	2.3	2.8	3.0	2.1	2.6	2.6	3.0	
Singapore	5.4	9.1	1.8	-0.6	15.2	6.2	3.4	4.4	2.9	2.2	2.9	3.2	2.2	2.1	2.7	
Hong Kong SAR	3.7	6.5	2.1	-2.5	6.8	4.8	1.7	3.1	2.5	2.5	2.7	3.3	2.3	2.7	3.1	
Norway	2.6	2.9	0.4	-1.6	0.6	1.0	2.7	0.7	2.2	0.9	1.3	2.0	3.0	-0.7	2.8	
Czech Republic	3.1	5.5	2.7	-4.8	2.3	2.0	-0.9	-0.5	2.0	3.9	2.6	2.2	1.3	3.5	2.4	
Israel	3.7	6.1	3.1	1.3	5.5	5.0	2.9	3.3	2.6	2.5	3.3	2.9	2.9	1.9	4.0	
Denmark	2.3	0.8	-0.7	-5.1	1.6	1.2	-0.7	-0.5	1.1	1.6	2.0	2.2	1.4	1.7	0.9	
New Zealand	3.4	3.7	-0.8	0.5	2.0	1.3	2.9	2.5	3.3	2.2	2.4	2.5	4.2	1.8	2.2	
Iceland	4.5	9.5	1.5	-4.7	-3.6	2.0	1.2	3.9	1.8	4.8	3.7	2.4	1.9	4.4	3.2	
San Marino	...	7.1	1.7	-12.8	-4.6	-9.5	-7.5	-4.5	-1.0	1.0	1.1	1.3	...	...	...
<i>Memorandum</i>																
Major Advanced Economies	2.5	2.1	-0.2	-3.8	2.9	1.6	1.4	1.2	1.7	1.9	2.2	1.7	1.6	1.9	2.2	
Real Total Domestic Demand																
Advanced Economies	2.9	2.3	-0.3	-3.7	3.0	1.4	0.8	0.8	1.8	2.2	2.5	2.0	1.7	2.3	2.6	
United States	3.7	1.1	-1.3	-3.8	2.9	1.6	2.1	1.2	2.5	3.2	3.5	2.1	2.9	3.2	3.5	
Euro Area ³	2.3	2.8	0.3	-4.0	1.4	0.7	-2.3	-0.7	0.9	1.4	1.6	1.5	1.0	1.3	1.7	
Germany	0.9	1.8	1.0	-3.2	2.9	3.0	-0.9	0.9	1.3	1.2	1.5	1.4	1.5	1.1	1.7	
France	2.5	3.1	0.5	-2.5	2.1	2.0	-0.3	0.7	0.6	1.1	1.5	1.9	0.4	1.3	1.8	
Italy	1.9	1.3	-1.2	-4.1	2.0	-0.6	-5.5	-2.5	-0.7	0.9	1.0	1.0	-1.0	1.4	1.3	
Spain	4.8	4.1	-0.4	-6.0	-0.5	-2.7	-4.2	-2.7	2.3	3.7	2.4	1.4	2.8	4.4	1.1	
Japan	0.5	1.1	-1.3	-4.0	2.9	0.4	2.6	1.9	-0.1	0.4	0.8	0.6	-1.8	1.6	0.9	
United Kingdom	3.4	2.5	-1.3	-4.4	2.5	0.3	1.4	1.8	3.5	2.3	2.3	2.3	2.8	2.3	2.2	
Canada	3.6	3.4	2.8	-2.7	5.2	3.3	2.2	1.8	1.3	0.3	0.8	1.9	1.3	-0.8	2.0	
Other Advanced Economies ⁵	3.3	4.9	1.7	-2.6	6.3	3.0	1.8	1.3	2.3	2.4	2.9	3.1	1.8	2.6	3.3	
<i>Memorandum</i>																
Major Advanced Economies	2.7	1.6	-0.7	-3.7	2.9	1.4	1.1	1.1	1.7	2.1	2.4	1.8	1.6	2.3	2.5	

¹In this and other tables, when countries are not listed alphabetically, they are ordered on the basis of economic size.

²From the fourth quarter of the preceding year.

³Data for Lithuania are included in the euro area aggregates but were excluded in the April 2015 *World Economic Outlook*.

⁴Owing to the unusual macroeconomic uncertainty, quarterly real GDP projections are not available.

⁵Excludes the G7 (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and euro area countries.

(Source: IMF, 2015f, p. 169)

Table A. 6: Emerging Market and Developing Economies: Real GDP
(Annual percent change)

	Average										Projections		
	1997–2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2020	
Commonwealth of Independent States^{1,2}	5.5	9.0	5.3	-6.3	4.6	4.8	3.4	2.2	1.0	-2.7	0.5	2.5	
Russia	5.0	8.5	5.2	-7.8	4.5	4.3	3.4	1.3	0.6	-3.8	-0.6	1.5	
Excluding Russia	6.6	10.4	5.6	-2.5	5.0	6.2	3.6	4.2	1.9	-0.1	2.8	4.6	
Armenia	9.4	13.7	6.9	-14.1	2.2	4.7	7.1	3.5	3.4	2.5	2.2	3.5	
Azerbaijan	12.5	25.0	10.8	9.3	5.0	0.1	2.2	5.8	2.8	4.0	2.5	3.4	
Belarus	7.6	8.7	10.3	0.1	7.7	5.5	1.7	1.0	1.6	-3.6	-2.2	1.6	
Georgia	6.4	12.6	2.6	-3.7	6.2	7.2	6.4	3.3	4.8	2.0	3.0	5.0	
Kazakhstan	7.4	8.9	3.3	1.2	7.3	7.5	5.0	6.0	4.3	1.5	2.4	4.5	
Kyrgyz Republic	4.3	8.5	7.6	2.9	-0.5	6.0	-0.9	10.5	3.6	2.0	3.6	5.3	
Moldova	3.3	3.0	7.8	-6.0	7.1	6.8	-0.7	9.4	4.6	-1.0	1.5	4.0	
Tajikistan	7.2	7.8	7.9	3.9	6.5	7.4	7.5	7.4	6.7	3.0	3.4	5.0	
Turkmenistan	11.9	11.1	14.7	6.1	9.2	14.7	11.1	10.2	10.3	8.5	8.9	8.2	
Ukraine ³	4.6	8.2	2.2	-15.1	0.3	5.5	0.2	0.0	-6.8	-9.0	2.0	4.0	
Uzbekistan	5.2	9.5	9.0	8.1	8.5	8.3	8.2	8.0	8.1	6.8	7.0	6.5	
Emerging and Developing Asia	7.1	11.2	7.3	7.5	9.6	7.9	6.8	7.0	6.8	6.5	6.4	6.5	
Bangladesh	5.6	6.5	5.5	5.3	6.0	6.5	6.3	6.0	6.3	6.5	6.8	6.7	
Bhutan	7.0	12.6	10.8	5.7	9.3	10.1	6.4	4.9	6.4	7.7	8.4	6.5	
Brunei Darussalam	1.9	0.1	-2.0	-1.8	2.7	3.7	0.9	-2.1	-2.3	-1.2	3.2	5.0	
Cambodia	8.9	10.2	6.7	0.1	6.0	7.1	7.3	7.4	7.0	7.0	7.2	7.3	
China	9.4	14.2	9.6	9.2	10.6	9.5	7.7	7.7	7.3	6.8	6.3	6.3	
Fiji	2.2	-0.9	1.0	-1.4	3.0	2.7	1.8	4.6	5.3	4.3	3.7	3.7	
India	6.6	9.8	3.9	8.5	10.3	6.6	5.1	6.9	7.3	7.3	7.5	7.7	
Indonesia	2.5	6.3	7.4	4.7	6.4	6.2	6.0	5.6	5.0	4.7	5.1	6.0	
Kiribati	1.9	2.2	-0.8	0.3	-0.9	-0.2	3.4	2.4	3.7	3.1	1.8	1.5	
Lao P.D.R.	6.2	7.8	7.8	7.5	8.1	8.0	7.9	8.0	7.4	7.5	8.0	7.4	
Malaysia	4.3	6.3	4.8	-1.5	7.5	5.3	5.5	4.7	6.0	4.7	4.5	5.0	
Maldives	8.4	10.8	13.3	-1.8	6.6	6.6	1.6	-4.8	6.1	2.9	3.1	4.7	
Marshall Islands	...	3.8	-2.0	-1.7	6.1	0.0	4.7	3.0	0.5	1.7	2.2	1.6	
Micronesia	0.5	-2.1	-2.5	0.9	3.2	1.8	0.0	-3.9	-1.6	-0.2	1.7	0.7	
Mongolia	5.3	8.8	7.8	-2.1	7.3	17.3	12.3	11.6	7.8	3.5	3.6	9.1	
Myanmar	...	12.0	3.6	5.1	5.3	5.6	7.3	8.4	8.5	8.5	8.4	7.7	
Nepal	4.0	3.4	6.1	4.5	4.8	3.4	4.8	4.1	5.4	3.4	4.4	3.8	
Palau	...	0.0	-4.8	-10.5	3.7	4.7	3.2	-1.8	4.9	4.0	2.7	2.0	
Papua New Guinea	1.0	7.2	6.6	6.1	7.7	10.7	8.1	5.5	8.5	12.3	3.0	3.2	
Philippines	4.0	6.6	4.2	1.1	7.6	3.7	6.7	7.1	6.1	6.0	6.3	6.5	
Samoa	3.6	1.1	2.9	-6.4	-2.3	6.2	1.2	-1.1	1.9	2.6	1.6	2.0	
Solomon Islands	0.3	6.4	7.1	-4.7	6.9	12.9	4.7	3.0	1.5	3.3	3.0	3.6	
Sri Lanka	4.5	6.8	6.0	3.5	8.0	8.2	6.3	7.3	7.4	6.5	6.5	6.5	
Thailand	3.0	5.4	1.7	-0.7	7.5	0.8	7.3	2.8	0.9	2.5	3.2	3.2	
Timor-Leste ⁴	...	11.4	14.2	13.0	9.4	9.5	6.4	2.8	4.5	4.3	5.0	6.0	
Tonga	1.0	-1.1	1.8	2.6	3.1	1.3	-1.1	-0.3	2.3	2.7	2.4	0.7	
Tuvalu	...	6.4	8.0	-4.4	-2.7	8.5	0.2	1.3	2.2	3.5	4.0	1.6	
Vanuatu	2.5	5.2	6.5	3.3	1.6	1.2	1.8	2.0	2.3	-2.0	5.0	2.5	
Vietnam	6.9	7.1	5.7	5.4	6.4	6.2	5.2	5.4	6.0	6.5	6.4	6.0	
Emerging and Developing Europe	4.1	5.5	3.1	-3.0	4.8	5.4	1.3	2.9	2.8	3.0	3.0	3.4	
Albania	5.1	5.9	7.5	3.4	3.7	2.5	1.6	1.4	1.9	2.7	3.4	4.2	
Bosnia and Herzegovina	7.8	6.0	5.6	-2.7	0.8	1.0	-1.2	2.5	1.1	2.0	3.0	4.0	
Bulgaria	3.5	6.9	5.8	-5.0	0.7	2.0	0.5	1.1	1.7	1.7	1.9	2.5	
Croatia	3.8	5.2	2.1	-7.4	-1.7	-0.3	-2.2	-1.1	-0.4	0.8	1.0	1.8	
Hungary	4.0	0.5	0.9	-6.6	0.8	1.8	-1.5	1.5	3.6	3.0	2.5	2.1	
Kosovo	...	8.3	4.5	3.6	3.3	4.4	2.8	3.4	2.7	3.2	3.8	4.1	
FYR Macedonia	2.9	6.5	5.5	-0.4	3.4	2.3	-0.5	2.7	3.8	3.2	3.2	3.8	
Montenegro	...	10.7	6.9	-5.7	2.5	3.2	-2.5	3.3	1.5	3.2	4.9	3.3	
Poland	4.2	7.2	3.9	2.6	3.7	4.8	1.8	1.7	3.4	3.5	3.5	3.6	
Romania	2.7	6.9	8.5	-7.1	-0.8	1.1	0.6	3.4	2.8	3.4	3.9	3.3	
Serbia	...	5.9	5.4	-3.1	0.6	1.4	-1.0	2.6	-1.8	0.5	1.5	4.0	
Turkey	4.3	4.7	0.7	-4.8	9.2	8.8	2.1	4.2	2.9	3.0	2.9	3.5	

(continued)

	Average									Projections		
	1997–2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2020
Latin America and the Caribbean	3.1	5.7	3.9	-1.3	6.1	4.9	3.1	2.9	1.3	-0.3	0.8	2.8
Antigua and Barbuda	4.5	7.1	1.5	-10.7	-8.5	-1.9	3.6	1.5	4.2	2.2	2.1	2.7
Argentina ⁵	2.6	8.0	3.1	0.1	9.5	8.4	0.8	2.9	0.5	0.4	-0.7	0.2
The Bahamas	3.2	1.4	-2.3	-4.2	1.5	0.6	2.2	0.0	1.0	1.2	2.2	1.5
Barbados	2.5	1.8	0.4	-4.0	0.3	0.8	0.3	0.0	0.2	1.0	1.1	2.0
Belize	6.0	1.1	3.2	0.7	3.3	2.1	3.8	1.5	3.6	2.2	3.2	2.4
Bolivia	3.3	4.6	6.1	3.4	4.1	5.2	5.1	6.8	5.5	4.1	3.5	3.5
Brazil	2.7	6.0	5.0	-0.2	7.6	3.9	1.8	2.7	0.1	-3.0	-1.0	2.5
Chile	4.1	5.2	3.2	-1.0	5.7	5.8	5.5	4.3	1.9	2.3	2.5	3.5
Colombia	2.7	6.9	3.5	1.7	4.0	6.6	4.0	4.9	4.6	2.5	2.8	4.1
Costa Rica	5.3	7.9	2.7	-1.0	5.0	4.5	5.2	3.4	3.5	3.0	4.0	4.3
Dominica	2.0	6.4	7.1	-1.2	0.7	-0.1	-1.3	0.6	3.9	2.8	3.3	1.9
Dominican Republic	5.5	8.5	3.1	0.9	8.3	2.8	2.6	4.8	7.3	5.5	4.5	4.0
Ecuador	3.2	2.2	6.4	0.6	3.5	7.9	5.2	4.6	3.8	-0.6	0.1	1.8
El Salvador	2.9	3.8	1.3	-3.1	1.4	2.2	1.9	1.8	2.0	2.3	2.5	2.0
Grenada	5.0	6.1	0.9	-6.6	-0.5	0.8	-1.2	2.3	5.7	3.4	2.4	2.5
Guatemala	3.5	6.3	3.3	0.5	2.9	4.2	3.0	3.7	4.2	3.8	3.7	3.5
Guyana	1.3	7.0	2.0	3.3	4.4	5.4	4.8	5.2	3.8	3.2	4.9	3.2
Haiti	0.8	3.3	0.8	3.1	-5.5	5.5	2.9	4.2	2.7	2.5	3.2	3.5
Honduras	4.3	6.2	4.2	-2.4	3.7	3.8	4.1	2.8	3.1	3.5	3.6	4.0
Jamaica	1.0	1.4	-0.8	-3.4	-1.5	1.4	-0.5	0.2	0.4	1.1	2.1	2.7
Mexico	3.3	3.1	1.4	-4.7	5.1	4.0	4.0	1.4	2.1	2.3	2.8	3.3
Nicaragua	3.9	5.3	2.9	-2.8	3.2	6.2	5.1	4.5	4.7	4.0	4.2	4.0
Panama	5.0	12.1	10.1	3.9	7.5	10.9	10.8	8.4	6.2	6.0	6.3	6.0
Paraguay	1.5	5.4	6.4	-4.0	13.1	4.3	-1.2	14.2	4.4	3.0	3.8	4.1
Peru	3.9	8.5	9.1	1.0	8.5	6.5	6.0	5.8	2.4	2.4	3.3	4.0
St. Kitts and Nevis	3.7	4.8	3.4	-3.8	-3.8	-1.9	-0.9	6.2	6.1	5.0	3.5	2.5
St. Lucia	2.4	0.6	2.8	-0.5	-1.7	0.7	-1.1	0.1	0.5	1.8	1.4	2.2
St. Vincent and the Grenadines	4.1	3.0	-0.5	-2.0	-2.3	0.2	1.3	2.3	-0.2	2.1	2.5	3.0
Suriname	4.1	5.1	4.1	3.0	5.1	5.3	3.1	2.8	1.8	1.5	0.5	3.0
Trinidad and Tobago	8.5	4.8	3.4	-4.4	-0.1	0.0	1.4	1.7	0.8	1.0	1.4	1.7
Uruguay	1.1	6.5	7.2	4.2	7.8	5.2	3.3	5.1	3.5	2.5	2.2	3.1
Venezuela	2.6	8.8	5.3	-3.2	-1.5	4.2	5.6	1.3	-4.0	-10.0	-6.0	0.0
Middle East, North Africa, Afghanistan, and Pakistan	4.8	6.3	5.2	2.2	4.9	4.5	5.0	2.3	2.7	2.5	3.9	4.5
Afghanistan	...	13.3	3.9	20.6	8.4	6.5	14.0	3.9	1.3	2.0	3.0	6.0
Algeria	4.1	3.4	2.4	1.6	3.6	2.8	2.6	2.8	3.8	3.0	3.9	3.5
Bahrain	5.2	8.3	6.2	2.5	4.3	2.1	3.6	5.3	4.5	3.4	3.2	3.3
Djibouti	2.2	5.1	5.8	5.0	3.5	4.5	4.8	5.0	6.0	6.5	7.0	6.0
Egypt	5.0	7.1	7.2	4.7	5.1	1.8	2.2	2.1	2.2	4.2	4.3	5.0
Iran ⁶	4.4	9.1	0.9	2.3	6.6	3.7	-6.6	-1.9	4.3	0.8	4.4	4.4
Iraq	...	1.9	8.2	3.4	6.4	7.5	13.9	6.6	-2.1	0.0	7.1	7.1
Jordan	5.4	8.2	7.2	5.5	2.3	2.6	2.7	2.8	3.1	2.9	3.7	4.5
Kuwait	5.7	6.0	2.5	-7.1	-2.4	10.6	7.7	0.8	0.1	1.2	2.5	2.9
Lebanon	3.2	9.4	9.1	10.3	8.0	0.9	2.8	2.5	2.0	2.0	2.5	4.0
Libya	3.5	6.4	2.7	-0.8	5.0	-62.1	104.5	-13.6	-24.0	-6.1	2.0	13.5
Mauritania	4.7	2.8	1.1	-1.0	4.8	4.4	6.0	5.5	6.9	4.1	6.4	4.0
Morocco	4.0	3.5	5.9	4.2	3.8	5.2	3.0	4.7	2.4	4.9	3.7	5.4
Oman	2.5	4.5	8.2	6.1	4.8	4.1	5.8	4.7	2.9	4.4	2.8	1.0
Pakistan	4.5	5.5	5.0	0.4	2.6	3.6	3.8	3.7	4.0	4.2	4.5	5.2
Qatar	11.8	18.0	17.7	12.0	19.6	13.4	4.9	4.6	4.0	4.7	4.9	2.8
Saudi Arabia	3.9	6.0	8.4	1.8	4.8	10.0	5.4	2.7	3.5	3.4	2.2	3.2
Sudan ⁷	15.8	8.5	3.0	4.7	3.0	-1.3	-3.4	3.9	3.6	3.5	4.0	5.8
Syria ⁸	2.9	5.7	4.5	5.9	3.4	...	...	...	...	...	...	...
Tunisia	4.9	6.3	4.5	3.1	2.6	-1.9	3.7	2.3	2.3	1.0	3.0	4.7
United Arab Emirates	6.2	3.2	3.2	-5.2	1.6	4.9	7.2	4.3	4.6	3.0	3.1	3.8
Yemen	4.5	3.3	3.6	3.9	7.7	-12.7	2.4	4.8	-0.2	-28.1	11.6	4.7

(continued)

	Average									Projections		
	1997–2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2020
Sub-Saharan Africa	5.0	7.6	6.0	4.1	6.6	5.0	4.3	5.2	5.0	3.8	4.3	5.1
Angola	8.8	22.6	13.8	2.4	3.4	3.9	5.2	6.8	4.8	3.5	3.5	5.2
Benin	4.4	4.6	5.0	2.7	2.6	3.3	5.4	5.6	5.4	5.5	5.3	6.0
Botswana	4.7	8.3	6.2	-7.7	8.6	6.0	4.8	9.3	4.4	2.6	3.2	4.4
Burkina Faso	6.1	4.1	5.8	3.0	8.4	6.6	6.5	6.6	4.0	5.0	6.0	6.6
Burundi	2.8	3.4	4.9	3.8	5.1	4.2	4.0	4.5	4.7	-7.2	5.2	5.2
Cabo Verde	7.4	9.2	6.7	-1.3	1.5	4.0	1.1	1.0	1.8	3.5	3.7	4.2
Cameroon	4.0	3.3	2.9	1.9	3.3	4.1	4.6	5.6	5.7	5.3	5.4	5.5
Central African Republic	1.6	4.6	2.1	1.7	3.0	3.3	4.1	-36.0	1.0	5.5	5.7	4.0
Chad	8.4	3.3	3.1	4.2	13.5	0.1	8.9	5.7	6.9	6.9	4.2	2.8
Comoros	2.4	0.5	1.0	1.8	2.1	2.2	3.0	3.5	2.0	1.0	2.2	4.0
Democratic Republic of the Congo	-0.1	6.3	6.2	2.9	7.1	6.9	7.1	8.5	9.2	8.4	7.3	5.2
Republic of Congo	3.4	-1.6	5.6	7.5	8.7	3.4	3.8	3.3	6.8	1.0	6.5	0.4
Côte d'Ivoire	1.1	1.8	2.5	3.3	2.0	-4.4	10.7	8.7	7.9	8.2	7.6	6.8
Equatorial Guinea	37.8	12.3	9.9	-4.5	-3.8	1.9	5.8	-6.5	-0.3	-10.2	-0.8	-1.8
Eritrea	1.5	1.4	-9.8	3.9	2.2	8.7	7.0	1.3	1.7	0.2	2.2	3.8
Ethiopia	5.6	11.8	11.2	10.0	10.6	11.4	8.7	9.8	10.3	8.7	8.1	7.5
Gabon	0.2	6.3	1.7	-2.3	6.3	7.1	5.3	5.6	4.3	3.5	4.9	5.5
The Gambia	3.6	3.6	5.7	6.4	6.5	-4.3	5.6	4.8	-0.2	4.7	5.5	5.9
Ghana	5.1	4.5	9.3	5.8	7.9	14.0	8.0	7.3	4.0	3.5	5.7	3.6
Guinea	3.3	1.8	4.9	-0.3	1.9	3.9	3.8	2.3	1.1	0.0	4.9	7.5
Guinea-Bissau	0.9	3.2	3.2	3.3	4.4	9.4	-1.8	0.8	2.5	4.7	4.8	5.0
Kenya	2.9	6.9	0.2	3.3	8.4	6.1	4.6	5.7	5.3	6.5	6.8	6.9
Lesotho	3.0	5.0	5.1	4.5	6.9	4.5	5.3	3.6	3.4	2.6	2.9	3.6
Liberia	...	12.7	6.0	5.1	6.1	7.4	8.2	8.7	0.7	0.9	5.6	7.6
Madagascar	3.4	6.4	7.2	-4.7	0.3	1.5	3.0	2.3	3.3	3.4	4.6	5.0
Malawi	2.8	9.6	7.6	8.3	6.9	4.9	1.9	5.2	5.7	4.0	5.0	6.0
Mali	4.9	4.3	5.0	4.5	5.8	2.7	0.0	1.7	7.2	5.0	5.0	4.5
Mauritius	4.3	5.9	5.5	3.0	4.1	3.9	3.2	3.2	3.6	3.2	3.8	3.6
Mozambique	8.5	7.4	5.8	6.5	7.1	7.4	7.1	7.4	7.4	7.0	8.2	17.6
Namibia	4.2	3.6	2.6	0.3	6.0	5.1	5.1	5.1	4.5	4.8	5.0	4.4
Niger	4.4	3.2	9.6	-0.7	8.4	2.2	11.8	4.6	6.9	4.3	5.4	9.0
Nigeria	7.2	9.1	8.0	9.0	10.0	4.9	4.3	5.4	6.3	4.0	4.3	5.1
Rwanda	8.4	7.6	11.2	6.2	6.3	7.5	8.8	4.7	6.9	6.5	7.0	7.5
São Tomé and Príncipe	3.8	0.6	8.1	4.0	4.5	4.8	4.5	4.0	4.5	5.0	5.2	6.0
Senegal	4.4	4.9	3.7	2.4	4.2	1.8	4.4	3.6	4.7	5.1	5.9	7.3
Seychelles	2.8	10.4	-2.1	-1.1	5.9	7.9	6.6	6.0	3.3	3.5	3.7	3.4
Sierra Leone	9.4	8.1	5.4	3.2	5.3	6.0	15.2	20.1	7.1	-23.9	-0.7	6.9
South Africa	3.4	5.4	3.2	-1.5	3.0	3.2	2.2	2.2	1.5	1.4	1.3	2.6
South Sudan	...	...	...	...	...	...	-52.4	29.3	2.9	-5.3	0.7	7.4
Swaziland	3.4	4.0	4.3	1.9	1.4	1.2	3.0	2.9	2.5	1.9	0.7	1.4
Tanzania	5.5	8.5	5.6	5.4	6.4	7.9	5.1	7.3	7.0	6.9	7.0	6.9
Togo	1.3	2.1	2.4	3.5	4.1	4.8	5.9	5.4	5.0	5.4	5.6	5.5
Uganda	6.8	8.1	10.4	8.1	7.7	6.8	2.6	3.9	4.8	5.2	5.5	6.4
Zambia	5.1	8.4	7.8	9.2	10.3	6.4	6.8	6.7	5.6	4.3	4.0	6.8
Zimbabwe ⁹	...	-3.4	-16.6	7.5	11.4	11.9	10.6	4.5	3.3	1.4	2.4	3.4

¹Data 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.

²Georgia, Turkmenistan, and Ukraine, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.

³Data are based on the 2008 System of National Accounts. The revised national accounts data are available beginning in 2000 and exclude Crimea and Sevastopol from 2010 onward.

⁴In this table only, the data for Timor-Leste are based on non-oil GDP.

⁵The 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 3, 2015, the Executive Board recognized the ongoing discussions with the Argentine authorities and their material progress in remedying the inaccurate provision of data since 2013, but found that some specified actions called for by the end of February 2015 had not yet been completely implemented. The Executive Board will review this issue again by July 15, 2016, and in line with the procedures set forth in the IMF legal framework.

⁶For Iran, data and forecasts are based on GDP at market prices. Corresponding data used by the IMF staff for GDP growth at factor prices are 3.0 percent, -1.9 percent, and -6.8 percent for 2014/15, 2013/14, and 2012/13, respectively.

⁷Data for 2011 exclude South Sudan after July 9. Data for 2012 and onward pertain to the current Sudan.

⁸Data for Syria are excluded for 2011 onward because of the ongoing conflict and related lack of data.

⁹The 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.

(Source: IMF, 2015f, p. 172-174)

Table A. 7: Advanced Economies: Consumer Prices
(Annual percent change)¹

	Average										Projections			End of Period ²		
	1997–2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2020	2014	Projections		
														2015	2016	
Advanced Economies	2.0	2.2	3.4	0.2	1.5	2.7	2.0	1.4	1.4	0.3	1.2	2.1	0.7	0.8	1.4	
United States	2.5	2.9	3.8	-0.3	1.6	3.1	2.1	1.5	1.6	0.1	1.1	2.4	0.6	0.9	1.4	
Euro Area ^{3,4}	2.0	2.2	3.3	0.3	1.6	2.7	2.5	1.3	0.4	0.2	1.0	1.7	-0.2	0.7	1.1	
Germany	1.4	2.3	2.7	0.2	1.2	2.5	2.1	1.6	0.8	0.2	1.2	1.9	0.2	0.2	1.2	
France	1.6	1.6	3.2	0.1	1.7	2.3	2.2	1.0	0.6	0.1	1.0	1.7	0.0	0.1	1.0	
Italy	2.3	2.0	3.5	0.8	1.6	2.9	3.3	1.3	0.2	0.2	0.7	1.3	-0.1	1.9	0.8	
Spain	2.9	2.8	4.1	-0.3	1.8	3.2	2.4	1.4	-0.2	-0.3	0.9	1.5	-1.0	0.7	0.9	
Netherlands	2.4	1.6	2.2	1.0	0.9	2.5	2.8	2.6	0.3	1.0	1.3	1.9	-0.1	1.2	1.4	
Belgium	1.8	1.8	4.5	0.0	2.3	3.4	2.6	1.2	0.5	0.7	1.1	1.7	-0.4	1.3	0.9	
Austria	1.5	2.2	3.2	0.4	1.7	3.6	2.6	2.1	1.5	1.0	1.7	2.0	0.8	1.2	1.8	
Greece	3.6	2.9	4.2	1.2	4.7	3.3	1.5	-1.2	-1.5	-0.4	0.0	1.4	-2.6	1.5	0.6	
Portugal	2.8	2.4	2.7	-0.9	1.4	3.6	2.8	0.4	-0.2	0.6	1.3	1.7	-0.3	0.0	3.4	
Ireland	3.1	2.9	3.1	-1.7	-1.6	1.2	1.9	0.5	0.3	0.2	1.5	2.0	0.2	0.2	0.8	
Finland	1.5	1.6	3.9	1.6	1.7	3.3	3.2	2.2	1.2	0.0	1.3	2.0	0.6	0.4	1.3	
Slovak Republic	6.9	1.9	3.9	0.9	0.7	4.1	3.7	1.5	-0.1	-0.1	1.4	2.0	-0.1	0.5	1.6	
Lithuania	2.6	5.8	11.1	4.2	1.2	4.1	3.2	1.2	0.2	-0.4	1.6	2.0	-0.2	0.2	1.5	
Slovenia	6.1	3.6	5.7	0.9	1.8	1.8	2.6	1.8	0.2	-0.4	0.7	1.7	0.2	-0.2	1.9	
Luxembourg	2.4	2.7	4.1	0.0	2.8	3.7	2.9	1.7	0.7	0.3	1.6	2.4	-0.9	1.3	2.2	
Latvia	4.4	10.1	15.2	3.2	-1.2	4.2	2.3	0.0	0.7	0.4	1.8	2.0	0.3	1.8	1.7	
Estonia	4.9	6.7	10.6	0.2	2.7	5.1	4.2	3.2	0.5	0.2	1.6	2.2	0.0	0.4	2.1	
Cyprus ³	2.7	2.2	4.4	0.2	2.6	3.5	3.1	0.4	-0.3	-1.0	0.9	1.9	-1.0	-1.0	0.9	
Malta	2.8	0.7	4.7	1.8	2.0	2.5	3.2	1.0	0.8	1.0	1.4	2.1	0.4	1.0	1.8	
Japan	-0.1	0.1	1.4	-1.3	-0.7	-0.3	0.0	0.4	2.7	0.7	0.4	1.5	2.6	0.1	0.6	
United Kingdom ³	1.5	2.3	3.6	2.2	3.3	4.5	2.8	2.6	1.5	0.1	1.5	2.0	0.9	0.3	1.7	
Korea	3.4	2.5	4.7	2.8	2.9	4.0	2.2	1.3	1.3	0.7	1.8	3.0	0.8	1.3	2.5	
Canada	2.1	2.1	2.4	0.3	1.8	2.9	1.5	1.0	1.9	1.0	1.6	2.1	1.9	1.1	2.0	
Australia	2.6	2.3	4.4	1.7	2.9	3.4	1.7	2.4	2.5	1.8	2.6	2.5	1.6	2.4	2.5	
Taiwan Province of China	0.8	1.8	3.5	-0.9	1.0	1.4	1.9	0.8	1.2	-0.1	1.0	2.0	0.6	0.6	1.1	
Switzerland	0.8	0.7	2.4	-0.5	0.7	0.2	-0.7	-0.2	0.0	-1.1	-0.2	1.0	-0.3	-1.2	0.3	
Sweden	1.5	1.7	3.3	1.9	1.9	1.4	0.9	0.4	0.2	0.5	1.1	2.0	0.3	0.4	1.5	
Singapore	0.7	2.1	6.6	0.6	2.8	5.2	4.6	2.4	1.0	0.0	1.8	1.8	0.0	0.7	2.6	
Hong Kong SAR	-0.4	2.0	4.3	0.6	2.3	5.3	4.1	4.3	4.4	2.9	3.0	3.5	4.8	2.9	3.0	
Norway	2.1	0.7	3.8	2.2	2.4	1.3	0.7	2.1	2.0	2.3	2.2	2.5	2.1	2.3	2.3	
Czech Republic	3.9	2.9	6.3	1.0	1.5	1.9	3.3	1.4	0.4	0.4	1.5	2.0	0.1	0.5	1.9	
Israel	3.1	0.5	4.6	3.3	2.7	3.5	1.7	1.5	0.5	-0.1	2.0	2.0	-0.2	0.7	2.2	
Denmark	2.1	1.7	3.4	1.3	2.3	2.8	2.4	0.8	0.6	0.5	1.8	2.0	0.3	0.5	1.8	
New Zealand	2.1	2.4	4.0	2.1	2.3	4.0	1.1	1.1	1.2	0.2	1.5	2.0	0.8	0.4	1.8	
Iceland	3.9	5.1	12.7	12.0	5.4	4.0	5.2	3.9	2.0	2.1	4.5	2.5	0.8	3.6	4.8	
San Marino	...	2.5	4.1	2.4	2.6	2.0	2.8	1.3	1.1	0.4	0.9	1.4	1.1	0.4	0.9	
<i>Memorandum</i>																
Major Advanced Economies	1.8	2.2	3.2	-0.1	1.4	2.6	1.9	1.3	1.5	0.2	1.1	2.1	0.8	0.7	1.3	

¹Movements in consumer prices are shown as annual averages.

²Monthly year-over-year changes and, for several countries, on a quarterly basis.

³Based on Eurostat's harmonized index of consumer prices.

⁴Data for Lithuania are included in the euro area aggregates but were excluded in the April 2015 *World Economic Outlook*.

(Source: IMF, 2015f, p. 176)

Table A. 8: Emerging Market and Developing Economies: Consumer Prices
(Annual percent change)¹

	Average										Projections			End of Period ²		
	1997–2006										2015	2016	2020	2014	Projections	
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2020	2014	2015	2016		
Commonwealth of Independent States^{3,4}	20.5	9.7	15.5	11.1	7.1	9.8	6.2	6.4	8.1	15.9	8.9	4.8	11.4	14.5	8.5	
Russia	21.8	9.0	14.1	11.7	6.9	8.4	5.1	6.8	7.8	15.8	8.6	4.0	11.4	13.5	8.5	
Excluding Russia	16.8	11.7	19.3	9.7	7.8	13.2	9.1	5.6	8.7	16.3	9.6	6.5	11.5	16.8	8.4	
Armenia	4.1	4.6	9.0	3.5	7.3	7.7	2.5	5.8	3.0	4.3	3.4	4.0	4.6	3.4	4.0	
Azerbaijan	2.6	16.6	20.8	1.6	5.7	7.9	1.0	2.4	1.4	5.0	4.2	4.5	-0.1	7.9	0.5	
Belarus	61.8	8.4	14.8	13.0	7.7	53.2	59.2	18.3	18.1	15.1	14.2	11.4	16.2	16.9	12.3	
Georgia	7.1	9.2	10.0	1.7	7.1	8.5	-0.9	-0.5	3.1	3.7	5.0	4.0	2.0	5.0	5.0	
Kazakhstan	9.0	10.8	17.1	7.3	7.1	8.3	5.1	5.8	6.7	6.3	8.6	6.0	7.4	9.0	8.0	
Kyrgyz Republic	11.0	10.2	24.5	6.8	7.8	16.6	2.8	6.6	7.5	8.3	9.0	5.5	10.5	10.1	7.8	
Moldova	14.9	12.4	12.7	0.0	7.4	7.6	4.6	4.6	5.1	8.4	7.4	6.5	4.7	9.0	7.3	
Tajikistan	26.4	13.2	20.4	6.4	6.5	12.4	5.8	5.0	6.1	10.8	8.2	6.0	7.4	11.7	6.5	
Turkmenistan	16.6	6.3	14.5	-2.7	4.4	5.3	5.3	6.8	6.0	7.0	6.0	4.7	4.2	4.7	7.3	
Ukraine ⁵	12.4	12.8	25.2	15.9	9.4	8.0	0.6	-0.3	12.1	50.0	14.2	5.0	24.9	45.8	12.0	
Uzbekistan	24.0	12.3	12.7	14.1	9.4	12.8	12.1	11.2	8.4	9.7	9.2	10.0	9.8	9.1	9.5	
Emerging and Developing Asia	4.2	5.4	7.6	2.8	5.1	6.5	4.7	4.8	3.5	3.0	3.2	3.7	3.1	3.0	3.2	
Bangladesh	5.3	9.1	8.9	4.9	9.4	11.5	6.2	7.5	7.0	6.4	6.6	6.2	6.1	6.4	6.8	
Bhutan	5.3	5.2	6.3	7.1	4.8	8.6	10.1	8.6	9.6	7.2	6.1	5.6	8.9	7.4	7.6	
Brunei Darussalam	0.3	1.0	2.1	1.0	0.2	0.1	0.1	0.4	-0.2	0.0	0.1	0.1	-0.2	0.0	0.1	
Cambodia	4.1	7.7	25.0	-0.7	4.0	5.5	2.9	3.0	3.9	1.1	1.8	3.2	1.0	1.9	2.8	
China	0.9	4.8	5.9	-0.7	3.3	5.4	2.6	2.6	2.0	1.5	1.8	3.0	1.5	1.8	1.8	
Fiji	2.9	4.8	7.7	3.7	3.7	7.3	3.4	2.9	0.5	2.8	2.8	2.8	0.1	2.8	2.8	
India	5.4	5.9	9.2	10.6	9.5	9.4	10.2	10.0	5.9	5.4	5.5	4.9	5.3	5.4	5.6	
Indonesia	14.0	6.7	9.8	5.0	5.1	5.3	4.0	6.4	6.4	6.8	5.4	4.1	8.4	4.6	4.7	
Kiribati	1.7	3.6	13.7	9.8	-3.9	1.5	-3.0	-1.5	2.1	1.4	0.3	2.1	3.1	1.4	0.3	
Lao P.D.R.	25.6	4.5	7.6	0.0	6.0	7.6	4.3	6.4	5.5	5.3	1.5	3.3	5.0	5.5	10.1	
Malaysia	2.5	2.0	5.4	0.6	1.7	3.2	1.7	2.1	3.1	2.4	3.8	3.0	2.7	2.4	3.8	
Maldives	1.9	6.8	12.0	4.5	6.1	11.3	10.9	4.0	2.5	1.0	2.5	4.1	1.2	1.3	3.0	
Marshall Islands	...	2.6	14.7	0.5	1.8	5.4	4.3	1.9	1.1	-0.6	1.0	2.3	0.5	-0.6	1.0	
Micronesia	1.9	3.6	6.6	7.7	3.7	4.3	6.3	2.1	0.9	-1.0	1.9	2.0	0.9	-1.0	1.9	
Mongolia	9.9	8.2	26.8	6.3	10.2	7.7	15.0	8.6	12.9	7.6	7.5	6.5	10.7	7.1	6.8	
Myanmar	...	30.9	11.5	2.2	8.2	2.8	2.8	5.7	5.9	12.2	11.8	6.6	7.4	13.3	10.2	
Nepal	5.7	6.2	6.7	12.6	9.5	9.6	8.3	9.9	9.0	7.2	8.0	6.1	8.1	7.6	8.5	
Palau	...	3.0	10.0	4.7	1.1	2.6	5.4	2.8	4.0	1.8	2.0	2.0	3.8	1.8	2.0	
Papua New Guinea	8.9	0.9	10.8	6.9	5.1	4.4	4.5	5.0	5.3	6.0	5.4	5.0	6.3	6.0	5.0	
Philippines	5.5	2.9	8.2	4.2	3.8	4.7	3.2	2.9	4.2	1.9	3.4	3.5	2.7	3.1	2.7	
Samoa	4.6	5.6	11.6	6.3	0.8	5.2	2.0	0.6	-0.4	1.3	2.2	3.0	0.2	3.0	2.1	
Solomon Islands	8.8	7.7	17.3	7.1	0.9	7.4	5.9	5.4	5.2	3.8	3.3	4.5	4.2	4.4	3.8	
Sri Lanka	9.2	15.8	22.4	3.5	6.2	6.7	7.5	6.9	3.3	1.7	3.4	5.0	2.1	3.2	3.6	
Thailand	3.1	2.2	5.5	-0.9	3.3	3.8	3.0	2.2	1.9	-0.9	1.5	2.2	0.6	-0.3	2.3	
Timor-Leste	...	8.6	7.4	-0.2	5.2	13.2	10.9	9.5	0.7	1.1	2.4	3.3	0.3	1.9	2.9	
Tonga	7.0	7.4	7.5	3.5	3.9	4.6	2.0	1.5	1.4	0.9	1.6	3.3	1.2	1.3	1.9	
Tuvalu	...	2.3	10.4	-0.3	-1.9	0.5	1.4	2.0	3.3	4.7	3.5	2.6	3.3	4.4	3.3	
Vanuatu	2.4	3.8	4.2	5.2	2.7	0.7	1.4	1.3	1.0	3.1	3.0	3.0	1.1	3.2	3.0	
Vietnam	4.4	8.3	23.1	6.7	9.2	18.7	9.1	6.6	4.1	2.2	3.0	4.9	1.8	2.5	3.6	
Emerging and Developing Europe	24.2	6.0	8.0	4.8	5.6	5.4	6.0	4.3	3.8	2.9	3.5	4.2	3.1	3.6	3.7	
Albania	6.8	2.9	3.4	2.3	3.6	3.4	2.0	1.9	1.6	2.2	2.5	3.0	0.7	2.3	2.7	
Bosnia and Herzegovina	2.8	1.5	7.4	-0.4	2.1	3.7	2.0	-0.1	-0.9	0.5	1.1	2.1	-0.5	1.0	1.6	
Bulgaria	36.2	7.6	12.0	2.5	3.0	3.4	2.4	0.4	-1.6	-0.8	0.6	2.1	-2.0	0.3	0.9	
Croatia	3.5	2.9	6.1	2.4	1.0	2.3	3.4	2.2	-0.2	-0.4	1.1	2.2	-0.5	0.4	1.3	
Hungary	8.5	7.9	6.1	4.2	4.9	3.9	5.7	1.7	-0.2	0.3	2.3	3.0	-0.9	2.0	2.4	
Kosovo	...	4.4	9.4	-2.4	3.5	7.3	2.5	1.8	0.4	-0.5	0.5	1.8	-0.4	0.0	1.5	
FYR Macedonia	1.8	2.8	7.2	-0.6	1.7	3.9	3.3	2.8	-0.1	0.1	1.3	2.0	-0.4	0.8	1.7	
Montenegro	...	3.4	9.0	3.6	0.7	3.1	3.6	2.2	-0.7	1.7	1.4	1.7	-0.3	1.8	1.5	
Poland	5.8	2.5	4.2	3.4	2.6	4.3	3.7	0.9	0.0	-0.8	1.0	2.5	-1.0	0.1	1.6	
Romania	35.7	4.8	7.8	5.6	6.1	5.8	3.3	4.0	1.1	-0.4	-0.2	2.5	0.8	-0.5	1.1	
Serbia	26.7	6.0	12.4	8.1	6.1	11.1	7.3	7.7	2.1	1.6	3.4	4.0	1.8	2.5	4.1	
Turkey	41.3	8.8	10.4	6.3	8.6	6.5	8.9	7.5	8.9	7.4	7.0	6.5	8.2	8.0	6.5	

(continued)

	Average									Projections			End of Period ²		
	1997–2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2020	Projections		
													2014	2015	2016
Latin America and the Caribbean⁶	8.9	5.2	8.0	6.1	5.7	6.5	5.7	6.7	7.9	11.2	10.7	8.0	8.2	12.0	10.5
Antigua and Barbuda	1.7	1.4	5.3	-0.6	3.4	3.5	3.4	1.1	1.1	0.8	1.2	2.5	1.3	0.5	1.6
Argentina ⁶	...	8.8	8.6	6.3	10.5	9.8	10.0	10.6	...	16.8	25.6	21.1	23.9	19.3	26.4
The Bahamas	1.7	2.4	4.4	1.7	1.6	3.1	1.9	0.4	1.2	1.7	1.3	2.0	0.2	1.6	1.3
Barbados	2.8	4.0	8.1	3.7	5.7	9.4	4.5	1.8	1.9	1.2	0.8	2.4	2.3	0.6	1.1
Belize	1.6	2.3	6.4	-1.1	0.9	1.7	1.2	0.5	1.2	0.1	1.2	2.0	-0.2	0.7	1.7
Bolivia	3.9	6.7	14.0	3.3	2.5	9.9	4.5	5.7	5.8	4.3	4.9	5.0	5.2	4.2	5.0
Brazil	6.9	3.6	5.7	4.9	5.0	6.6	5.4	6.2	6.3	8.9	6.3	4.6	6.4	9.3	5.5
Chile	3.5	4.4	8.7	1.5	1.4	3.3	3.0	1.9	4.4	4.4	3.7	3.0	4.6	4.2	3.5
Colombia	9.3	5.5	7.0	4.2	2.3	3.4	3.2	2.0	2.9	4.4	3.5	3.0	3.7	4.2	3.3
Costa Rica	11.3	9.4	13.4	7.8	5.7	4.9	4.5	5.2	4.5	2.3	3.1	4.0	5.1	2.1	4.0
Dominica	1.5	3.2	6.4	0.0	2.8	1.1	1.4	0.0	0.8	-0.2	0.6	2.1	0.5	0.8	0.3
Dominican Republic	12.4	6.1	10.6	1.4	6.3	8.5	3.7	4.8	3.0	1.1	3.5	4.0	1.6	2.0	3.5
Ecuador	25.4	2.3	8.4	5.2	3.6	4.5	5.1	2.7	3.6	4.1	2.9	1.5	3.7	3.7	2.5
El Salvador	3.1	4.6	7.3	0.5	1.2	5.1	1.7	0.8	1.1	-1.2	1.2	2.0	0.5	-1.0	2.0
Grenada	2.0	3.9	8.0	-0.3	3.4	3.0	2.4	0.0	-0.8	-0.7	2.0	1.9	-0.6	0.3	2.2
Guatemala	7.1	6.8	11.4	1.9	3.9	6.2	3.8	4.3	3.4	2.9	2.8	4.0	2.9	2.8	3.3
Guyana	5.4	12.2	8.1	3.0	4.3	4.4	2.4	2.2	1.0	1.1	2.3	3.9	1.2	1.0	3.5
Haiti	15.9	9.0	14.4	3.4	4.1	7.4	6.8	6.8	3.9	7.4	8.9	5.0	5.3	10.3	5.9
Honduras	10.3	6.9	11.4	5.5	4.7	6.8	5.2	5.2	6.1	3.8	5.4	5.4	5.8	4.7	5.2
Jamaica	9.3	9.2	22.0	9.6	12.6	7.5	6.9	9.4	6.7	5.0	6.5	6.0	4.0	6.1	6.8
Mexico	8.9	4.0	5.1	5.3	4.2	3.4	4.1	3.8	4.0	2.8	3.0	3.0	4.1	2.6	3.0
Nicaragua	8.8	11.1	19.8	3.7	5.5	8.1	7.2	7.1	6.0	5.4	7.0	7.0	6.5	5.7	7.0
Panama	1.2	4.2	8.8	2.4	3.5	5.9	5.7	4.0	2.6	1.0	2.0	2.0	1.0	3.0	2.0
Paraguay	8.7	8.1	10.2	2.6	4.7	8.3	3.7	2.7	5.0	3.3	4.2	4.5	4.2	3.8	4.5
Peru	3.4	1.8	5.8	2.9	1.5	3.4	3.7	2.8	3.2	3.2	2.8	2.0	3.2	3.3	2.5
St. Kitts and Nevis	3.8	4.5	5.3	2.1	0.7	7.1	1.4	1.0	0.8	-0.8	-0.3	1.7	0.6	-2.2	1.7
St. Lucia	2.5	2.8	5.5	-0.2	3.3	2.8	4.2	1.5	3.5	0.6	2.7	1.5	3.7	0.5	3.7
St. Vincent and the Grenadines	1.5	7.0	10.1	0.4	0.8	3.2	2.6	0.8	0.2	-1.0	1.8	2.0	0.1	0.5	1.6
Suriname	20.5	6.6	14.9	-0.4	6.8	17.7	5.0	1.9	3.4	3.7	4.3	3.3	3.9	5.2	3.2
Trinidad and Tobago	4.4	7.9	12.0	7.6	10.5	5.1	9.3	5.2	7.0	8.1	6.8	5.4	8.5	7.8	5.9
Uruguay	9.8	8.1	7.9	7.1	6.7	8.1	8.1	8.6	8.9	8.4	8.1	6.4	8.3	9.0	7.9
Venezuela	23.8	18.7	30.4	27.1	28.2	26.1	21.1	40.6	62.2	159.1	204.1	162.5	68.5	190.0	210.0
Middle East, North Africa, Afghanistan, and Pakistan	5.6	10.3	11.8	7.1	6.5	9.2	9.8	9.1	6.7	6.2	5.4	4.1	6.5	5.7	5.2
Afghanistan	...	8.7	26.4	-6.8	2.2	11.8	6.4	7.4	4.7	-1.9	2.8	5.0	1.5	-1.2	1.9
Algeria	3.1	3.7	4.9	5.7	3.9	4.5	8.9	3.3	2.9	4.2	4.1	4.0	5.3	2.0	4.1
Bahrain	0.9	3.3	3.5	2.8	2.0	-0.4	2.8	3.3	2.7	2.0	2.1	2.5	2.5	1.6	2.6
Djibouti	2.0	5.0	12.0	1.7	4.0	5.1	3.7	2.4	2.9	3.0	3.5	3.0	2.8	3.0	3.0
Egypt	4.7	11.0	11.7	16.2	11.7	11.1	8.6	6.9	10.1	11.0	8.8	7.0	8.2	11.4	10.4
Iran	14.8	18.4	25.3	10.8	12.4	21.5	30.5	34.7	15.5	15.1	11.5	5.0	16.2	14.0	9.0
Iraq	...	30.8	2.7	-2.2	2.4	5.6	6.1	1.9	2.2	1.9	3.0	3.0	1.6	3.0	3.0
Jordan	2.6	4.7	14.0	-0.7	4.8	4.2	4.5	4.8	2.9	0.2	3.1	2.0	1.7	1.9	2.5
Kuwait	1.8	5.5	6.3	4.6	4.5	4.9	3.2	2.7	2.9	3.3	3.3	3.6	2.9	3.3	3.3
Lebanon	2.1	4.1	10.8	1.2	4.0	5.0	6.6	4.8	1.9	0.1	1.5	3.0	-0.7	1.0	2.0
Libya	-1.0	6.2	10.4	2.4	2.5	15.9	6.1	2.6	2.8	8.0	9.2	1.8	3.7	11.7	7.2
Mauritania	6.2	7.3	7.5	2.1	6.3	5.7	4.9	4.1	3.5	3.6	4.2	5.0	4.7	3.6	4.2
Morocco	1.7	2.0	3.9	1.0	1.0	0.9	1.3	1.9	0.4	1.5	2.0	2.0	1.6	1.6	2.0
Oman	0.4	5.9	12.6	3.5	3.3	4.0	2.9	1.2	1.0	0.4	2.0	2.8	1.0	0.4	2.0
Pakistan	6.0	7.8	12.0	18.1	10.1	13.7	11.0	7.4	8.6	4.5	4.7	5.0	8.2	3.2	6.0
Qatar	4.0	13.6	15.2	-4.9	-2.4	1.9	1.9	3.1	3.0	1.6	2.3	2.3	2.9	1.6	2.3
Saudi Arabia	-0.2	5.0	6.1	4.1	3.8	3.7	2.9	3.5	2.7	2.1	2.3	2.9	2.4	2.1	2.3
Sudan ⁷	14.6	14.8	14.3	11.3	13.0	18.1	35.5	36.5	36.9	19.8	12.7	5.2	25.7	15.5	10.0
Syria ⁸	2.3	4.7	15.2	2.8	4.4	...	...	...	...	...	...	...	...	...	...
Tunisia	2.5	3.0	4.3	3.7	3.3	3.5	5.1	5.8	4.9	5.0	4.0	3.8	4.8	4.4	4.0
United Arab Emirates	3.8	11.1	12.3	1.6	0.9	0.9	0.7	1.1	2.3	3.7	3.0	3.4	3.0	3.3	3.0
Yemen	10.3	7.9	19.0	3.7	11.2	19.5	9.9	11.0	8.2	30.0	15.0	6.0	10.0	20.0	12.0

(continued)

	Average										Projections			End of Period ²		
	1997–2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2020	Projections			
													2014	2015	2016	
Sub-Saharan Africa	11.2	5.5	13.0	9.8	8.2	9.5	9.4	6.6	6.4	6.9	7.3	5.8	6.3	7.8	7.1	
Angola	114.5	12.2	12.5	13.7	14.5	13.5	10.3	8.8	7.3	10.3	14.2	9.4	7.5	13.9	13.0	
Benin	3.2	1.3	7.4	0.9	2.2	2.7	6.7	1.0	-1.1	0.5	2.3	2.8	-0.8	2.3	2.4	
Botswana	8.3	7.1	12.6	8.1	6.9	8.5	7.5	5.8	3.9	4.0	4.4	4.4	3.7	4.3	4.4	
Burkina Faso	2.4	-0.2	10.7	0.9	-0.6	2.8	3.8	0.5	-0.3	0.7	1.8	2.0	-0.1	1.6	1.8	
Burundi	11.0	8.4	24.4	10.6	6.5	9.6	18.2	7.9	4.4	7.4	6.2	5.0	3.7	11.8	4.4	
Cabo Verde	2.5	4.4	6.8	1.0	2.1	4.5	2.5	1.5	-0.2	1.0	2.5	2.5	-0.4	2.0	2.5	
Cameroon	2.6	1.1	5.3	3.0	1.3	2.9	2.4	2.1	1.9	2.0	2.1	2.2	2.6	2.0	2.1	
Central African Republic	1.9	0.9	9.3	3.5	1.5	1.2	5.9	6.6	11.6	5.7	4.9	3.0	8.4	9.4	2.5	
Chad	2.6	-7.4	8.3	10.1	-2.1	1.9	7.7	0.2	1.7	4.3	3.1	3.0	3.7	3.2	3.0	
Comoros	3.3	4.5	4.8	4.8	3.9	2.2	5.9	1.6	1.3	2.0	2.2	2.2	0.0	4.0	0.1	
Democratic Republic of the Congo	97.3	16.7	18.0	46.2	23.5	15.5	2.1	0.8	1.0	1.0	1.7	2.5	1.2	0.9	2.5	
Republic of Congo	3.4	2.6	6.0	4.3	5.0	1.8	5.0	4.6	0.9	0.9	1.7	2.5	0.5	1.8	2.2	
Côte d'Ivoire	3.3	1.9	6.3	1.0	1.4	4.9	1.3	2.6	0.4	1.6	1.5	2.0	0.9	2.0	1.8	
Equatorial Guinea	5.4	2.8	4.7	5.7	5.3	4.8	3.4	3.2	4.3	3.5	2.9	2.8	4.3	3.5	2.9	
Eritrea	14.7	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	12.3	
Ethiopia	4.5	17.2	44.4	8.5	8.1	33.2	24.1	8.1	7.4	10.0	9.0	8.3	7.1	12.3	8.2	
Gabon	0.8	-1.0	5.3	1.9	1.4	1.3	2.7	0.5	4.5	0.6	2.5	2.5	1.7	1.1	2.5	
The Gambia	5.9	5.4	4.5	4.6	5.0	4.8	4.6	5.2	6.2	6.5	5.3	5.0	6.9	6.0	4.7	
Ghana	19.3	10.7	16.5	13.1	6.7	7.7	7.1	11.7	15.5	15.3	10.1	7.4	17.0	12.0	8.0	
Guinea	11.6	22.9	18.4	4.7	15.5	21.4	15.2	11.9	9.7	9.0	8.7	5.0	9.0	9.4	8.0	
Guinea-Bissau	6.3	4.6	10.4	-1.6	1.1	5.1	2.1	0.8	-1.0	1.3	2.3	3.0	-0.1	2.0	2.5	
Kenya	6.6	4.3	15.1	10.6	4.3	14.0	9.4	5.7	6.9	6.3	5.9	5.0	6.0	6.3	5.4	
Lesotho	7.1	9.2	10.7	5.9	3.4	6.0	5.5	5.0	3.8	3.9	4.1	5.0	2.6	4.1	5.0	
Liberia	...	11.4	17.5	7.4	7.3	8.5	6.8	7.6	9.9	7.9	8.2	6.4	7.7	8.0	8.5	
Madagascar	9.4	10.3	9.3	9.0	9.2	9.5	5.7	5.8	6.1	7.6	7.4	5.2	6.0	8.1	7.2	
Malawi	19.6	8.0	8.7	8.4	7.4	7.6	21.3	28.3	23.8	20.1	14.0	7.4	24.2	18.7	9.1	
Mali	1.5	1.5	9.1	2.2	1.3	3.1	5.3	-0.6	0.9	2.4	3.6	2.6	1.2	3.1	2.6	
Mauritius	5.9	8.8	9.7	2.5	2.9	6.5	3.9	3.5	3.2	2.0	3.0	3.0	0.2	3.0	3.0	
Mozambique	9.5	8.2	10.3	3.3	12.7	10.4	2.1	4.2	2.3	4.0	5.6	5.6	1.1	5.5	5.6	
Namibia	7.7	6.5	9.1	9.5	4.9	5.0	6.7	5.6	5.3	4.8	6.0	5.7	4.6	5.2	5.5	
Niger	2.1	0.1	11.3	4.3	-2.8	2.9	0.5	2.3	-0.9	1.3	2.1	1.8	-0.6	2.6	1.5	
Nigeria	11.8	5.4	11.6	12.5	13.7	10.8	12.2	8.5	8.1	9.1	9.7	7.0	7.9	10.5	9.5	
Rwanda	6.2	9.1	15.4	10.3	2.3	5.7	6.3	4.2	1.8	2.1	4.2	5.0	2.1	3.5	5.0	
São Tomé and Príncipe	20.4	18.6	32.0	17.0	13.3	14.3	10.6	8.1	7.0	5.8	4.6	3.0	6.4	5.2	4.0	
Senegal	1.4	5.9	6.3	-2.2	1.2	3.4	1.4	0.7	-1.1	0.6	2.1	1.3	-0.8	3.0	1.4	
Seychelles	2.9	5.3	37.0	31.8	-2.4	2.6	7.1	4.3	1.4	4.3	2.9	3.0	0.5	4.9	3.8	
Sierra Leone	11.9	11.6	14.8	9.2	17.8	18.5	13.8	9.8	8.3	10.2	12.7	7.5	9.8	12.0	10.2	
South Africa	5.6	7.1	11.5	7.1	4.3	5.0	5.7	5.8	6.1	4.8	5.9	5.5	5.8	5.5	5.7	
South Sudan	...	...	...	...	...	...	45.1	0.0	1.7	41.1	14.4	0.5	9.9	25.0	35.0
Swaziland	6.9	8.1	12.7	7.4	4.5	6.1	8.9	5.6	5.7	5.2	5.7	5.2	6.2	6.1	5.4	
Tanzania	7.2	7.0	10.3	12.1	7.2	12.7	16.0	7.9	6.1	5.6	5.9	5.1	4.8	6.6	5.4	
Togo	2.4	0.9	8.7	3.7	1.4	3.6	2.6	1.8	0.2	1.9	2.1	2.5	1.8	2.2	2.3	
Uganda	4.7	6.1	12.0	13.1	4.0	18.7	14.0	4.8	4.6	5.7	6.5	5.0	4.9	6.4	6.6	
Zambia	21.1	10.7	12.4	13.4	8.5	8.7	6.6	7.0	7.8	7.3	7.5	5.0	7.9	8.0	7.0	
Zimbabwe ⁹	-7.2	-72.7	157.0	6.2	3.0	3.5	3.7	1.6	-0.2	-1.6	0.0	2.2	-0.8	-0.7	0.5	

¹Movements in consumer prices are shown as annual averages.

²Monthly year-over-year changes and, for several countries, on a quarterly basis.

³For 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.

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

⁵Starting in 2014 data exclude Crimea and Sevastopol.

⁶Consumer price data from December 2013 onward reflect the new national CPI (IPCNU), which differs substantially 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, the average CPI inflation for 2014 is not reported in the October 2015 *World Economic Outlook*. Following a declaration of censure by the IMF on February 1, 2013, the public release of a new national CPI by the end of March 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 3, 2015, the Executive Board recognized the ongoing discussions with the Argentine authorities and their material progress in remedying the inaccurate provision of data since 2013, but found that some specified actions called for by the end of February 2015 had not yet been completely implemented. The Executive Board will review this issue again by July 15, 2016, and in line with the procedures set forth in the IMF legal framework.

⁷Data for 2011 exclude South Sudan after July 9. Data for 2012 and onward pertain to the current Sudan.

⁸Data for Syria are excluded for 2011 onward because of the ongoing conflict and related lack of data.

⁹The 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.

(Source: IMF, 2015f, p. 177-179)

Table A. 9: Advanced Economies: General Government Gross Debt, 2006–2020
(Percent of GDP)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Australia ¹	10.0	9.7	11.7	16.8	20.5	24.2	27.9	30.9	33.9	36.0	37.3	37.6	36.6	35.4	33.9
Austria	67.0	64.8	68.5	79.7	82.3	82.1	81.5	80.8	84.4	86.7	85.6	84.1	82.7	81.2	79.8
Belgium	90.7	86.8	92.2	99.2	99.5	102.0	103.9	104.4	106.6	106.7	106.2	104.9	102.9	100.5	97.9
Canada ¹	70.4	66.7	70.8	83.0	84.6	85.3	87.9	87.7	87.9	90.4	89.4	86.7	84.3	82.1	79.9
Cyprus	59.6	53.7	44.7	53.5	56.5	66.0	79.5	102.2	107.5	106.4	98.4	93.2	87.3	82.4	77.8
Czech Republic	27.9	27.8	28.7	34.1	38.2	39.9	44.6	45.1	42.6	40.6	40.0	39.4	38.8	38.4	38.1
Denmark	31.5	27.3	33.4	40.4	42.9	46.4	45.6	45.0	45.2	47.0	48.0	48.4	48.1	47.5	46.3
Estonia	4.4	3.7	4.5	7.0	6.5	5.9	9.5	9.9	10.4	10.8	10.8	10.6	10.5	10.4	10.1
Finland	38.1	34.0	32.7	41.7	47.1	48.5	52.9	55.6	59.0	61.9	64.0	65.4	66.7	67.0	66.6
France	64.2	64.2	67.9	78.8	81.5	85.0	89.4	92.3	95.6	97.1	98.0	98.0	97.2	95.5	93.1
Germany	66.6	63.8	65.2	72.7	80.6	77.9	79.3	77.0	74.6	70.7	68.2	65.9	63.4	60.4	57.9
Greece	102.9	102.8	108.8	126.2	145.7	171.0	156.5	175.0	177.1	196.9	206.6	203.6	197.0	189.4	182.5
Hong Kong SAR ¹	1.2	1.1	0.9	0.7	0.7	0.6	0.6	0.5	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Iceland	29.3	27.3	67.6	82.9	88.3	95.1	92.7	85.3	82.5	75.3	69.5	63.5	58.4	57.0	54.9
Ireland	23.6	23.9	42.4	61.8	86.8	109.3	120.2	120.0	107.6	100.6	95.9	92.9	88.9	85.7	82.9
Israel	79.8	72.7	71.6	74.3	70.6	68.8	67.9	67.2	67.1	67.2	67.2	67.8	68.6	69.4	70.1
Italy	102.5	99.7	102.3	112.5	115.3	116.4	123.1	128.5	132.1	133.1	132.3	130.5	128.3	125.8	123.0
Japan	186.0	183.0	191.8	210.2	215.8	229.7	236.6	242.6	246.2	245.9	247.8	248.8	250.4	250.9	251.7
Korea	29.3	28.7	28.0	31.2	31.0	31.7	32.3	34.5	36.0	38.2	39.3	40.2	40.7	40.6	40.2
Latvia	9.2	7.2	16.1	32.3	39.8	37.5	36.5	35.2	37.8	37.8	37.0	36.7	35.1	33.6	32.0
Lithuania	18.0	16.7	15.4	29.0	36.3	37.3	39.8	38.8	40.9	38.8	38.5	37.9	38.0	37.8	37.1
Luxembourg	7.0	7.0	14.4	15.4	19.6	18.6	21.5	23.0	22.1	22.8	23.2	23.7	24.2	24.8	25.3
Malta	64.6	62.4	62.7	67.8	67.6	69.7	67.6	69.8	68.5	67.2	66.9	64.7	63.2	61.4	59.6
Netherlands	47.4	45.3	58.5	60.8	59.0	61.3	66.1	67.6	67.9	67.6	65.6	65.3	64.5	63.4	62.0
New Zealand	16.4	14.6	17.0	21.8	27.1	31.9	32.4	31.0	30.4	30.3	30.7	30.0	27.5	25.5	24.0
Norway	52.3	49.2	47.3	42.0	42.4	28.9	29.9	30.3	28.1	28.1	28.1	28.1	28.1	28.1	28.1
Portugal	61.6	68.4	71.7	83.6	96.2	111.1	125.8	129.7	130.2	127.8	125.0	122.6	121.0	119.9	118.9
Singapore	85.1	84.7	95.3	99.7	97.0	101.0	105.5	102.1	98.6	98.7	95.8	92.7	89.9	91.0	92.3
Slovak Republic	30.7	29.8	28.2	36.0	40.9	43.4	52.1	54.6	53.6	53.3	53.6	53.2	52.6	51.9	51.0
Slovenia	26.0	22.7	21.6	34.4	37.9	46.1	53.4	70.5	80.8	81.8	82.7	85.7	88.5	91.2	93.7
Spain	38.9	35.5	39.4	52.7	60.1	69.2	84.4	92.1	97.7	98.6	98.8	98.3	97.5	95.9	94.2
Sweden	43.0	38.1	36.7	40.2	36.8	36.2	36.6	38.7	43.8	43.9	42.6	41.3	39.7	37.9	35.8
Switzerland	59.7	53.3	48.7	47.9	47.1	47.4	48.2	47.1	46.3	46.2	45.5	44.6	43.4	42.2	41.0
United Kingdom	42.5	43.6	51.8	65.8	76.4	81.8	85.8	87.3	89.4	88.9	88.0	86.7	84.6	81.3	77.8
United States ¹	63.6	64.0	72.8	86.0	94.7	99.0	102.5	104.8	104.8	104.9	106.0	105.8	105.3	105.5	106.2
Average	74.7	72.1	78.9	92.2	98.6	102.5	106.8	105.6	105.4	105.2	105.4	104.8	103.6	102.7	101.7
Euro Area	67.3	65.1	68.8	78.6	83.9	86.4	91.0	93.1	94.2	93.7	92.8	91.5	89.8	87.6	85.2
G7	83.2	81.1	89.3	104.1	112.0	117.0	121.3	119.5	118.6	117.4	117.5	116.9	115.8	114.9	114.1
G20 Advanced	79.6	77.4	85.2	99.5	106.2	110.5	114.5	113.0	112.4	111.7	111.9	111.3	110.2	109.2	108.4

Source: IMF staff estimates and projections. Projections are based on staff assessment of current policies (see Fiscal Policy Assumptions in text).

Note: For country-specific details, see Data and Conventions in text, and Table A.

¹ For cross-country comparability, gross debt levels reported by national statistical agencies for countries that have adopted the 2008 System of National Accounts (Australia, Canada, Hong Kong SAR, United States) are adjusted to exclude unfunded pension liabilities of government employees' defined-benefit pension plans.

(Source: IMF, 2015C, p. 57)

Table A. 10: Emerging Market and Middle-Income Economies: General Government Gross Debt, 2006–2020
(Percent of GDP)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Algeria	26.9	13.9	8.8	10.8	11.7	9.9	9.9	8.3	8.8	10.2	13.6	19.6	23.4	26.0	27.6
Angola	18.7	16.4	16.6	49.9	38.8	31.4	28.7	36.2	42.2	57.4	53.0	50.0	46.1	42.3	38.4
Argentina	61.8	53.2	47.0	47.6	39.2	35.8	37.3	40.2	45.3	52.1	55.1	56.5	59.5	62.0	65.0
Azerbaijan	10.2	8.6	7.3	11.8	11.1	10.1	11.6	13.8	15.9	20.6	22.7	22.7	24.4	24.3	26.1
Belarus	11.1	18.3	21.5	34.7	39.5	45.9	39.0	38.1	40.5	40.4	44.6	44.4	43.5	42.4	41.7
Brazil ¹	65.8	63.8	61.9	65.0	63.0	61.2	63.5	62.2	65.2	69.9	74.5	75.8	76.5	76.7	76.1
Chile	5.0	3.9	4.9	5.8	8.6	11.2	12.0	12.8	15.1	18.1	20.0	21.5	22.3	22.8	23.2
China	32.2	34.6	31.6	36.1	36.0	35.6	37.1	39.4	41.1	43.2	46.0	48.3	50.0	51.0	51.4
Colombia	35.8	32.5	32.1	35.2	36.4	35.6	34.1	37.8	44.3	50.9	48.9	47.6	45.9	43.8	41.5
Croatia	36.1	34.4	36.0	44.5	52.8	63.7	69.2	80.8	85.1	89.3	91.8	92.5	91.8	91.1	90.4
Dominican Republic	19.4	17.5	19.6	22.7	23.8	25.7	30.5	34.6	35.0	33.3	34.6	36.2	37.1	38.1	39.0
Ecuador	28.8	27.2	22.2	17.7	19.7	19.4	21.7	26.0	31.3	37.4	40.4	41.2	41.2	40.5	39.6
Egypt ²	90.3	80.2	70.2	73.0	73.2	76.6	78.9	89.0	90.5	90.0	89.3	84.8	81.7	79.3	77.0
Hungary	64.9	65.8	71.9	78.1	80.9	81.0	78.5	77.3	77.0	75.3	74.2	73.1	72.0	70.7	69.7
India	77.1	74.0	74.5	72.5	67.5	68.1	67.5	65.8	66.1	65.3	63.9	62.8	61.7	60.5	59.3
Indonesia	35.8	32.3	30.3	26.5	24.5	23.1	23.0	24.9	25.0	26.5	26.7	26.9	26.7	26.4	26.1
Iran	12.5	12.0	9.3	10.4	12.2	8.9	16.8	15.4	15.8	16.4	15.3	14.8	14.7	14.3	13.9
Kazakhstan	6.7	5.9	6.8	10.2	10.7	10.4	12.4	12.9	14.9	18.3	18.8	19.3	20.5	22.0	23.4
Kuwait	10.6	11.8	9.6	11.0	11.3	8.5	6.8	6.4	6.9	9.9	9.8	9.2	8.6	8.2	7.9
Libya	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malaysia	40.2	39.9	39.9	51.1	51.9	52.6	54.6	55.9	55.2	55.6	53.6	51.8	49.7	47.3	44.5
Mexico	37.8	37.5	42.8	43.9	42.2	43.2	43.2	46.4	49.8	52.0	52.1	52.0	51.5	50.8	50.0
Morocco	56.8	52.0	45.4	46.1	49.0	52.5	58.3	61.5	63.4	63.9	63.9	63.2	62.2	60.6	58.7
Oman	8.9	7.1	4.8	6.9	5.9	5.2	4.9	5.1	5.1	9.3	12.2	14.1	20.4	27.1	34.4
Pakistan	54.4	52.6	57.9	59.1	61.5	59.5	64.0	64.8	64.9	64.7	64.4	62.8	61.2	60.4	59.2
Peru	34.8	31.9	28.0	28.4	25.4	23.0	21.2	20.3	20.7	22.4	24.6	24.8	24.5	24.1	24.3
Philippines	51.6	44.6	44.2	44.3	43.5	41.4	40.6	39.2	36.4	35.9	33.9	32.0	30.3	28.8	27.3
Poland	47.5	44.6	47.0	50.3	53.6	54.8	54.4	55.7	50.1	51.1	51.0	51.1	50.7	49.7	48.8
Qatar	12.5	8.0	11.5	33.6	38.4	34.5	36.0	32.3	31.7	29.9	27.8	23.6	18.5	15.2	12.8
Romania	12.5	12.7	13.4	23.3	30.5	33.9	37.5	38.8	40.6	40.9	41.5	42.2	42.8	43.5	44.1
Russia	10.5	8.6	8.0	10.6	11.3	11.6	12.7	14.0	17.8	20.4	21.0	21.9	22.8	23.0	23.0
Saudi Arabia	25.8	17.1	12.1	14.0	8.4	5.4	3.6	2.2	1.6	6.7	17.3	25.8	32.8	38.8	44.3
South Africa	29.8	27.1	25.9	30.3	34.4	37.6	40.5	43.3	46.0	48.4	49.8	50.8	52.5	53.8	54.3
Sri Lanka	87.9	85.0	81.4	86.1	81.9	78.5	79.2	78.3	75.5	76.7	76.3	75.5	74.3	73.1	72.3
Thailand	39.2	36.0	34.9	42.4	39.9	39.1	41.9	42.2	43.5	43.5	42.6	42.2	42.0	42.0	41.5
Turkey	46.5	39.9	40.0	46.1	42.3	39.1	36.2	36.1	33.6	32.1	32.6	34.5	35.6	37.5	40.7
Ukraine	14.3	11.8	19.7	34.1	40.6	36.9	37.5	40.7	71.2	94.4	92.1	87.8	82.4	76.9	70.8
United Arab Emirates	6.8	7.9	12.5	24.1	22.2	17.6	17.0	15.9	15.7	18.9	18.3	17.4	16.5	15.8	15.0
Uruguay	75.7	68.0	67.8	63.1	59.4	58.1	57.9	60.2	61.3	64.1	65.3	66.8	67.4	67.7	67.7
Venezuela	34.5	29.1	23.1	27.7	34.6	43.8	44.3	52.1	51.8	53.0	44.1	41.4	41.5	42.4	44.4
Average	38.6	37.0	35.1	39.8	39.1	38.1	38.4	39.8	41.9	44.6	46.3	47.5	48.3	48.7	48.7
Asia	43.2	43.5	39.9	42.9	41.8	40.9	41.4	42.8	44.2	45.7	47.5	49.0	50.1	50.5	50.5
Europe	27.0	23.7	23.8	29.6	29.4	28.1	27.3	28.5	31.2	34.2	35.4	35.8	36.0	36.0	36.2
Latin America	47.9	46.4	46.5	49.2	48.3	48.0	48.3	49.2	52.6	55.6	57.2	57.8	58.1	58.1	57.8
MENAP	26.5	22.1	19.7	25.6	24.6	22.1	23.4	24.3	25.6	30.5	33.1	34.8	36.0	37.1	38.0
G20 Emerging	41.2	40.0	37.6	41.5	40.2	39.0	39.2	40.3	42.5	45.1	47.3	48.9	50.2	50.8	51.1

Source: IMF staff estimates and projections. Projections are based on staff assessment of current policies (see Fiscal Policy Assumptions in text).

Note: For country-specific details, see Data and Conventions in text, and Table B. MENAP = Middle East, North Africa, and Pakistan.

¹ Gross debt refers to the nonfinancial public sector, excluding Eletrobras and Petrobras, and includes sovereign debt held on the balance sheet of the central bank.

² Based on nominal GDP series prior to the recent revision. Therefore, figures are not comparable to the authorities' numbers because of a different denominator.

(Source: IMF, 2015C, p. 65)

Table A. 11: Low-Income Developing Countries: General Government Gross Debt, 2006–2020
(Percent of GDP)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bangladesh	42.3	41.9	40.6	39.5	36.6	35.3	33.8	34.5	33.9	33.2	33.0	32.4	31.9	31.7	31.1
Benin	12.5	21.2	26.9	27.3	30.2	31.9	29.2	29.8	34.0	35.2	36.1	36.6	36.9	36.0	34.7
Bolivia	55.2	40.5	37.2	40.0	38.5	34.7	33.3	32.5	33.0	38.0	41.9	44.3	46.0	47.1	47.8
Burkina Faso	22.6	25.3	25.2	28.5	29.3	29.8	28.3	28.7	28.5	33.2	32.2	33.4	34.4	35.9	36.8
Cambodia	32.9	30.5	27.8	29.1	29.4	30.3	32.1	33.0	33.9	34.3	33.9	33.3	32.4	31.5	30.3
Cameroon	15.9	12.0	9.7	10.1	11.5	13.2	15.4	18.7	25.4	32.2	35.1	37.2	38.5	39.3	39.8
Chad	26.2	22.2	20.0	31.7	20.7	20.7	17.9	18.7	24.6	25.2	23.8	20.6	19.6	18.4	16.2
Democratic Republic of the Congo	100.0	83.4	87.0	89.8	27.0	22.3	19.9	18.3	19.0	20.5	21.5	23.8	25.9	26.9	27.4
Republic of Congo	98.8	98.0	68.1	61.6	22.9	33.1	34.1	38.2	41.8	57.5	54.1	44.8	42.1	41.9	42.0
Côte d'Ivoire	79.4	74.0	70.8	64.2	63.0	93.3	44.8	39.9	36.6	34.7	33.4	32.1	30.9	29.8	27.5
Ethiopia	38.7	36.6	30.2	24.9	27.4	25.7	20.9	21.6	22.3	22.6	23.5	24.0	24.5	24.9	25.1
Ghana	26.2	31.0	33.6	36.1	46.3	42.6	49.1	56.2	69.0	72.8	70.5	66.3	61.4	57.8	55.1
Guinea	137.1	92.4	90.2	89.3	99.6	77.8	35.4	39.5	41.1	40.9	36.3	31.7	27.7	24.8	19.6
Haiti	39.0	34.6	38.0	27.8	17.3	11.8	16.5	21.4	26.6	26.5	26.5	26.5	26.9	27.0	26.9
Honduras	40.3	24.7	23.0	27.5	30.7	32.0	34.7	45.3	45.7	48.4	50.1	51.1	51.4	50.9	50.0
Kenya	44.0	38.4	41.5	41.1	44.4	43.0	41.7	44.2	52.6	56.2	55.9	55.4	53.9	52.0	50.9
Kyrgyz Republic	72.5	56.8	48.5	58.1	59.7	49.4	49.0	46.1	53.0	60.0	62.0	62.3	59.2	56.3	55.3
Lao P.D.R.	71.9	64.2	60.3	63.2	62.1	56.9	62.2	60.1	62.5	63.4	66.5	68.8	69.6	71.8	73.3
Madagascar	37.3	32.8	31.8	33.4	31.9	32.4	33.7	34.0	34.7	35.4	43.6	43.6	43.8	44.3	45.0
Mali	19.4	20.0	24.3	23.9	28.8	30.5	29.8	30.6	36.7	42.5	41.7	42.0	42.3	42.7	43.3
Moldova	30.9	24.6	19.3	29.1	26.9	24.1	24.5	23.8	31.5	44.8	44.9	45.0	46.0	47.4	48.4
Mongolia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mozambique	46.6	36.6	37.8	42.5	43.1	37.6	40.8	52.2	57.5	61.0	59.6	58.3	57.4	55.5	49.1
Myanmar	90.3	62.3	53.0	55.0	49.5	49.3	43.1	34.8	31.6	33.4	33.4	33.6	34.1	34.7	35.1
Nepal	49.5	43.2	41.9	39.3	35.4	33.2	34.5	31.9	27.7	23.4	24.5	25.5	25.9	25.3	24.9
Nicaragua	54.7	31.6	26.5	29.4	30.9	29.3	28.6	29.8	29.5	30.6	31.5	32.0	32.6	33.0	33.7
Niger	27.1	25.1	21.1	27.7	24.3	27.7	26.5	27.9	32.2	43.7	45.9	45.2	43.1	41.1	38.5
Nigeria	7.9	8.4	7.4	9.6	9.6	10.2	10.4	10.5	10.5	11.9	13.7	15.4	17.0	18.7	20.6
Papua New Guinea	39.6	33.7	31.7	31.4	25.6	23.0	26.7	34.0	35.6	33.6	32.4	31.2	28.9	26.3	23.3
Rwanda	26.6	26.7	20.9	22.4	22.6	23.1	20.1	27.6	30.2	32.7	34.8	37.9	38.6	37.5	36.5
Senegal	21.8	23.5	23.9	34.0	35.5	40.7	42.8	46.6	53.1	55.0	61.9	60.7	57.4	53.6	51.8
Sudan	75.0	70.7	68.8	72.1	73.1	70.6	94.8	89.9	74.0	71.5	74.0	64.4	61.0	57.9	55.3
Tajikistan	35.3	34.6	30.0	36.2	36.3	35.4	32.4	29.2	28.3	32.9	34.6	36.4	36.0	36.4	35.8
Tanzania	32.8	21.6	21.5	24.4	27.3	27.8	29.2	30.9	35.2	40.2	41.8	42.1	42.0	42.0	42.1
Uganda	31.7	19.6	19.3	19.2	22.9	23.6	24.2	27.6	31.4	35.0	37.9	41.1	44.0	45.6	46.2
Uzbekistan	21.3	15.8	12.7	11.0	10.0	9.1	8.6	8.3	8.5	11.6	16.0	14.8	13.5	12.0	11.9
Vietnam	38.4	40.9	39.4	45.2	48.1	46.5	48.6	52.6	57.2	61.2	63.7	66.1	67.1	67.9	68.1
Yemen	40.8	40.4	36.4	49.8	42.4	45.7	47.3	48.2	48.7	67.0	60.6	59.7	61.8	65.1	68.4
Zambia	25.0	21.9	19.2	20.5	18.9	20.6	25.5	28.6	35.2	41.9	44.9	46.5	47.7	47.2	46.2
Zimbabwe	44.7	50.1	68.9	68.3	63.2	51.8	56.7	54.2	53.4	69.3	57.5	58.3	59.4	59.5	55.0
Average	34.5	31.6	29.7	32.8	30.5	30.0	30.0	30.6	31.3	34.8	36.5	36.9	37.3	37.6	37.8
Oil Producers	24.8	24.0	22.1	26.5	21.7	22.6	22.2	22.9	24.0	28.3	30.8	32.6	34.1	35.5	36.8
Asia	45.8	43.6	41.5	43.5	42.5	41.3	41.2	42.0	43.0	44.3	45.2	45.8	45.9	46.0	45.7
Latin America	48.1	32.9	31.0	32.5	32.0	30.1	30.9	34.1	35.1	38.2	40.5	41.9	43.0	43.4	43.7
Sub-Saharan Africa	25.6	23.4	22.0	24.6	21.5	21.8	20.9	21.9	23.3	26.6	28.4	29.4	30.2	30.8	31.3
Others	52.3	48.4	44.5	47.8	47.1	44.6	51.5	48.9	44.2	48.9	50.4	46.6	45.3	44.3	43.9

Source: IMF staff estimates and projections. Projections are based on staff assessment of current policies (see Fiscal Policy Assumptions in text).

Note: For country-specific details, see Data and Conventions in text, and Table C.

(Source: IMF, 2015C, p. 71)

**Table A. 12: Advanced Economies: Balance on Current Account
(Percent of GDP)**

	2007	2008	2009	2010	2011	2012	2013	2014	Projections		
									2015	2016	2020
Advanced Economies	-0.9	-1.3	-0.2	0.0	-0.1	0.0	0.4	0.4	0.5	0.3	0.0
United States	-5.0	-4.7	-2.7	-3.0	-3.0	-2.8	-2.3	-2.2	-2.6	-2.9	-3.4
Euro Area ¹	0.1	-1.6	-0.2	0.1	0.1	1.2	1.8	2.0	3.2	3.0	2.3
Germany	6.7	5.6	5.7	5.6	6.1	6.8	6.4	7.4	8.5	8.0	6.8
France	-0.3	-1.0	-0.8	-0.8	-1.0	-1.2	-0.8	-0.9	-0.2	-0.4	-0.3
Italy	-1.4	-2.8	-1.9	-3.5	-3.1	-0.4	0.9	1.9	2.0	2.3	0.5
Spain	-9.6	-9.3	-4.3	-3.9	-3.2	-0.3	1.4	0.8	0.9	1.1	1.5
Netherlands	6.0	4.1	5.8	7.4	9.1	10.9	10.8	10.2	9.6	9.2	8.3
Belgium	1.5	-1.0	-1.1	1.8	-1.1	-0.7	-0.2	1.6	2.1	2.1	2.3
Austria	3.8	4.5	2.6	2.9	1.6	1.5	1.0	0.7	1.6	1.7	1.6
Greece	-14.0	-14.5	-10.9	-10.1	-9.9	-2.5	0.6	0.9	0.7	1.5	-0.2
Portugal	-9.7	-12.1	-10.4	-10.1	-6.0	-2.0	1.4	0.6	0.7	1.6	0.4
Ireland	-5.4	-5.7	-3.0	0.6	0.8	-1.5	3.1	3.6	3.2	3.0	2.0
Finland	3.8	2.2	1.9	1.2	-1.8	-1.9	-1.8	-1.9	-1.1	-0.7	-0.3
Slovak Republic	-4.8	-6.5	-3.5	-4.7	-5.0	0.9	1.5	0.1	0.1	0.1	2.1
Lithuania	-14.9	-12.9	2.1	-0.3	-3.8	-1.2	1.6	0.1	-2.2	-2.4	-2.2
Slovenia	-4.1	-5.3	-0.6	-0.1	0.2	2.6	5.6	7.0	6.7	6.2	4.1
Luxembourg	9.8	7.3	7.6	6.9	5.8	5.7	4.7	5.1	5.6	5.6	5.1
Latvia	-20.8	-12.3	8.0	2.3	-2.8	-3.3	-2.3	-3.1	-1.7	-2.7	-2.1
Estonia	-15.0	-8.7	2.5	1.8	1.3	-2.4	-1.1	0.1	0.6	0.3	-1.1
Cyprus	-10.8	-14.3	-9.8	-9.0	-3.1	-6.3	-1.6	-4.5	-4.2	-3.8	-4.0
Malta	-3.9	-1.1	-6.6	-4.7	-2.5	1.4	3.2	3.3	1.5	1.3	3.5
Japan	4.9	2.9	2.9	4.0	2.2	1.0	0.8	0.5	3.0	3.0	2.8
United Kingdom	-2.7	-3.7	-2.8	-2.6	-1.7	-3.7	-4.5	-5.9	-4.7	-4.3	-2.2
Korea	1.1	0.3	3.7	2.6	1.6	4.2	6.2	6.3	7.1	6.7	4.7
Canada	0.8	0.1	-2.9	-3.5	-2.7	-3.3	-3.0	-2.1	-2.9	-2.3	-1.6
Australia	-6.7	-5.0	-4.7	-3.6	-2.9	-4.3	-3.4	-3.0	-4.0	-4.1	-3.3
Taiwan Province of China	8.6	6.6	10.9	8.9	8.2	9.9	10.8	12.4	12.4	11.8	9.6
Switzerland	10.8	3.0	8.0	14.8	7.7	10.3	11.1	7.3	7.2	7.0	7.0
Sweden	8.9	8.5	5.9	6.0	6.9	6.6	6.7	6.2	6.7	6.7	5.7
Singapore	26.0	14.4	16.8	23.7	22.0	17.2	17.9	19.1	20.8	18.0	13.8
Hong Kong SAR	13.0	15.0	9.9	7.0	5.6	1.6	1.5	1.9	2.2	2.5	3.5
Norway	12.2	15.7	10.6	10.9	12.4	12.4	10.0	9.4	7.0	5.4	6.0
Czech Republic	-4.3	-1.9	-2.4	-3.7	-2.1	-1.6	-0.5	0.6	1.7	1.2	-0.1
Israel	4.0	1.1	3.5	3.6	2.3	1.5	3.0	4.3	4.6	4.7	3.9
Denmark	1.4	2.7	3.3	5.7	5.7	5.6	7.2	6.3	7.0	7.2	6.0
New Zealand	-6.8	-7.7	-2.3	-2.3	-2.8	-4.0	-3.2	-3.3	-4.7	-5.6	-4.3
Iceland	-14.0	-22.8	-9.7	-6.6	-5.3	-4.2	5.7	3.4	4.6	3.4	0.7
San Marino	...	...	...	...	...	...	...	...	...	...	...
<i>Memorandum</i>											
Major Advanced Economies	-1.2	-1.6	-0.7	-0.7	-0.8	-1.0	-0.8	-0.8	-0.6	-0.8	-1.1
Euro Area ²	0.2	-0.7	0.5	0.5	0.8	2.1	2.8	3.2	3.7	3.6	2.9

¹Data for Lithuania are included in the euro area aggregates but were excluded in the April 2015 *World Economic Outlook*; corrected for reporting discrepancies in intra-area transactions.

²Data for Lithuania are included in the euro area aggregates but were excluded in the April 2015 *World Economic Outlook*; calculated as the sum of the balances of individual euro area countries.

(Source: IMF, 2015f, p. 186)

**Table A. 13: Emerging Market and Developing Economies: Balance on Current Account
(Percent of GDP)**

	2007	2008	2009	2010	2011	2012	2013	2014	Projections		
									2015	2016	2020
Commonwealth of Independent States¹	3.8	5.0	2.6	3.4	4.3	2.5	0.7	2.2	2.4	2.5	2.8
Russia	5.5	6.3	4.1	4.4	5.1	3.5	1.6	3.2	5.0	5.4	4.5
Excluding Russia	-1.5	0.8	-1.8	0.4	1.8	-0.6	-2.3	-0.4	-3.3	-3.5	-1.0
Armenia	-8.5	-15.0	-17.6	-13.6	-10.4	-10.0	-7.6	-7.3	-5.9	-6.4	-5.7
Azerbaijan	27.3	35.5	23.0	28.0	26.5	21.8	16.4	14.1	3.0	2.7	5.1
Belarus	-6.7	-8.2	-12.6	-15.0	-8.5	-2.9	-10.4	-6.7	-4.9	-4.3	-4.1
Georgia	-19.8	-22.0	-10.5	-10.2	-12.8	-11.7	-5.7	-9.7	-10.7	-9.6	-5.4
Kazakhstan	-8.0	4.7	-3.6	0.9	5.4	0.5	0.4	2.1	-3.0	-4.1	0.0
Kyrgyz Republic	-6.0	-15.3	-2.2	-6.1	-9.6	-15.6	-15.0	-16.8	-17.7	-15.7	-9.9
Moldova	-15.2	-16.1	-8.2	-7.5	-11.0	-7.4	-5.0	-3.7	-6.2	-6.4	-3.8
Tajikistan	-8.6	-7.6	-5.9	-1.1	-4.8	-2.5	-2.9	-9.2	-7.5	-6.1	-3.0
Turkmenistan	15.5	16.5	-14.7	-10.6	2.0	0.0	-7.3	-5.8	-13.6	-12.1	-2.6
Ukraine ²	-3.5	-6.8	-1.4	-2.2	-6.3	-8.1	-9.2	-4.7	-1.7	-1.6	-2.5
Uzbekistan	7.3	8.7	2.2	6.2	5.8	1.8	2.9	1.7	0.2	0.3	0.5
Emerging and Developing Asia	6.5	5.8	3.4	2.4	0.9	1.0	0.7	1.4	2.0	1.8	0.0
Bangladesh	0.7	1.2	2.4	0.4	-1.0	0.7	1.2	-0.1	-0.9	-1.1	-1.5
Bhutan	14.2	-2.2	-2.2	-9.9	-23.5	-19.0	-22.7	-23.1	-26.8	-25.0	-6.5
Brunei Darussalam	43.1	43.5	41.6	44.0	38.8	29.6	29.4	28.3	-3.1	-2.1	12.5
Cambodia	-1.9	-6.6	-6.9	-6.8	-10.2	-11.0	-12.2	-12.2	-11.1	-10.6	-6.3
China	10.0	9.2	4.8	3.9	1.8	2.5	1.6	2.1	3.1	2.8	0.6
Fiji	-10.1	-15.9	-4.2	-4.1	-4.9	-1.1	-20.7	-9.0	-6.3	-6.6	-7.4
India	-1.3	-2.3	-2.8	-2.8	-4.2	-4.8	-1.7	-1.3	-1.4	-1.6	-2.5
Indonesia	1.4	0.0	1.8	0.7	0.2	-2.7	-3.2	-3.0	-2.2	-2.1	-1.7
Kiribati	-18.3	-19.3	-22.5	-16.3	-31.0	-24.5	-21.8	4.1	-24.9	-26.8	-13.1
Lao P.D.R.	-13.6	-19.2	-22.1	-20.1	-17.3	-30.2	-27.8	-27.8	-28.3	-22.7	-14.8
Malaysia	14.9	16.5	15.0	10.1	10.9	5.2	3.5	4.3	2.2	2.1	1.1
Maldives	-15.2	-28.8	-10.4	-8.1	-16.9	-7.4	-4.4	-6.1	-4.6	-5.8	-3.8
Marshall Islands	-0.9	0.9	-14.9	-26.6	-5.3	-8.7	-13.4	-17.8	-1.0	-4.0	-12.1
Micronesia	-9.5	-16.6	-18.9	-15.1	-17.9	-12.6	-10.1	4.6	0.2	-0.7	-4.2
Mongolia	4.9	-8.9	-6.9	-13.0	-26.5	-27.4	-25.1	-8.2	-8.4	-19.5	-6.2
Myanmar	-0.7	-4.2	-1.2	-1.1	-1.9	-4.2	-5.2	-6.1	-8.9	-8.3	-6.7
Nepal	-0.1	2.7	4.2	-2.4	-1.0	4.8	3.3	4.6	5.0	-2.7	-0.9
Palau	-17.9	-21.3	-7.4	-7.8	-10.5	-17.0	-10.3	-12.7	-7.9	-8.4	-9.3
Papua New Guinea	3.9	8.5	-15.2	-21.5	-23.6	-53.6	-31.8	-4.2	7.5	7.3	4.0
Philippines	5.4	0.1	5.0	3.6	2.5	2.8	4.2	4.4	5.0	4.5	2.5
Samoa	-13.5	-5.5	-5.3	-6.8	-4.0	-8.7	-2.6	-8.0	-6.9	-5.4	-4.1
Solomon Islands	-15.6	-18.2	-21.9	-33.3	-8.6	1.5	-4.5	-4.9	-11.2	-14.0	-11.9
Sri Lanka	-4.3	-9.5	-0.5	-2.2	-7.8	-6.7	-3.8	-2.7	-2.0	-2.0	-2.0
Thailand	6.0	0.7	7.8	2.9	2.4	-0.4	-0.9	3.3	6.2	5.4	0.8
Timor-Leste	40.2	46.1	38.7	41.2	40.6	40.2	42.7	21.4	15.9	15.7	3.4
Tonga	-7.0	-7.3	-7.6	-6.3	-7.5	-5.4	-1.7	-3.1	-6.0	-6.4	1.2
Tuvalu	-13.0	7.1	-1.0	-42.0	-61.3	-25.2	-24.1	-26.1	-36.8	-58.0	-16.4
Vanuatu	-7.3	-10.8	-7.9	-6.5	-8.4	-9.4	-1.4	0.5	-13.5	-13.0	-7.1
Vietnam	-9.0	-11.0	-6.5	-3.8	0.2	6.0	4.5	4.9	0.7	-0.9	2.5
Emerging and Developing Europe	-7.9	-8.0	-3.4	-5.1	-6.4	-4.5	-3.8	-2.9	-2.1	-2.4	-3.8
Albania	-10.6	-15.8	-15.9	-11.3	-13.2	-10.2	-10.7	-13.0	-13.2	-13.5	-7.3
Bosnia and Herzegovina	-9.4	-14.1	-6.6	-6.2	-9.6	-8.9	-5.8	-7.7	-7.7	-7.6	-5.0
Bulgaria	-24.3	-22.4	-8.6	-1.5	0.1	-1.1	2.3	0.0	1.0	0.2	-1.5
Croatia	-7.1	-8.8	-5.1	-1.1	-0.8	-0.1	0.8	0.7	1.7	1.5	-1.3
Hungary	-7.1	-7.1	-0.8	0.3	0.7	1.8	4.0	4.0	5.0	4.3	1.3
Kosovo	-10.2	-16.2	-9.2	-11.7	-13.7	-7.5	-6.4	-8.0	-8.0	-10.5	-8.7
FYR Macedonia	-6.9	-12.8	-6.8	-2.0	-2.5	-2.9	-1.8	-1.3	-3.2	-4.4	-3.5
Montenegro	-39.5	-49.8	-27.9	-22.9	-17.7	-18.7	-14.6	-15.4	-17.0	-20.8	-14.0
Poland	-6.3	-6.6	-4.0	-5.5	-5.0	-3.4	-1.3	-1.3	-0.5	-1.0	-2.9
Romania	-13.5	-11.5	-4.5	-4.6	-4.6	-4.5	-0.8	-0.4	-0.7	-1.5	-3.7
Serbia	-17.2	-21.0	-6.2	-6.4	-8.6	-11.5	-6.1	-6.0	-4.0	-3.8	-4.0
Turkey	-5.8	-5.5	-2.0	-6.2	-9.7	-6.2	-7.9	-5.8	-4.5	-4.7	-5.5

(continued)

	2007	2008	2009	2010	2011	2012	2013	2014	Projections		
									2015	2016	2020
Latin America and the Caribbean	0.2	-0.9	-0.7	-1.9	-1.7	-2.4	-2.9	-3.0	-3.3	-3.0	-2.8
Antigua and Barbuda	-29.9	-26.7	-14.0	-14.7	-10.4	-14.6	-14.8	-14.5	-10.5	-10.2	-12.7
Argentina ³	2.0	1.5	2.0	-0.4	-0.7	-0.3	-0.8	-1.0	-1.8	-1.6	-1.1
The Bahamas	-11.5	-10.6	-10.3	-10.1	-15.1	-18.3	-17.7	-22.2	-12.9	-8.9	-5.8
Barbados	-5.4	-10.6	-6.7	-5.8	-12.8	-9.3	-9.3	-8.5	-4.8	-4.6	-4.5
Belize	-4.0	-10.6	-4.9	-2.4	-1.1	-1.2	-4.4	-7.6	-6.3	-7.1	-6.5
Bolivia	11.4	11.9	4.3	3.9	0.3	7.2	3.4	0.0	-4.5	-5.0	-2.8
Brazil	0.1	-1.7	-1.5	-3.5	-2.8	-3.5	-3.8	-4.4	-4.0	-3.8	-3.8
Chile	4.1	-3.2	2.0	1.7	-1.2	-3.6	-3.7	-1.2	-0.7	-1.6	-2.2
Colombia	-2.9	-2.6	-2.0	-3.0	-2.9	-3.1	-3.3	-5.2	-6.2	-5.3	-3.9
Costa Rica	-6.3	-9.3	-2.0	-3.5	-5.4	-5.3	-5.0	-4.9	-3.8	-3.9	-4.6
Dominica	-20.6	-28.3	-22.7	-16.2	-13.5	-18.8	-13.3	-13.1	-12.8	-18.9	-12.2
Dominican Republic	-5.0	-9.4	-4.8	-7.4	-7.5	-6.6	-4.1	-3.2	-2.4	-2.5	-4.2
Ecuador	3.7	2.9	0.5	-2.3	-0.3	-0.2	-1.0	-0.6	-2.6	-2.8	-1.8
El Salvador	-6.1	-7.1	-1.5	-2.5	-4.8	-5.4	-6.5	-4.7	-2.6	-2.9	-4.5
Grenada	-30.6	-29.0	-24.3	-23.7	-23.6	-21.1	-23.2	-15.5	-13.7	-13.1	-15.2
Guatemala	-5.2	-3.6	0.7	-1.4	-3.4	-2.6	-2.5	-2.4	-1.7	-1.9	-2.0
Guyana	-9.5	-13.7	-9.1	-9.6	-13.0	-11.6	-13.3	-15.6	-14.9	-18.9	-9.1
Haiti	-1.5	-3.1	-1.9	-1.5	-4.3	-5.7	-6.3	-6.3	-4.3	-3.4	-4.1
Honduras	-9.1	-15.4	-3.8	-4.3	-8.0	-8.5	-9.5	-7.4	-6.5	-6.4	-5.1
Jamaica	-15.3	-17.7	-11.0	-8.0	-12.1	-10.7	-8.7	-7.4	-4.6	-2.9	-1.9
Mexico	-1.4	-1.9	-0.9	-0.5	-1.1	-1.4	-2.4	-1.9	-2.4	-2.0	-2.1
Nicaragua	-15.7	-17.8	-8.6	-8.9	-11.8	-10.6	-11.1	-7.1	-6.6	-7.0	-6.5
Panama	-8.0	-10.9	-0.7	-11.4	-15.9	-9.8	-12.2	-12.0	-9.8	-9.6	-5.7
Paraguay	5.7	1.0	3.0	-0.3	0.5	-0.9	2.2	0.1	-2.0	-1.9	-1.2
Peru	1.5	-4.3	-0.5	-2.4	-1.9	-2.7	-4.2	-4.0	-3.7	-3.8	-3.5
St. Kitts and Nevis	-17.4	-26.8	-25.7	-20.8	-15.9	-9.8	-6.6	-7.6	-12.6	-18.6	-15.8
St. Lucia	-29.4	-28.5	-11.5	-16.2	-18.8	-13.5	-11.2	-6.7	-6.6	-7.0	-8.5
St. Vincent and the Grenadines	-29.4	-33.1	-29.2	-30.6	-29.4	-27.6	-30.9	-29.6	-26.9	-25.1	-19.7
Suriname	11.1	9.2	2.9	14.9	5.7	3.3	-3.9	-7.4	-9.4	-7.8	-6.4
Trinidad and Tobago	23.9	30.5	8.5	19.8	11.9	3.4	7.0	5.7	0.7	-0.8	-1.8
Uruguay	-0.9	-5.7	-1.2	-1.8	-2.7	-5.0	-4.9	-4.4	-3.7	-3.7	-3.4
Venezuela	7.2	11.0	1.0	3.2	8.2	3.7	2.4	5.3	-3.0	-1.9	2.4
Middle East, North Africa, Afghanistan, and Pakistan	12.5	12.7	1.8	6.2	13.0	12.0	10.2	5.6	-3.6	-4.3	-0.3
Afghanistan	36.8	2.7	13.1	7.5	6.1	6.0	7.4	6.1	4.7	2.4	-1.0
Algeria	22.7	20.1	0.3	7.5	9.9	5.9	0.4	-4.5	-17.7	-16.2	-9.1
Bahrain	13.4	8.8	2.4	3.0	11.2	7.2	7.8	3.3	-4.8	-5.9	-3.3
Djibouti	-21.4	-24.3	-9.3	0.6	-13.7	-20.3	-23.3	-25.6	-31.4	-26.8	-15.4
Egypt	2.1	0.5	-2.3	-2.0	-2.6	-3.9	-2.4	-0.8	-3.7	-4.5	-4.2
Iran	9.7	5.8	2.4	5.9	10.5	4.0	7.0	3.8	0.4	1.3	2.8
Iraq	0.8	15.9	-6.8	3.0	12.0	6.7	1.3	-2.8	-12.7	-11.0	3.9
Jordan	-16.8	-9.4	-5.2	-7.1	-10.3	-15.2	-10.3	-6.8	-7.4	-6.5	-4.9
Kuwait	36.8	40.9	26.7	31.8	42.7	45.2	41.2	31.0	9.3	7.0	9.3
Lebanon	-7.2	-11.1	-12.5	-20.7	-15.1	-24.3	-26.7	-24.9	-21.0	-19.3	-12.9
Libya	44.1	42.5	14.9	19.5	9.1	29.1	13.6	-30.1	-62.2	-49.1	-13.1
Mauritania	-14.5	-13.2	-13.4	-7.6	-6.0	-26.6	-24.4	-28.9	-18.3	-25.6	-17.3
Morocco	-2.5	-7.1	-5.3	-4.4	-7.9	-9.5	-7.9	-5.5	-2.3	-1.6	-1.5
Oman	6.0	8.5	-1.1	8.9	13.2	10.3	6.6	2.0	-16.9	-24.3	-16.5
Pakistan	-4.5	-8.1	-5.5	-2.2	0.1	-2.1	-1.1	-1.3	-0.8	-0.5	-0.9
Qatar	14.4	23.1	6.5	19.1	30.7	32.6	30.9	26.1	5.0	-4.5	0.5
Saudi Arabia	22.5	25.5	4.9	12.7	23.7	22.4	18.2	10.3	-3.5	-4.7	-0.3
Sudan ⁴	-6.0	-1.6	-9.6	-2.1	-0.4	-9.3	-8.9	-7.7	-5.8	-5.6	-4.7
Syria ⁵	-0.2	-1.3	-2.9	-2.8	...	...	...	...	...	...	...
Tunisia	-2.4	-3.8	-2.8	-4.8	-7.5	-8.2	-8.3	-8.8	-8.5	-7.0	-3.5
United Arab Emirates	12.5	7.1	3.1	2.5	14.7	21.3	18.4	13.7	2.9	3.1	7.3
Yemen	-7.0	-4.6	-10.1	-3.4	-3.0	-1.7	-3.1	-1.7	-5.3	-5.4	-3.9

(continued)

	2007	2008	2009	2010	2011	2012	2013	2014	Projections		
									2015	2016	2020
Sub-Saharan Africa	1.7	0.0	-2.8	-0.9	-0.7	-1.9	-2.4	-4.1	-5.7	-5.5	-4.5
Angola	17.5	8.5	-10.0	9.1	12.6	12.0	6.7	-1.5	-7.6	-5.6	-3.0
Benin	-10.2	-8.1	-8.9	-8.7	-7.8	-8.4	-10.4	-8.0	-9.3	-9.1	-8.9
Botswana	15.1	-1.1	-11.0	-6.4	-0.6	-3.4	8.8	16.1	2.8	0.1	0.2
Burkina Faso	-8.3	-11.5	-4.5	-2.0	-1.5	-4.5	-6.6	-6.1	-7.9	-7.8	-7.2
Burundi	-5.4	-1.0	1.7	-12.2	-13.6	-17.3	-18.4	-17.6	-11.3	-9.7	-9.3
Cabo Verde	-12.9	-13.7	-14.6	-12.4	-16.3	-12.6	-4.9	-7.6	-9.7	-6.6	-3.9
Cameroon	1.4	-1.2	-3.1	-2.8	-2.7	-3.6	-3.8	-4.6	-5.0	-5.2	-4.2
Central African Republic	-6.2	-9.9	-9.1	-10.2	-7.6	-4.6	-3.0	-6.1	-11.8	-11.2	-6.6
Chad	8.2	3.7	-9.2	-9.0	-5.6	-8.7	-9.2	-8.9	-10.4	-9.3	-5.5
Comoros	-10.1	-18.7	-15.4	-5.8	-14.0	-17.6	-16.2	-11.5	-15.7	-17.0	-14.7
Democratic Republic of the Congo	3.2	-0.8	-6.1	-10.5	-5.2	-6.2	-10.6	-9.2	-7.6	-8.0	-12.0
Republic of Congo	-6.5	-0.5	-14.1	7.5	4.7	-2.4	-4.5	-9.4	-15.2	-14.6	-4.0
Côte d'Ivoire	-0.7	1.9	6.6	1.9	10.5	-1.2	-1.4	-0.7	-1.0	-1.9	-3.3
Equatorial Guinea	26.6	3.6	-23.1	-34.4	-0.1	-2.2	-4.0	-10.0	-8.7	-3.1	0.7
Eritrea	-6.1	-5.5	-7.6	-5.6	0.6	2.3	0.3	-0.9	-2.2	-3.0	-5.4
Ethiopia	-4.2	-6.7	-6.7	-1.4	-2.5	-6.9	-5.9	-8.0	-12.5	-9.3	-6.3
Gabon	14.4	22.0	4.7	8.7	12.8	15.9	12.3	8.3	-7.0	-4.2	-5.1
The Gambia	-8.3	-12.2	-12.5	-16.3	-12.3	-7.9	-10.2	-13.1	-13.5	-10.2	-8.9
Ghana	-8.7	-11.9	-5.4	-8.6	-9.0	-11.7	-11.9	-9.6	-8.3	-7.2	-4.2
Guinea	-10.8	-9.7	-7.9	-9.7	-18.8	-28.7	-24.0	-24.2	-16.7	-36.8	-13.6
Guinea-Bissau	-3.2	-2.5	-5.4	-8.7	-1.5	-8.8	-4.4	-1.2	-3.5	-4.6	-7.9
Kenya	-3.2	-5.5	-4.6	-5.9	-9.1	-8.4	-8.9	-10.4	-9.6	-9.2	-6.5
Lesotho	21.8	21.1	3.9	-10.0	-14.7	-9.8	-10.3	-7.9	-6.3	-13.9	-7.8
Liberia	-6.2	-46.6	-23.2	-32.0	-27.5	-21.4	-28.2	-28.7	-41.6	-37.1	-28.4
Madagascar	-12.7	-20.6	-21.1	-9.7	-6.9	-6.7	-5.6	-0.2	-1.3	-2.2	-4.0
Malawi	0.8	-7.8	-3.9	-1.0	-4.1	-2.4	-1.2	-3.6	-2.6	-2.5	-1.6
Mali	-8.1	-12.1	-7.3	-12.6	-6.1	-2.6	-3.4	-7.3	-3.3	-4.2	-6.4
Mauritius	-5.4	-10.1	-7.4	-10.3	-13.8	-7.3	-6.3	-5.6	-4.8	-4.8	-5.5
Mozambique	-9.5	-11.6	-11.0	-10.6	-23.1	-42.3	-40.0	-34.7	-41.0	-45.3	-40.7
Namibia	8.6	3.0	-1.5	-3.5	-3.0	-5.6	-3.9	-9.9	-12.1	-16.3	-7.1
Niger	-8.2	-12.0	-24.4	-19.8	-22.3	-14.6	-15.3	-15.2	-19.1	-23.4	-9.7
Nigeria	10.7	9.0	5.1	3.9	3.0	4.4	3.6	0.2	-1.8	-1.2	-0.3
Rwanda	-2.3	-5.0	-7.1	-7.3	-7.5	-11.4	-7.4	-11.9	-10.6	-9.6	-7.9
São Tomé and Príncipe	-29.0	-33.1	-23.2	-21.7	-25.5	-21.3	-23.4	-27.7	-12.4	-15.2	-11.4
Senegal	-11.8	-14.2	-6.8	-4.4	-8.2	-10.9	-10.4	-8.8	-6.1	-5.2	-4.5
Seychelles	-10.8	-19.1	-14.8	-19.1	-21.6	-19.9	-11.5	-21.0	-15.2	-14.7	-11.5
Sierra Leone	-7.4	-9.0	-13.3	-22.7	-65.3	-22.0	-10.4	-9.7	-11.4	-14.5	-9.4
South Africa	-5.4	-5.5	-2.7	-1.5	-2.2	-5.0	-5.8	-5.4	-4.3	-4.5	-4.0
South Sudan	...	...	...	...	18.4	-19.6	-1.2	2.7	-4.8	-3.6	-7.2
Swaziland	-1.9	-7.1	-11.6	-8.6	-6.8	3.1	5.2	2.9	1.1	-2.8	-1.7
Tanzania	-8.6	-7.8	-7.6	-7.7	-10.8	-11.7	-10.3	-9.3	-8.2	-7.1	-6.8
Togo	-8.6	-7.0	-5.6	-6.3	-8.0	-7.5	-13.0	-12.9	-12.2	-11.5	-10.2
Uganda	-4.5	-7.7	-6.4	-9.1	-10.8	-8.0	-7.2	-9.7	-10.5	-11.3	-11.0
Zambia	-1.2	-3.3	6.0	7.5	4.6	5.5	-0.6	-1.4	-1.4	-2.6	1.8
Zimbabwe ⁶	-5.4	-16.6	-47.1	-16.0	-30.9	-24.6	-25.4	-22.0	-22.9	-21.8	-22.6

¹Georgia, Turkmenistan, and Ukraine, which are not members of the Commonwealth of Independent States, are included in this group for reasons of geography and similarity in economic structure.

²Starting in 2014 data exclude Crimea and Sevastopol.

³Calculations are based on Argentina's official GDP data. See note 5 to Table A4.

⁴Data for 2011 exclude South Sudan after July 9. Data for 2012 and onward pertain to the current Sudan.

⁵Data for Syria are excluded for 2011 onward because of the ongoing conflict and related lack of data.

⁶The 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.

(Source: IMF, 2015f, p. 187-189)

Table A. 14: Commodity prices and forecasts
(Nominal U.S. dollars)

Commodity	Unit	2013	2014	2015	Forecasts				
					2016	2017	2018	2019	2020
Energy									
Coal, Australia	\$/mt	84.6	70.1	57.5	50.0	51.9	53.9	55.9	58.1
Crude oil, avg, spot	\$/bbl	104.1	96.2	50.8	37.0	48.0	51.4	54.9	58.8
Natural gas, Europe	\$/mmbtu	11.79	10.05	7.26	6.00	6.19	6.40	6.60	6.82
Natural gas, US	\$/mmbtu	3.73	4.37	2.61	2.50	3.00	3.50	3.68	3.88
Natural gas, Japan	\$/mmbtu	15.96	16.04	10.43	8.50	8.75	9.00	9.26	9.53
Non-Energy									
Agriculture									
Beverages									
Cocoa	\$/kg	2.44	3.06	3.14	3.20	3.10	3.00	2.91	2.82
Coffee, Arabica	\$/kg	3.08	4.42	3.53	3.40	3.41	3.42	3.43	3.44
Coffee, robusta	\$/kg	2.08	2.22	1.94	1.80	1.81	1.82	1.83	1.84
Tea, average	\$/kg	2.86	2.72	2.71	2.75	2.79	2.82	2.86	2.90
Food									
Oils and Meals									
Coconut oil	\$/mt	941	1,280	1,110	1,100	1,088	1,077	1,066	1,054
Groundnut oil	\$/mt	1,773	1,313	1,337	1,300	1,339	1,380	1,422	1,465
Palm oil	\$/mt	857	821	622	600	619	640	660	682
Soybean meal	\$/mt	545	528	395	370	381	392	404	415
Soybean oil	\$/mt	1,057	909	757	775	797	820	844	868
Soybeans	\$/mt	538	492	391	400	412	424	437	449
Grains									
Barley	\$/mt	202	138	194	195	195	196	197	197
Maize	\$/mt	259	193	170	170	175	180	185	191
Rice, Thailand, 5%	\$/mt	506	423	386	370	374	379	383	387
Wheat, US, HRW	\$/mt	312	285	203	185	193	201	210	219
Other Food									
Bananas, EU	\$/kg	0.92	0.93	0.96	0.95	0.95	0.94	0.94	0.94
Meat, beef	\$/kg	4.07	4.95	4.42	3.90	3.93	3.96	4.00	4.03
Meat, chicken	\$/kg	2.29	2.43	2.53	2.50	2.46	2.43	2.40	2.36
Oranges	\$/kg	0.97	0.78	0.68	0.75	0.77	0.79	0.81	0.83
Shrimp	\$/kg	13.84	17.25	14.36	12.00	12.11	12.22	12.32	12.43
Sugar, World	\$/kg	0.39	0.37	0.30	0.35	0.35	0.36	0.36	0.36
Raw Materials									
Timber									
Logs, Africa	\$/cum	464	465	389	398	409	419	430	441
Logs, S.E. Asia	\$/cum	305	282	246	250	259	268	277	287
Sawnwood, S.E. Asia	\$/cum	853	898	833	830	847	865	883	902
Other Raw Materials									
Cotton A	\$/kg	1.99	1.83	1.56	1.60	1.66	1.72	1.78	1.84
Rubber, RSS3	\$/kg	2.79	1.96	1.56	1.40	1.48	1.56	1.65	1.75
Tobacco	\$/mt	4,589	4,991	4,941	5,000	4,942	4,884	4,827	4,771
Fertilizers									
DAP	\$/mt	445	472	459	457	455	453	451	449
Phosphate rock	\$/mt	148	110	117	120	119	118	117	115
Potassium chloride	\$/mt	379	297	303	295	297	298	300	302
TSP	\$/mt	382	388	385	380	378	375	373	371
Urea, E. Europe	\$/mt	340	316	273	250	253	256	260	263
Metals and Minerals									
Aluminum	\$/mt	1,847	1,867	1,665	1,550	1,612	1,675	1,742	1,811
Copper	\$/mt	7,332	6,863	5,510	5,000	5,190	5,388	5,593	5,807
Iron ore	\$/dmt	135.4	96.9	55.8	42.0	44.1	46.3	48.6	51.0
Lead	\$/mt	2,140	2,095	1,788	1,775	1,818	1,862	1,907	1,953
Nickel	\$/mt	15,032	16,893	11,863	10,000	10,801	11,665	12,599	13,608
Tin	\$/mt	22,283	21,899	16,067	15,000	15,730	16,495	17,297	18,138
Zinc	\$/mt	1,910	2,161	1,932	1,800	1,858	1,919	1,981	2,046
Precious Metals									
Gold	\$/toz	1,411	1,265	1,160	1,075	1,066	1,058	1,049	1,041
Silver	\$/toz	23.85	19.07	15.72	14.00	14.21	14.42	14.64	14.86
Platinum	\$/toz	1,487	1,384	1,053	950	999	1,051	1,106	1,164

Next update: April 2016.

(Source: WB, 2016a, p. 35)

Table A. 15: Commodity price indexes and forecasts
(2010=100)

Commodity	2013	2014	2015	Forecasts				
				2016	2017	2018	2019	2020
Nominal US dollars (2010=100)								
Energy	127.4	118.3	64.9	48.9	61.5	66.0	70.3	74.9
Non-energy	101.7	97.0	82.4	79.4	81.1	82.9	84.7	86.7
Agriculture	106.3	102.7	89.3	88.1	89.5	90.9	92.5	94.0
Beverages	83.3	101.8	93.5	92.7	91.9	91.1	90.4	89.7
Food	115.6	107.4	90.8	89.3	91.0	92.7	94.6	96.4
Oils and meals	115.9	109.0	85.2	83.4	85.7	88.2	90.7	93.4
Grains	128.2	103.9	88.6	85.7	87.9	90.2	92.7	95.1
Other food	103.9	108.4	100.3	100.3	100.6	101.0	101.3	101.7
Raw materials	95.4	91.9	83.3	82.8	84.6	86.4	88.4	90.4
Timber	102.6	104.9	96.1	96.1	98.4	100.7	103.1	105.6
Other Raw Materials	87.6	77.8	69.4	68.2	69.5	70.8	72.3	73.8
Fertilizers	113.7	100.5	95.4	91.7	92.0	92.3	92.5	92.8
Metals and minerals *	90.8	84.8	66.9	60.1	62.6	65.2	68.0	70.8
Base Metals **	90.3	89.0	73.6	67.3	70.1	73.0	76.0	79.2
Precious Metals	115.1	101.1	90.6	83.4	83.1	82.9	82.7	82.4
Constant 2010 US dollars (2010=100), deflated by the MUV Index								
Energy	120.1	111.7	61.4	45.4	56.2	59.4	62.2	65.2
Non-energy	95.9	91.6	78.0	73.7	74.1	74.5	75.0	75.5
Agriculture	100.2	97.0	84.5	81.8	81.8	81.8	81.9	81.9
Beverages	78.5	96.1	88.5	86.1	84.0	82.0	80.0	78.2
Food	109.0	101.4	86.0	82.9	83.2	83.4	83.7	84.0
Oils and meals	109.3	103.0	80.6	77.4	78.4	79.3	80.3	81.4
Grains	120.9	98.1	83.9	79.6	80.4	81.2	82.0	82.9
Other food	98.0	102.3	94.9	93.2	92.0	90.8	89.7	88.6
Raw materials	90.0	86.8	78.9	76.9	77.3	77.8	78.2	78.8
Timber	96.7	99.0	90.9	89.3	89.9	90.6	91.3	92.0
Other Raw Materials	82.6	73.5	65.7	63.4	63.5	63.7	64.0	64.3
Fertilizers	107.2	94.9	90.3	85.2	84.1	83.0	81.9	80.9
Metals and minerals *	85.6	80.1	63.4	55.8	57.2	58.7	60.2	61.7
Base Metals **	85.2	84.1	69.7	62.6	64.1	65.7	67.3	69.0
Precious Metals	108.5	95.5	85.7	77.5	76.0	74.6	73.2	71.9
Inflation indices, 2010=100								
MUV index ***	106.1	105.9	105.7	107.6	109.4	111.2	112.9	114.8
% change per annum	-1.4	-0.2	-0.2	1.9	1.7	1.6	1.6	1.6
US GDP deflator	105.4	106.9	108.5	110.7	113.0	115.3	117.6	120.0
% change per annum	1.5	1.3	1.6	2.0	2.0	2.0	2.0	2.0

Source: See Appendix C.

Notes: (*) Base metals plus iron ore; (**) Includes aluminum, copper, lead, nickel, tin and zinc; (***) MUV is the unit value index of manufacture exports. For other notes see Appendix C.

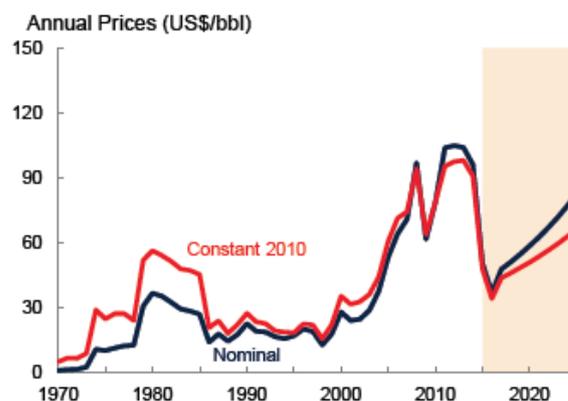
Next update: April 2016.

(Source: WB, 2016a, p. 37)

Table A. 16: Crude oil – prices, production and consumption



Source: World Bank.
Note: Last observation is December 2015.



Source: World Bank.
Note: 2015-25 are forecasts.

	1970	1980	1990	2000	2010	2011	2012	2013	2014
Production (thousand barrels per day)									
United States	11,297	10,170	8,914	7,732	7,556	7,861	8,904	10,069	11,644
Saudi Arabia	3,851	10,270	7,105	9,470	10,075	11,144	11,635	11,393	11,505
Russian Federation	n/a	n/a	10,342	6,583	10,366	10,516	10,640	10,777	10,838
Canada	1,473	1,764	1,968	2,703	3,332	3,515	3,740	3,977	4,292
China	616	2,122	2,778	3,257	4,077	4,074	4,155	4,216	4,246
United Arab Emirates	762	1,745	2,283	2,660	2,895	3,325	3,406	3,648	3,712
Iran, Islamic Rep.	3,848	1,479	3,270	3,852	4,352	4,373	3,742	3,525	3,614
Iraq	1,549	2,658	2,149	2,613	2,490	2,801	3,116	3,141	3,285
Kuwait	3,036	1,757	964	2,244	2,562	2,915	3,172	3,135	3,123
Mexico	487	2,129	2,941	3,456	2,959	2,940	2,911	2,875	2,784
Venezuela, RB	3,754	2,228	2,244	3,097	2,838	2,734	2,704	2,687	2,719
Nigeria	1,084	2,059	1,870	2,159	2,509	2,450	2,395	2,302	2,361
Brazil	167	188	650	1,271	2,137	2,193	2,149	2,114	2,346
Qatar	363	476	434	853	1,655	1,850	1,968	1,998	1,982
Norway	0	528	1,716	3,346	2,136	2,040	1,917	1,838	1,895
Angola	103	150	475	746	1,863	1,726	1,784	1,799	1,712
Kazakhstan	n/a	n/a	571	740	1,672	1,684	1,662	1,720	1,701
Algeria	1,052	1,139	1,347	1,549	1,689	1,642	1,537	1,485	1,525
Colombia	226	131	446	687	786	915	944	1,004	990
Oman	332	285	695	961	865	885	918	942	943
India	140	193	715	726	882	916	906	906	895
Indonesia	854	1,577	1,539	1,456	1,003	952	918	882	852
United Kingdom	4	1,676	1,933	2,714	1,361	1,116	949	867	850
Others	n/a	n/a	8,037	10,051	11,128	9,413	9,977	9,280	8,857
World	48,056	62,959	65,385	74,925	83,190	83,980	86,150	86,579	88,673
Consumption (thousand barrels per day)									
United States	14,710	17,062	16,988	19,701	19,180	18,882	18,490	18,961	19,035
China	556	1,690	2,320	4,766	9,266	9,791	10,231	10,664	11,056
Japan	3,876	4,905	5,240	5,542	4,442	4,439	4,688	4,521	4,298
India	391	644	1,213	2,261	3,319	3,488	3,685	3,727	3,846
Brazil	523	1,163	1,478	2,056	2,701	2,813	2,860	3,048	3,229
Russian Federation	n/a	n/a	5,042	2,542	2,895	3,096	3,137	3,179	3,196
Saudi Arabia	408	607	1,158	1,578	2,793	2,838	2,991	3,000	3,185
Korea, Rep.	162	476	1,042	2,263	2,370	2,394	2,458	2,455	2,456
Germany	2,774	3,020	2,689	2,746	2,445	2,369	2,356	2,408	2,371
Canada	1,472	1,898	1,747	2,043	2,316	2,404	2,372	2,383	2,371
Iran, Islamic Rep.	222	591	1,070	1,457	1,874	1,910	1,928	2,038	2,024
Mexico	412	1,048	1,580	1,965	2,014	2,043	2,063	2,020	1,941
Indonesia	138	396	653	1,137	1,458	1,567	1,599	1,615	1,641
France	1,867	2,221	1,895	1,994	1,763	1,730	1,676	1,664	1,615
United Kingdom	2,030	1,647	1,754	1,704	1,588	1,532	1,520	1,494	1,501
Others	n/a	n/a	20,868	23,112	27,442	27,679	27,789	28,065	28,320
World	45,348	61,233	66,737	76,868	87,867	88,974	89,846	91,243	92,086

Source: BP Statistical Review.

Notes: n/a implies data not available. Production includes crude oil and natural gas liquids but excludes liquid fuels from other sources such as biomass and derivatives of coal and natural gas included in consumption.

(Source: WB, 2016a, p. 42)