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IMPACT OF SUB PRIME CRISIS ON WORLD ECONOMY

The 2008 Sub-Prime Crisis, which over a period of time has emerged as a global financial crisis or the second "Great Recession", is considered by many economists to be the worst financial crisis since the Great Depression of the 1930s.

It resulted in the collapse of large financial institutions, the bailout of banks by national governments and downturns in stock markets around the world.

In many areas, the housing market also suffered, resulting in numerous evictions, foreclosures and prolonged unemployment. It contributed to the failure of key businesses, declines in consumer wealth estimated in trillions of U.S. dollars, and a significant decline in economic activity, leading to a severe global economic recession, which is still continuing.

At this juncture, it is quite apt enough to present the U.S. Sub Prime Crisis, SPILLOVERS.

Spillover reports examine the external effects of policies in five systemic economies (the "S5"): China, the Euro Area, Japan, the United Kingdom, and the United States. The mere existence of external effects does not imply that policy modification or collective action is needed—that depends on many factors, including the presence of economic externalities. The aim is to stimulate research, providing a global perspective for policy advice.

For this report, those consulted were officials from the other S5 and from selected emerging markets—Brazil, Hong Kong SAR, India, Indonesia, Korea, Mexico, Poland, Russia, Singapore, and Thailand.

The massive global recession set off by U.S. shocks confirmed the reality of major U.S. spillovers to the rest of the world.

Financial weaknesses from badly underwritten subprime mortgages in a highly interconnected U.S. financial system during a period of excess borrowing in the U.S. and elsewhere rapidly metastasized into a global crisis.
Typical trade and financial market spillovers were accentuated as a market disruption rendered liquidity scarce for major global banks and quasi-banks dependent on dollar wholesale funding. With credit to households, firms, and importers suddenly curtailed, confidence collapsed alongside private spending. This led to the deepest and most synchronized world recession since the 1930s, consistent with research finding that U.S. growth spillovers are large and transmitted mainly via financial channels.

Simulations involving "standard" international links typically report small U.S. growth spillovers.

Standard macroeconomic models focus mainly on links via exports and imports, which depend on activity and exchange rates (the latter driven by interest rate differentials), as well as wealth effects from international asset holdings.

Estimated spillovers are generally limited as bilateral trade and portfolio links are fairly small, particularly across systemic countries whose size and diversity tends to make them relatively closed to external trade. U.S. trade is a major driver of activity only in Canada and Mexico, immediate neighbors and signatories to the North American Free Trade Agreement (NAFTA), as well as the Caribbean and Central America.

U.S. markets are central to global asset pricing, an aspect not well captured in conventional policy simulations.

The United States accounts for about one-third of both global stock and bond market capitalization. However, the true importance of U.S. markets is captured by turnover—they represent close to two-thirds of equity and government bond
market turnover in the S5. Deep markets and the accompanying vast volume of market analysis mean that, despite the strong domestic orientation of U.S. markets, U.S. financial assets are bellwethers for global prices. Consistent with this central role in global price discovery, numerous studies have found that U.S. news is a major driver of foreign asset prices, while foreign events have only weak effects on U.S. asset prices.

These financial market ties are a major conduit spreading the impact of U.S. policies abroad. Analysis using different techniques consistently finds that a change in U.S. bond yields has a significant impact on yields in other countries and the ratio for equity price changes is larger still. While the ultimate source of these financial linkages—global market integration or more difficult-to-analyze “animal spirits” associated with private sector confidence—remains uncertain, imposing observed correlations between U.S. and foreign asset prices on a standard macroeconomic model generates larger and more plausible international spillovers.

Beyond close neighbors, spillovers via global asset prices are estimated to typically dominate trade channels.

The relative importance of these trade channels can be assessed by comparing outcomes from a standard macroeconomic model with those from the same model with typical international bond and equity price associations superimposed. Results across a mix of shocks indicate that spillovers via financial market channels typically dominate beyond close neighbors or countries with extensive capital controls (China and, in bond markets, India). For most G20 countries, a
one percentage point increase in U.S. growth is estimated to raise growth by around half a percentage point, with some three-quarters of the impact coming via asset prices. By contrast, overall Canadian and Mexican growth spillovers are estimated at more like four-fifths of a percent, with trade channels accounting for two-thirds of the total. During the crisis, the impact of disruptions in U.S. wholesale funding on global banking added a further layer to spillovers via financial channels, explaining the virulence of cross-border effects at the time.

The critical role of financial prices in spillovers underscores the importance of the macroeconomic and financial environment.

Given the forward-looking nature of asset markets, spillovers will in part depend upon the factors prompting the policy change and the overall environment in which the policy change takes place.

As elaborated below, estimated spillovers from similar policies can therefore
vary significantly over time. In what follows, event studies—which have been applied by others to identify the domestic impacts of U.S. policies over the crisis—are used to assess international impacts. While such analysis by its nature measures only initial financial market responses, it provides a powerful tool for considering potential asset price linkages associated with specific policy decisions.

MAPPING THE LINKAGES

Direct Financial Ties
The pivotal role of dollar markets in the global economy is reflected in the composition of U.S. net international liabilities, the largest in the world. Reflecting the dollar’s status as the main global reserve asset, the United States has massive net bond debt, worth almost 10 percent of global GDP and implying relatively large wealth spillovers. The net debt ratio has almost doubled since 2000, with foreign official holdings of U.S. Treasuries ballooning from half to three-quarters of the total. The U.S. gross bond liabilities of 13 percent of global GDP comprise about equal quantities of government and private debt, plus a large amount of quasi-government “agency” bonds dominated by the mortgage giants Fannie Mae and Freddie Mac. By contrast, the United States has a positive net asset position in equities and foreign direct investment.

Bilateral portfolio links are strongest for major reserve holders and financial centers, focused on public and private bonds, respectively.

- Net holdings of U.S. bonds are particularly large (over 5 percent of GDP) in some major reserve holding emerging markets—most notably China.
Demand for reserves has helped lower U.S. yields (see the China Spillover Report).

- Financial centers such as the United Kingdom hold large amounts of (mainly private) U.S. debt. However, this is offset by large reciprocal U.S. holdings of foreign assets.
- Foreign holdings of U.S. equities and U.S. holdings of foreign equities are both large. This is particularly true in advanced economies (given deep markets that allow more scope for portfolio allocation) and the Americas (given proximity).
- The stock of U.S. foreign direct investment is large in close neighbors (reflecting trade links) and other English-speaking advanced economies. Foreign direct investment flows, however, are increasingly focused on emerging markets and low income countries.

**Trade Relationships**

The United States plays an important, but not predominant, role in global trade.

U.S. trade is second to Euro area trade in value, and is only slightly larger than that of China, whose smaller economic size is offset by higher trade openness. The limited role played by the United States in global trade partly reflects its relatively low level of export compared to other systemic countries, reflected in the huge U.S. trade deficit and large trade surpluses of China and Japan. U.S. imports, conversely, are around the same size as those of the Euro area and larger than those of the other systemic economies.
Bilateral spillovers from U.S. real activity and competitiveness are largest for neighboring countries.

- U.S. activity and trade volumes. For trade volumes in goods and services, the strongest spillovers are on NAFTA countries, Central America, and Asia. These estimates adjust for international supply chains (see Selected Issues. Chapters 5–6, and the China and Japan Spillover Reports).

- U.S. activity and the terms of trade. Spillovers are largest for the Middle East, Africa, and some oil producers. Higher U.S. activity mainly boosts global demand and prices of cyclically sensitive commodities such as fuels and metals.

- Competitiveness. The bilateral effects of dollar fluctuations tend to diminish with distance. Dollar appreciation increases output in NAFTA members and parts of Central America, as well as in Asia and parts of South America (Selected Issues, Chapter 5 discusses the impact on trade composition).

Low income countries' linkages with the United States vary across regions. Workers' remittances are important inflows to Central America (they also matter for Mexico), while tourism and financial services are crucial for many countries in the Caribbean. By contrast, links with low income African countries come mainly via commodity prices, while in the case of Asia demand for basic manufactured goods (such as textiles) matters most.

Asset Price Links
A percentage point rise in the 10-year U.S. Treasury bond yield is associated with significant global market effects that have changed dramatically over the crisis (Figure 2).
Foreign bond yields:

Advanced economy bond yields typically rose by 0.4 percentage points, the effect being larger for Australia and Canada and lower for Japan. Most emerging market dollar bond yields showed a larger rise—more like 0.8 percentage points—except in China and India where capital controls prevented any significant impact. Both bond yield and exchange rate responses in emerging markets changed after the crisis.

![Figure 2: Estimated Bond Yield and Exchange Rates Spillover](image)

Exchange rate responses in other advanced countries changed after the crisis.

Source: Bloomberg, Haver, and IMF Staff calculations.

Exchange rates
A nominal depreciation against the dollar of 1–2 percent in financially open economies, but little impact on emerging markets with managed exchange rates.
This resulted in nominal effective appreciation in countries with managed rates, and depreciations elsewhere.

- A fall in commodity prices and little effect on global risk appetite. The commodity effect was particularly important for growth prospects in emerging markets that are commodity producers.
- These associations were consistent with markets identifying increases in U.S. yields with higher U.S. growth prospects and expected monetary tightening. The dollar typically appreciated as capital flowed from other countries to the United States.

Post-crisis, rising Treasury yields became associated with better global financial sentiment and capital outflows from the United States.

With abundant liquidity providing incentives to invest spare cash and the zero federal funds rate allowing cheap dollar funding, safe haven considerations (or the converse) came to dominate market responses. In contrast to the pre-crisis norm, rising U.S. yields was associated with improvements in global risk appetite, increases in commodity prices, higher equity valuations, and depreciations of the dollar (except against other low-interest-rate currencies also used for cheap funding such as the yen). The pre-crisis positive link between Treasury and emerging market yields disappeared, possibly because capital inflows to emerging markets associated with better global prospects offset the usual upward pressure on local bond yields.

The timing of the return to more typical asset price relationships, and the nature of the “new normal,” is a key uncertainty in assessing future policy spillovers.

While there is no strong evidence of such a reversion at this point, rising U.S. Treasury yields should at some point again become more an indicator of future
monetary policy tightening than of better global market sentiment. At that point, capital would likely flow back into the United States in response to higher Treasury yields, rather than away from it—although correlations among bond yields may also be less tight post-crisis because of changing perceptions of relative fiscal risks between emerging and advanced economies.

**Global Liquidity**

Deep asset and money markets that channel liquidity globally largely explain the central U.S. role in financial intermediation and the virulence of crisis spillovers:

U.S. assets dominate collateralized credit markets. The short-term nature of secured lending and repurchase agreements explains why many banks quickly found it difficult and increasingly costly to obtain term dollar funding as collateral and counterparty risks rose over the crisis.

- *The United States also has the largest global pension, mutual fund, and insurance industries given its wealth and limited social safety net relative to other advanced economies.* This “real money” investor base is central to the U.S. arm’s-length, bond-based financing model.

- *Dollar wholesale funding is further boosted by the fact that large money market mutual funds are an intrinsically U.S. phenomenon.* Their systemic role was confirmed by the Treasury’s guarantee program after a fund “broke the buck” during the crisis.

- *Strains in dollar funding over the crisis were partly relieved by swap arrangements between the Fed and other central banks.* The continuing importance of this channel is underlined by the latest extension of these swap
The importance of dollar wholesale funding explains the heavy foreign presence in the U.S. banking system despite the domestic focus of U.S. markets.

Foreign banks have some $5.4 trillion of assets in the United States versus U.S. banks' $2.5 trillion of assets abroad, the largest difference in the world. Most other advanced-economy banks have major U.S. operations, while U.S. commercial banks tend to be more engaged in emerging markets.

**Pension and mutual fund outflows from the United States are larger and more diversified than inflows, again reflecting the role of New York in wholesale funding.**

Large gross inflows and outflows from and to offshore centers such as the Cayman Islands reflect the complex financial engineering and book-entry practices prevalent in modern financial markets. However, the United States is also a significant net supplier of funds to countries as diverse as Brazil, Egypt, and India, underscoring the global reach of its role as a financial intermediary.

**The monetary policy dilemmas facing emerging markets are generally more acute than for advanced economies.**

Limited market depth makes emerging market financial conditions particularly susceptible to changing capital flows. Against a background of diverse monetary regimes, spillovers from U.S. monetary policy in any one country depend partly on exchange rate policies elsewhere, as the benefits (costs) to foreign activity of a dollar appreciation (depreciation) will be amplified if a close trading partner fixes to the dollar. This helps explain why exchange rate volatility versus the dollar tends to be regional, with much lower volatility in Asia and
the Middle East than in other regions, supported by active currency management and (in some cases) capital controls.

Pre-crisis historical volatility of dollar exchanges rates
(Standard deviation of log monthly returns, 2000 to 2007, annualized)

Consistent with the crisis experience, significant spillovers are estimated to come from widespread U.S. wholesale funding disruption.

Such disruption crystallized after Lehman’s failure caused counterparty risks on other banks to jump on fears of a systemic crisis. This is illustrated by simulations using data on cross-border loans between U.S. and foreign-based banks to calibrate the knock-on from disruptions in U.S. wholesale funding costs on foreign funding costs. The same model also provides estimates of the (potentially significant) growth spillovers of U.S. regulatory capital top-ups for systemic players mandated by the Dodd–Frank Act. In that case, however, costs must be viewed against the gains from greater financial stability.
Figure 4. Estimated U.S. Financial Policy Spillovers

(Percent change in foreign bank equity excess returns per percent rise in U.S. bank equity excess returns)

Disrupted wholesale funding increased U.S.-European bank links after the crisis.

The January 2010 Obama regulation speech signaled a new approach to global financial regulation
Subsequent Dodd-Frank announcements may have been more prone to regulatory arbitrage.

**Impact of Subsequent Dodd-Frank Proposals**

European banks

Other banks

○ Post Crisis △ Post Obama Speech

Source: Bayoumi and Bui (2011).

The size of the U.S. economy and, in particular, the global dominance of its financial markets create uniquely large policy spillovers.

Beyond close neighbors, these come largely through links associated with global financial asset prices, which directly affect financial conditions abroad and seep into domestic activity everywhere. These spillovers strengthen the case for clear communication of U.S. policies and for better-defined medium-term fiscal policy framework.

Concerns that the end of QE2 could lead to a rapid reversal of emerging market capital flows appear overblown.

Markets reacted to quantitative easing announcements, with little or no additional impact from actual purchases of assets. The fully anticipated end to QE2 seems unlikely to provoke much market reaction. Emerging market capital flows are more likely to reverse as it becomes apparent that the Fed will hike rates in the
foreseeable future, signaling smaller interest rate differentials and confidence in the U.S. expansion and/or fears about inflation.

A credible plan for a gradual U.S. fiscal consolidation would likely have limited short-term spillovers and substantial longer-term benefits.

A gradual and credible consolidation would raise U.S. national saving, lowering global real interest rates and imbalances over the medium-term. Beyond close neighbors, negative spillovers from lower U.S. activity would likely be largely if not completely offset by improved global financial market sentiment given the high level of U.S. government deficits and debt.

The risk of major spillovers from a freeze in dollar wholesale funding reinforces the case for strong implementation of Dodd-Frank rules.

Given the central role of U.S.-based (but not necessarily U.S.-owned) investment banks in funneling dollar liquidity to the rest of the world, stronger U.S. prudential supervision of these entities—preferably in concert with supervisors in other major financial centers given the geographic mobility of trading activity—would help contain renewed spillovers through this channel.

Overall, U.S. and foreign goals appear better aligned for U.S. fiscal and financial policies than for monetary policies.

Fiscal consolidation and sounder financial regulation help avoid global tail risks. While there may be disagreements about the pace and details of implementation, all countries have a stake in a successful outcome. Monetary policy is more complex. While spillovers from QE2 appear limited, low short-term interest rates and abundant liquidity partly work by increasing incentives to take financial risks.
This may be helpful for other countries in a similar cyclical position, but can be more problematic for those with open capital markets that have already shaken off the crisis and where investment opportunities are more plentiful. These other countries, however, also have macroeconomic tools to steer their economies.

Trade Crisis

A year of shifting fortunes in global trade expansion.
The volume of global trade (merchandise and services) is estimated to have expanded by 6.4 percent in 2011, over a percentage point above its ten-year average. However, performance across the year was not uniform. In the first quarter global trade growth was expanding at a historically high pace. However, the strong performance at the beginning of the year was punctured by multiple shocks to the global economy.

The Tohoku quake rattled supply chains, particularly in East Asia.
The disruptions to supply chains that occurred in the wake of the Tohoku quake dealt a severe blow to trade in capital goods and electronic appliances. Though many regions were affected, the impact was most pronounced in East Asia (and in particular China), as many Japanese firms are vertically integrated with production networks in the region. Indeed, global trade decelerated rapidly from a high annualized pace of 22.6 percent (3m/3m, saar) in March to 12.4 percent (3m/3m, saar) in April (figure Trade.1). Much of this drop in growth was driven by a 6.5 percent contraction in import demand from East Asia.
China’s import demand fell by 11.3 percent and South Korea’s by 13.7 percent. As sharp as the April trade contraction was, its rebound in May was equally strong, as much of the production capacity that had been sidelined in Japan was restored or replaced elsewhere, and the backlog of unfilled orders boosted the expansion in trade, with trade growing at a 19 percent (3m/3m, saar) pace in April (30% in East Asia).

**Global economic uncertainty rises, dampening what had looked like a robust recovery.**

Just as the effects of the Tohoku quake were dissipating, global economic uncertainty rose with the escalation of the Eurozone debt crisis, downward revisions to estimates of US growth, and contentious US debt ceiling discussions.
that led to a downgrade of US sovereign debt by S&P (see main text and finance annex for detailed discussion). The associated uncertainty and risk aversion had a rapid impact on the real economy, with global trade growth turning negative in August.

The slowdown in global trade volumes was more marked in high-income countries. High-income countries’ contribution to global trade fell by 24.0 percentage points from May to October (from 14.7% to minus 9.3%), while developing countries’ contribution to trade growth fell by only 0.9 percentage points (2.9% to 2.0%). The slowdown in global trade has been stronger in Europe, with imports volumes of European Union member states falling at a 17.4 percent (3m/3m), and 20.9% (3m/3m) annualized pace in September and October respectively, amid slowing industrial production and weakening order books (see Industrial production crisis). In the U.S., the deceleration has been less marked than in Europe, with import demand falling at 7.8 percent (3m/3m, saar) and 9.5 percent (3m/3m, saar) annualized pace in September and October respectively. And in developing countries, supported by a rebound in China’s imports volumes, imports increased at an annualized pace of 0.6 percent and 6.4 percent (3m/3m, saar) in the three months to September and October respectively.

**Current recovery lags behind the previous recession.**

With the recent sharp deceleration in the pace of global trade volume growth, world trade is falling once again below its pre-crisis peak volumes a milestone that it reached in December 2010. In contrast, 39 months after the previous recession in global trade in 2001, trade was some 13 percent above pre-crisis peak levels (figure Trade.2). Given the greater depth of the 2008 recession, it took twice as long during the current recovery to regain pre-crisis levels of trade
activity as it did in 2001 recession (32 vs. 16 months).

Most of the weakness in global trade volumes reflects the relatively sluggish recovery in high-income countries. As of October 2011, developing country exports were 9.2 percent above their pre-crisis peaks, while high-income exports had fallen to 9.4 percent below their pre-crisis peak volumes, having previously reached 1.5% of their peak volumes in May 2011 (figure Trade.3).

Regional exports have slowed sharply, but growth has remained in positive territory through August

South Asia’s exports, driven mostly by soaring Indian trade with China, eclipsed the performance of any other developing region in the first three quarters of 2011 (South Asian exports grew at about 24% for the first two quarters of 2011. Nevertheless, the region like all other developing regions saw export demand plummet in the third quarter as global uncertainty picked up and its export
volumes actually declined 9.6 in the 3 months ending September 2011. Most developing regions (except the Middle-East & North Africa where activity was interrupted by the Arab Spring) saw their export growth decline from double digit rates to negative ground in the third quarter, with Latin America performing best. Third quarter performance in Europe and Central Asia (-6.8 percent) was among the worst (-6.8 percent), reflecting their close trading ties with high-income Europe, the epi-center of current financial market turmoil (table Trade.1).

Figure 4: Recovery of exports in high-income countries lags behind that of developing countries

<table>
<thead>
<tr>
<th>Region</th>
<th>2011 Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>October</th>
<th>November</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing</td>
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<td>16</td>
<td>14.2</td>
<td>4.7</td>
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<td>5.5</td>
<td>4.4</td>
<td>14</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Source: World Bank

Figure 5: Regional export growth slowed sharply in third quarter
Oil exporters have enjoyed large terms of trade gains.

As discussed in more detail in the Commodity Annex, the rise in oil prices boosted oil exporters’ terms of trade from January to September (figure Trade.4). Sub-Saharan African oil exporters gained the most (8.5% of GDP), while oil importers in every region except Sub-Saharan Africa experienced a decline in their terms of trade (many of the oil importers in Sub-Saharan Africa are exporters of metals and minerals, which also have seen increases in international prices).

Outlook and Risks

Outlook

The volume of global trade (merchandise and services) is estimated to have expanded by 6.6 percent in 2011. The sharp slowdown in growth in the second half of 2011, will have negative impacts on whole-year growth statistics in 2012 – even if, as we expect quarterly trade growth rates within year to return positive. This negative carry-over will reduce annual growth to around 5.2 percent in 2012, before it picks up to around 7.2 percent in 2013.
This rate of growth in 2012 is below the average 5.5% growth between 1991 and 2011, though it exceeds it in 2013. However, even with this growth, global trade will remain well short of the level it would have attained had the 2008/09 recession not occurred. Indeed, at a growth rate of 7.5% it would require some four years for trade to reach trend volumes (figure 6).

As has been the case throughout the recovery, trade growth in developing countries (between 8-10%) is projected to be higher than in high-income countries (between 5 to 7%) over the forecast horizon. However, with high-income countries still accounting for some two-thirds of global trade flows, trade developments in developing countries over the forecast horizon will not be decoupled from the growth trajectory of high-income countries.
Risks

An escalation of the debt crisis in the Eurozone (beyond what is currently envisaged under the baseline assumptions) would have strong negative effects on global trade. In the scenario of a contained crisis in some smaller euro-area countries described in the main text, global trade growth will slowdown to between 0.9 and 1.8 percent in 2012 depending on the extent of confidence effects. In the scenario, where several larger European economies also become involved global trade would contract between 4 to 6 percent.

Vulnerabilities to slow down in Europe differ by region.

Thanks to their proximity, cultural links and existing preferential trade agreement Europe and Central Asia, and the Middle East and North Africa are the developing regions with the closest trade linkages with the European Union and would be hardest hit (figure 7). In total, some 43% of exports for each of these two regions are destined for the European Union. Latin America and the Caribbean are the least dependent on Europe - accounting for only 18% of their exports. Hence, while all developing countries will be impacted by a slowdown in import demand from the EU, countries in the Middle East and North Africa as well as Europe and Central Asia could potentially suffer the greatest direct impacts.
The vulnerability of developing regions to a slowdown in Europe depends not only on the share of its exports going to Europe but also on the commodity composition of its exports to Europe. In addition, besides the first round effects of slowing demand from Europe, there will be second round demand slowdown effects from other regions, triggered by the initial EU slowdown.

To disentangle some of these effects we adapt the standard GTAP model to estimate the effects of a 1% reduction in EU consumption (say on account of increased precautionary savings due to a further escalation in the Eurozone debt situation).

Simulation results using the standard GTAP (Global Trade and Protection) general equilibrium model of world trade suggest that although first-round effects for Europe and Central Asia are largest (and in line with export shares), first round effects are also strong for South Asia, because South Asian exports to Europe (in particular textiles and clothing) are more sensitive to a decrease in
consumer demand. Moreover, second round effects are actually much higher than first round effects for all regions. In particular, knock on effects (including reductions in derived demand from regions hit hardest in the first round) cut sharply into exports of East Asia & Pacific and to a lesser extent the Middle East and North Africa, even though for both regions the first round effects are relatively moderate (figure Trade.7).

![Figure 8: A slowdown in EU will have varying effects on developing country exports](image)

Country vulnerabilities to a downturn in the global economy differ by the composition of exports.

Another approach to determining which developing countries would be most vulnerable to a deterioration in conditions is to look at the price and volume sensitivity of their exports in the context of a global downturn.

Looking at the fluctuations in trade prices and volumes of 97 commodities
(commodities disaggregated at the two-digit level of the Harmonized System) following the 2008 crisis, we can calculate the extent to which the exports of individual countries might be hit if a similar downturn were to be reproduced.

According to these calculations that exporters of industrial metals such as copper (Chile and Zambia), precious stones (e.g. Botswana and Central African Republic) and oil and gas (Algeria, Yemen, Venezuela, Nigeria, Saudi Arabia) suffer the largest declines in export prices. Prices of non-industrial commodities proved to be more resilient. Moreover, the total value of exports declined even more sharply for industrial commodities, compared to other commodities (including food and oil) as fluctuations in the export volume of these commodities also were larger.

It follows from this analysis that major industrial commodity exporters like Chile, Botswana and CAF are likely to suffer large price and earnings swings and therefore be exposed to large swings in current account balances, government deficits and currency swings (figure Trade.8). Further, the negative income effects and loss in foreign currency earnings can in some instances provoke a significant deceleration in domestic demand and therefore GDP. Indeed, these secondary effects could be long-lasting if reduced export earning caused countries to delay the import of productivity and growth enhancing capital goods.

On the demand side, manufacturing goods saw the sharpest drop in volumes, with the demand for machinery, capital goods and durable goods dropping most as given uncertain prospects investors and consumers delay capital expenditures and big-ticket purchases (figure Trade.9). Countries more reliant on manufactures (such as China, India, Malaysia, Philippines, Thailand, and Turkey) may not see as large swings in their nominal balances, but are more likely to see bigger hits
to GDP as the volume of exports falls relatively sharply.

In comparing the two effects – price and volume - Haddad and Harrison (2010) find that overall the impact from the volume effect is stronger, thus implying that countries vulnerable through the volume channel are more likely to experience greater down turns in their export receipts.

**Developing country trade financing remains vulnerable to Eurozone financial crisis.**

Even for developing countries whose banking sectors are less integrated with the banking sector in the Eurozone, the ongoing debt crisis in the zone threatens to impact them indirectly through the trade finance channel. This is all the more important as European banks are major players in global trade finance. According to data from Dealogic, while US and Japanese banks accounted for 5 percent and 4 percent respectively of global trade finance in Q3 2011, large Euro Area banks alone accounted for at least 36 percent of the total. Over that period French and Spanish banks accounted for some 40 percent of trade credit to Latin America
and Asia. Recent calls by regulators to European banks to shore-up their capital adequacy ratios albeit necessary could lead to significant deleveraging. The typical short-term maturity of trade finance lends itself to being cut. And indeed, there is already indication that this is taking place with developing regions being hit harder. Using data from Dealogic (figure Trade.10), we observe that while high-income countries trade financing volumes fell by 7.8 percent between the first half of 2011 and the second half of 2011 (when the Euro Area crisis escalated), for developing countries the fall was 42 percent with the sharpest declines occurring in Latin America and the Caribbean (57.3 percent), and in Africa (47.5 percent). Further evidence of this is observed by the increase in trade finance demand provided by multilateral development banks, including the International Finance Corporation.

![Figure 10: Decline in trade finance volumes between first and second half of 2011](source: Dealogic and World Bank staff calculations)

A further slowdown in the global economy risks a rise in trade protectionist measures.

In general, during periods of economic downturns the application of trade defensive measures rise, as governments, pressured by the prospects of higher
unemployment or existing macroeconomic imbalances, pursue mercantalistic policies to protect domestic industries (and employment) and or gain market shares. Indeed, during the recent recession, the incidence of trade restrictive measures implemented by G-20 economies rose by some 175 new measures over the 11-month period between April 2009 to February 2010, according to the World Trade Organization (WTO). While the number of new measures implemented continued to increase during 2010, there are worrying signs that since the latter half of 2011, as global economic conditions deteriorated, the incidence of trade restrictive measures is picking pace. Indeed, according to the latest Global Trade Alerts report, the number of harmful trade measures implemented in the third quarter 2011 increased by 12.5% (q/q).

However, the unilateral 'implementation of trade measures has the potential to trigger tit-for-tat trade policy responses. A multilateral approach offers the best prospect (Hoekman, 2011). By one estimate, the gains to accepting what is already on the table as regards the market access gains from the Doha Development Agenda amounts to a conservative estimate of $160bn per year (Laborde, Martin, and van der Mensbrugghe).

**Industrial Production Crisis**

Unique exogenous shocks have affected industrial output.

The recovery in industrial output growth from the soft growth patch in the second half of 2010 was dampened earlier in 2011 by adverse weather conditions in Europe and the United States. Just as the impacts of adverse weather conditions were starting to ease, the shock to global supply chains from the
Tohoku earthquake depressed industrial sector activity at the beginning of the second quarter, affecting in particular the auto and electronics sector.

Industrial output growth began to strengthen again into the mid-year boosted by restoration of global supply chains and reconstruction efforts in Japan post-Tohoku, only to face further headwinds as a crisis of confidence engulfed high-income countries in the wake of the U.S. debt ceiling debate and the surfacing of the Euro area fiscal crisis. The heightened uncertainty related to the sovereign debt concerns in high-income countries started to shake investors and consumers' confidence, weighing on the industrial sector recovery as consumers delayed purchases of durable goods and businesses drew down stocks. The recent floods in Thailand have disrupted some supply chains, although the magnitude of the impact is expected to be only a fraction of that induced by the Tohoku disaster. All these shocks and the rebound from them have impacted industrial output growth to different degrees and had a differentiated impact across regions and time (figure IP.1).

Reflecting the confluence of diverging forces affecting industrial production, global industrial output has been moving sideways since the start of the year, recording monthly growth in excess of 2 percent in May and August, followed by declines of about 1.2-1.3 percent in June and September and 0.1 percent in October (figure IP.2).
Two-speed industrial production growth in high-income countries.

Growth in the industrial sector in the United States had proved resilient in the second half of 2011, with growth supported by revived consumer spending and relatively solid external demand. The relatively weaker pace of growth in the wake of the Tohoku disaster persisted however, even after the restoration of supply chains, with 3m/3m seasonally adjusted annualized rate of growth hovering around 3 percent in the second half of 2011. Industrial output advanced 0.7 percent in October month-on-month, supported by a 0.5 percent gain in manufacturing output on the back of strong increase in motor vehicle output and parts production, but growth dipped to 0.14 percent in November.

Industrial output in Japan staged a V-shaped recovery from the earthquake-induce plunge in industrial output. GDP posted a solid 5.6 percent quarter-on-quarter (saar) advance in the third quarter and industrial output expanded at more than 30 percent annualized rate in the three months to August, notwithstanding soft
external demand, the strength of the yen, and the global slump in IT sector. Industrial sector growth remained strong through October (expanding 6.5 percent 3m/3m saar) and the supply disruptions from the floods in Thailand are expected to have only a short-lived impact on growth, with the auto sector impacted most severely. Growth in other high-income countries in East Asia and Pacific has also rebounded from the effects of the Tohoku supply chain disruptions, and it appears that the effects of weaker growth in the Euro area have been relatively limited so far and that confidence effects following the financial turmoil since August have also been less pronounced to date.

Overall, after growth decelerated throughout the first half of 2011, industrial sector performance in core Euro Area countries strengthened somewhat in the third quarter – reflecting a combination of strong growth in July and August and much weaker or even falling growth in September. Output in Germany was particularly robust, expanding at 7.2 percent annualized rate in the third quarter, and somewhat more subdued in France where it expanded at a 2.3 percent annualized rate. Growth in the industrial sector in core euro countries was supported by consumer spending and the post-Tohoku bounce back effect. Meanwhile industrial production declined 1.9 percent, 3.6 percent, and 2.8 percent in Italy, Spain, and Portugal, where consumer spending was affected by falling confidence. Despite a mild reacceleration in industrial output growth in the third quarter, Euro area GDP growth almost came to a standstill in the third quarter, advancing 0.2 percent relative to the previous quarter. Growth would have been even weaker were it not for the 0.5 percent and 0.4 percent expansion in Germany and France.

The performance of the industrial sector in the Euro Area started to deteriorate however as the sovereign debt crisis intensified and the latest industrial sector
CHAPTER III: IMPACT OF SUB PRIME CRISIS ON WORLD ECONOMY

Data suggests a very weak fourth quarter. Industrial output declined 4.7 percent in the three months to November in the Euro Area, with output in Germany down 7.4 percent after robust growth in the previous quarters. Industrial output continued to decline sharply in Italy, down close to 12 percent during the same period. Meanwhile output continue to decline in most high-spread economies. It fell more than 15 percent in Greece, and more than 7 percent in Spain. Due to a particularly weak fourth quarter, industrial output in the Euro Area rose a mere 4.1 percent in the first eleven months of the year. Industrial output in Greece declined 8.4 percent year-to-date, while output in Spain and Portugal was down 1.2 percent during the same period. Germany recorded one of the strongest performances in the Euro Area, with industrial output up 8.3 percent.

Events in high-income countries and domestic policies have impacted industrial production performance in developing countries.

Most recent data for the developing countries show a generalized slowing across regions, with the exception of Middle East and North Africa where output is rebounding from the disruption associated with the Arab Spring.

In East Asia and Pacific, excluding China, growth reaccelerated in the three months to November to 6.4 percent annualized rate, following a sharp deceleration in the wake of the Tohoku earthquake. The effects of Tohoku and policy tightening has contributed to a deceleration in China’s industrial production growth starting in the second quarter of 2011, with growth easing to an average 7 percent annualized growth throughout much of the third quarter, down from 21 percent growth in the first quarter. Growth has reaccelerated to around 10.5 percent
3m/3m annualized rate, as output gained 0.8 percent month-on-month in November, notwithstanding the drag on domestic demand from some cooling in the housing market. In Thailand the disruptions caused by flooding have brought to a halt the recovery in the industrial sector, with output plunging at a 71.6 percent annualized rate in the three months to November.

Europe and Central Asia, whose industrial sector is most reliant on demand from Europe, started the year strongly, with industrial output expanding at a 17 percent annualized pace, but growth has weakened significantly since March, and output contracted during much of the second and third quarters, in large part due to a sharp slowdown in Turkey. Since then industrial activity has recovered slightly, with output rising at a 6.8 percent annualized rate in the three months to November, bolstered by a bounce-back in industrial activity in Romania and Ukraine.

Output is also declining in the Latin America region, with industrial production contracting at an accelerated rate through October (3 percent annualized rate) following the deceleration of activity in the largest economies in the region. Monetary policy and credit tightening in conjunction with a stronger currency have caused industrial production in the largest economy to contract starting with May. Weakness in domestic demand that caused Brazil’s GDP to stall in the third quarter also explains the decline in industrial output. Meanwhile growth in Mexico’s industrial output has also dipped into negative territory in the three months to October.

Industrial production in Sub-Saharan Africa, where data is available for only a few countries (Angola, Gabon, Ghana, Nigeria, and South Africa) has contracted
through most of the second quarter remained relatively flat in the three months to August. Nigeria has been the strongest performer in the region with growth reflecting rising oil production. Output in South Africa, the region's largest economy started to recover, reaching a 15 percent annualized pace in the three months to October. The decline in industrial output in both Latin America and Sub Saharan Africa may reflect a pull back from the relatively higher demand for oil and metal and minerals resources in the first quarter of 2011.

Industrial activity in South Asia has been deteriorating for several months, as policy tightening and uncertainty about the implementation of proposed regulatory changes in India weighed heavily on industrial production, which was contracting at a 12 percent annualized pace in the three months to October. Meanwhile growth Sri Lanka continued at a robust pace, while in Pakistan industrial output recovered strongly in the third quarter, after a dismal performance earlier in the year.

Industrial output data for the Middle and North Africa are published with a considerable lag. In the aftermath of the political turmoil of the Arab Spring industrial activity in Syria, Tunisia, Egypt and Libya has fallen by 10, 17, 17 and 92 percent at its lowest point according to official data. Activity surged during the second quarter of 2011 as the negative effects of the political turmoil in Tunisia and Egypt faded and activity regained (and exceeded by more than 15 percent) pre-Arab Spring levels. Nevertheless Egypt's industrial output growth relapsed in the third quarter when growth turned sharply negative, and in Tunisia, where growth was slightly negative.
Weakening prospects for the industrial sector

Given recent volatility in industrial output and the associated difficulties in extracting trend information from recent data, we rely on recent business surveys to gauge near-term developments in industrial output. In addition, uncertainties regarding the magnitude of the impact of supply-chain disruptions caused by the Thai floods further complicate the assessment of industrial sector outlook. There are indications however that these new supply disruptions are less damaging to global industrial output than the ones caused by the Tohoku earthquake, since factories elsewhere in Asia are able to make up for some of the lost Thai production.

The recent business surveys suggest industrial activity will remain weak in the months ahead.

The readings of the global manufacturing purchasing managers index (PMI), down a sharp 7.7 points as of November from its 56-month peak recorded in February 2011 suggest that global industrial output has likely contracted in the fourth quarter, notwithstanding the modest improvement recorded in December (figure IP.3). The PMI remains at weak levels, indicating that global manufacturing growth is expected to remain weak, on weak economic activity in the Euro area, a slowdown in growth in China in part due to weaker external demand, and partly due to cooling in the real estate market (figure IP.4). In addition policy tightening and tighter credit conditions contributed to a slowing in domestic demand in Brazil, while in India policy tightening and uncertainties about the implementation of proposed regulatory changes are dampening growth.
Small open economies that are highly synchronized with global business cycles also suggest that global industrial production growth will slowdown in coming months. Business sentiment was depressed in Taiwan, China in November, with the diffusion index down to a depressed 43.9 level, with weak external demand from the U.S. and Japan taking a toll on tech exports in particular. The high ratio of inventory to shipments increases the likelihood of an inventory correction in the months ahead if external demand does not strengthen. The PMI has recovered sharply in December, rising 3.1 points to 47.1 but continues to point to contraction in output. The deterioration in business sentiment has been less pronounced in South Korea and Singapore, but sentiment remains depressed there as well. In South Korea both output and new orders PMIs have declined sharply, but other business surveys show a mild improvement in business sentiment (figure 12).
Industrial output in the Euro Area is likely have contracted in the fourth quarter.

Indicators for Euro area industrial production are particularly weak, with the PMI for the Euro area sliding further below the 50 no-growth mark for the fourth consecutive month in November (46.4 pts nearing the level recorded in July 2009) and recovering only slightly to 46.9 in December (figure 12). Business sentiment is lowest in Greece, Spain, and Italy. Business sentiment as measured by the PMI deteriorated in core countries in November, while those for high-spread countries remained stable or inched up slightly before improving almost across the board in December (figure 13). Business sentiment indicators suggest that German industrial output will stall in coming months, with the PMI index below the 50 no-growth mark for a third consecutive month, in December (figure 14).
A 3.4 percent negative carry over from the third quarter, lingering weak business sentiment, weak consumer demand and continued fiscal austerity will depress industrial output in the Euro Area in the fourth quarter, and through the first half of 2012. Despite a modest recovery in the second half of 2012 industrial output is expected to contract in 2012.
In the United States and Japan, the picture is somewhat more positive.

After falling in August industrial production in the US picked up in September and has increased 0.7 percent in October, the strongest pace since March, boosted by more robust retail sales and solid external demand. The Institute of Supply Management’s Manufacturing Purchasing Managers’ Index rose to 53.9 by December from 50.8 in October marking the 29th successive month of growth in manufacturing activity. The supply-chain disruptions from the Thai floods have weighed on the U.S. industrial output in the fourth quarter, with auto manufacturers having already announced lower output for November because of parts shortages. Indeed industrial production advanced only 0.1 percent in November from the previous month. Nevertheless with stocks at relatively low levels and US consumer and business spending remaining resilient amidst financial turmoil elsewhere, manufacturing output is likely to continue increasing in the months ahead with growth expected to be in excess of 3.5 percent, in the fourth quarter before weakening in the first half of 2012. Growth is expected to average about 2 percent in 2012, about half the growth pace recorded in 2011.

Industrial output growth in Japan is expected to be more upbeat next year, although quarterly growth should decelerate somewhat after the speedy and impressive rebound in the aftermath of the Tohoku disaster (figure 15). Several factors will exert opposing pressures. On one hand increased public sector spending stipulated in the third supplementary budget, the easing of electricity shortages that hampered production during the course of the summer, and the replenishment of depleted auto inventories at Japanese overseas affiliates, and resilient personal consumption will support growth in coming months. The supply-chain disruptions from the Thai floods that have weighed on growth in the
fourth quarter will ease early next year, but the strong yen and weakening external
demand, in particular from the Euro area will limit growth. One source of
weakness for next year is subdued growth in the auto sector as demand in major
export markets, namely the U.S. and Euro area is expected to be weak.

Among developing regions the outlook is more upbeat than in high-income
countries.

Led by China, developing country industrial production growth will remain
stronger than high-income countries although growth will moderate due to
weakness in external demand, and in particular subdued demand from high-
iccome countries, especially in the first half of 2012, as well as some policy-
induced deceleration in growth.

China’s industrial production growth shows signs of policy-induced
deceleration in growth, with the PMI below the 50 no-growth mark in both
November and December. The policy-induced correction in the housing market led
to moderation in real estate investment and contributed to the slowdown in
industrial output in related industries. Furthermore, concerns about funding
conditions for small and medium enterprises have emerged recently, which
together with softer global demand could moderate growth somewhat in coming
months. In Thailand production will likely contract through the fourth quarter of
2011 and stage a modest recovery starting in the latter part of the first quarter of
2012. Given Thailand’s importance as an auto parts hub, floods will likely
affect output in other countries both within the East Asia region and outside,
although some countries in the region could benefit as they will likely produce
some of the parts and materials that used to be produced in Thailand.
In Europe and Central Asia, industrial output outlook has deteriorated, as the region is likely to suffer from the financial turmoil in Euro area. In Turkey after a marked deterioration in the first part of 2011, sentiment has recovered somewhat with the PMI above the 50 no-growth mark since September. Similarly in Russia business sentiment improved since September, rising above the 50 growth mark in October.

Overall, global industrial output growth is expected to ease to around 2.0 percent in the fourth quarter, from 2.9 percent (saar) in the third quarter, and ease further in the first half of 2012, before reaccelerating in the second half of 2012, when the current headwinds will abate.

The floods in Thailand, which are disrupting the global supply-chain, have created further headwinds and are likely to disrupt production for at least two quarters. Another headwind for global industrial production is the expected correction in the global inventory cycle in the near-term. Indeed, the inventory to shipment ratio in
countries that provide timely and reliable data (South Korea, Taiwan, China) is still above long-term trends. Policy tightening in major emerging economies is also likely to contribute to the slowdown in industrial production over the short-term.

**Risks and vulnerabilities**

Should the financial turmoil and deterioration in financial market confidence lead to a market-induced freezing-up in capital markets, and a tightening in global credit, the prospects for the industrial sector would deteriorate markedly. In the small contained crisis scenario global GDP growth could be 1.7 percent lower than the baseline in 2012, while in the scenario of a larger crisis economic activity could see a 3.8 percent decline relative to the baseline in 2012 (See Main text). In these two downside scenarios, economic activity in developing countries, including industrial sector growth, could be 1.7 percent and 3.6 percent lower than the baseline, respectively, in 2012, and 1.8 and 4.3 percent lower than the baseline in 2013, respectively.

In the event of an economic downturn similar to the one following the 2008 crisis sharp declines will likely occur in the demand for machinery, capital goods and durables, with countries that depend heavily on this type of production being the most vulnerable to postponement in capital expenditures by investors and government and big ticket purchases by consumers. Countries that rely heavily on manufactures (China, India, Korea, Malaysia, The Philippines, Thailand, Taiwan, China, and Turkey) would be affected.

Another risk to industrial output growth is the possibility of domestic banking
crises, as non-performing loan ratios are likely to increase with the deceleration in GDP growth in developing countries. A sharp slowdown in credit growth or outright contraction will have marked impacts on domestic demand, and industrial output.

Economies in Europe and Central Asia and Latin America could be vulnerable to possible deleveraging by European banks. There are already signs that many emerging country banks are tightening terms and standards of lending across all regions, and all types of loans (business, real estate, and consumer).

**Global Commodity Scenario**

Following more than two years of strong growth, commodity prices peaked in early 2011 and then declined on concerns about the global macroeconomic and financial outlook and slowing demand in emerging markets, notably China (figure 16). The biggest decreases were for metals but some of the largest individual declines were among agriculture raw materials (cotton and rubber), edible oils (coconut and palm kernel oil), and cocoa. Most indices ended the year much lower compared to their early-2011 peaks—agriculture down 19 percent, energy down 10 percent, and metals down 25 percent.

The recovery in prices in 2009-10 was due to strong economic growth, re-stocking in China, and a number of supply constraints. In early 2011, several disruptions, including drought and heavy rains that affected most agriculture markets as well as coal and mineral output in various locales, pushed prices to annual highs. Political unrest in North Africa and the Middle East resulted in a loss of significant oil supplies, most importantly in Libya. As markets absorbed these
disruptions and supply conditions improved, prices began to come under additional downward pressure from slowing demand and uncertainty about the near-term economic and financial outlook.

![Figure 16: Commodity price indices](image)

Commodity prices are generally expected to decline from their high levels in 2012 due to a slowdown in demand and improved supply prospects—in part because high prices have led to greater investment. Crude oil prices are expected to average $98/bbl in 2012, assuming the political unrest in the Middle East is contained and Libyan crude exports return to the market. Metals prices are expected to decline by 6 percent in 2012 on moderating demand and commissioning of new supply projects—partly the result of a lengthy period of high prices. Food prices in 2012 are expected to average 11 percent lower than 2011, assuming a normal crop year and a moderation in energy prices (Figure 16). There are both upside and downside risks to the forecast. Continuation of political unrest in the Middle East and North Africa could lead to further disruption of supplies and higher oil prices in the shorter term—especially given
low stocks and a market short of light/sweet crude. Strong demand by China, including for re-stocking, could keep metal prices higher than projected, and a continuation of supply constraints that has plagued the industry the past decade could further aggravate markets. Given low stock levels in some agricultural markets (especially grains), prices are still sensitive to adverse weather conditions, energy prices, and policy reactions. Moreover, the diversion of food commodities to production of biofuels (it reached almost 2 million barrels per day crude oil equivalent in 2011), makes markets tighter and more sensitive to weather and policy responses.

Downside risks entail mostly slower demand growth due to the deterioration of the debt crisis, especially if it expands to emerging countries where most of the growth in commodity demand is occurring. The downside risks apply directly to metals and energy, which are most sensitive to changes in industrial production, and indirectly to agriculture.

| Table 1. Key nominal annual price indices—actual and forecasts (2005=100) |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
|                        | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   |
| Energy                 | 115    | 120    | 133    | 115    | 125    | 140    | 179    | 177    |
| Non-Energy             | 125    | 135    | 142    | 142    | 174    | 210    | 170    | 184    |
| Agriculture            | 112    | 138    | 171    | 149    | 170    | 209    | 165    | 175    |
| Food                   | 111    | 139    | 186    | 156    | 170    | 210    | 188    | 177    |
| Beverages              | 107    | 124    | 152    | 157    | 182    | 208    | 183    | 175    |
| Raw Materials          | 110    | 129    | 143    | 129    | 166    | 207    | 193    | 177    |
| Metal & Minerals       | 154    | 186    | 180    | 120    | 180    | 205    | 193    | 196    |
| Fertilizers            | 104    | 149    | 299    | 304    | 187    | 267    | 252    | 254    |
| MeV                   | 192    | 169    | 117    | 109    | 113    | 125    | 117    | 116    |

Source: World Bank

Figure 17: Key nominal annual price indices—actual and forecasts
Crude Oil

Crude oil prices (World Bank average) peaked near $120/bbl in April following the loss of 1.4 mb/d of Libyan oil exports. This significantly tightened light/sweet crude markets, particularly in Europe where much of Libya’s crude was sold. Disruptions of light crude production elsewhere—including other MENA countries, West Africa and the North Sea—led to a draw on inventories of both crude and products outside of North America (figure 19). At OPEC’s June meeting, oil ministers were reluctant to adjust production levels or even discuss how to make up for the shortfall in Libya’s output Subsequently, IEA member governments released 60 million barrels of emergency stocks over the summer, half of which were from the U.S. Strategic Petroleum Reserve. During the fourth quarter, the World Bank average oil price averaged a little over $100/bbl due to weakening oil demand, recovery in Libyan oil production, and surplus conditions in the U.S. mid-continent that saw WTI prices diverge substantially from internationally traded crudes. However, heightened geopolitical concerns surrounding Iran’s nuclear program, help lift prices toward year-end—it averaged $104/bbl in December.

High oil prices and weakening economic growth impacted oil demand in 2011, with world consumption growth of just 0.7 mb/d or 0.8 percent—a little more than one-quarter of the large jump in 2010 (figure 18).
OECD oil demand declined for the fifth time in the past six years, and is on track to fall again in 2012. Non-OECD oil demand growth, of 1.2 mb/d or 3 percent, was down from a 2.2 mb/d climb in 2010. For 2012, world oil demand is projected to rise by 1.3 mb/d or 3.6 percent, with all of the growth in emerging markets.

In the near term, light/sweet crude markets could ease with recovery of oil production in Libya. Following the fall of Tripoli in early September, Libya’s national oil company and joint venture partners moved quickly to restore output in fields that were unaffected by the fighting. Production is reported to have reached 0.9 mb/d in December – more than half of pre-crisis levels of 1.6 mb/d. The IEA expects that production will fully recover by 2014.

Non-OPEC supply developments (figure 21) continue to perform above expectations due to double digit investment growth and less-tight conditions for rigs, equipment and services. These are bearing results, not only with new project developments but also by slowing the decline rates in mature OECD areas, such as the U.S. and North Sea. Last year saw a number of unplanned outages and heavier-than-expected maintenance in the North Sea that kept non-OPEC production growth fairly modest. However non-OPEC output (which accounts for 60 percent total world oil supplies) is expected to increase by 1
mb/d in 2012, according to the IEA, and satisfy much of the growth in global oil demand. The return of Libya's oil production may necessitate accommodation by other OPEC members to keep prices from falling significantly. This would in turn raise OPEC's spare capacity, at a time when most OPEC countries are also investing in new capacity. Iraq's production has risen above 2.7 mb/d, due to increased output from new joint venture projects, and oil exports have also reached new highs. Iraq's oil output is expected to reach nearly 3.2 mb/d in 2012.

In the medium term, world oil demand is expected to grow only moderately, about 1.5 percent p.a., owing to slower global GDP growth coupled with efficiency improvements in transport and ongoing efforts by governments and industry to reduce carbon emissions, particularly in high-income countries. As in the past, all of the consumption growth is expected to be in emerging markets (figure 20), with modest declines in OECD countries—largely due to expected efficiency improvements.

On the supply side, non-OPEC countries are expected to continue to rise moderately their oil supply, in part due to high prices, but also continued technological advances that have brought forth new supplies from shale deposits and deep water offshore. Production increases are expected from a number of areas, such as Brazil, Canada, the Caspian and West Africa. These will be offset by declines in from older fields, especially in the North Sea and Mexico. Globally there are no resource constraints into the distant future. Impediments are mainly policy issues, such as access to resources and suitable fiscal terms and conditions for investment.

Oil prices (World Bank average) are expected to decline from $104/bbl in 2011 to an estimated $98/bbl in 2012 and fall over the forecast period due to slowing global demand, growing supply, efficiency improvements, and substitution away
from oil. The long-term oil prices that underpin these projections are based on the upper end cost of developing additional oil capacity, notably from oil sands in Canada, assessed at $80/bbl in constant 2011 dollars. It is expected that OPEC will endeavour to limit production to keep prices relatively high, given the large expenditure needs in most countries. However, the organization will also be wary of letting prices rise too high, having witnessed the impact this has had on demand in recent years, especially in OECD countries.

**WTI-Brent price dislocation**

In early 2011 the price of WTI (which historically traded at a small premium to Brent for quality and location reasons) fell by more than $25/bbl below Brent due to a large build-up of crude in the U.S. mid-continent near Cushing Oklahoma—the delivery point for the NYMEX WTI futures contract. Crude flows into the region have increased from the new Keystone Pipeline which brings greater volumes from Canada and from rapidly growing production of liquids-rich shale projects in North Dakota. The mid-continent also sources crude from elsewhere in the U.S. as well imports through the Gulf of Mexico. While there are plenty of
options to bring crude into the region, there are few to move it out, especially to Gulf coast refineries.

Stocks at Cushing rose in 1Q2011 but then declined, in part due to higher refining runs prodded by large margins from low crude input prices. Maintenance at local refineries was also deferred to take advantage of the high margins. Producers began moving crude to the Gulf coast by rail, barge and truck, as the large WTI-Brent price spread rendered such move profitable. Other pipeline flows into Cushing also eased substantially, as producers sought higher value alternatives for their crude.

In November, the price spread narrowed significantly, following announcement of a planned reversal of the Seaway pipeline that currently ships crude from the Gulf coast to Cushing. The pipeline’s prospective new owners said that they will ship 0.15 mb/d to the Gulf in 2Q2012, and raise capacity to 0.4 mb/d by early 2013. Meanwhile the U.S. government deferred a decision until 2013 on the proposed 0.6 mb/d Keystone Pipeline extension, that would transport Canadian crude to the U.S. Gulf, so owners could re-route the pipeline away from environmentally sensitive areas in Nebraska.

Therefore, WTI is expected to be trading at a sizeable discount to Brent until adequate pipeline capacity is constructed to the Gulf of Mexico, or from Alberta to the Pacific coast (expected to be operational in 2017). In addition, more storage capacity is coming online, and lower net volumes flowing into the region are likely to reduce the spread.
Meanwhile Brent crude prices have remained firm due to the tightness in light/sweet markets in the eastern hemisphere, strong demand in Asia, and low stocks. Brent became the main international marker crude in 2011, and prices averaged $111/bbl in the second half of the year. WTI, largely dislocated from international markets, averaged just $92/bbl.

Metals

Metals prices fell from their highs in early 2011 due to concerns about global growth emanating from the debt crises and policy slowing in China. Prices were strengthening up to the first quarter of 2011 on strong demand in China (including earlier re-stocking), lower stocks, production cutbacks and various supply disruptions. However, China moved into de-stocking mode and stocks outside China began to rise. China’s metal imports in the first half of 2011 fell sharply, but started to pick up in the second half, especially for copper. World metals consumption, which grew at 11 percent in 2010, slowed to 4 percent in the first 10 months of 2011, with growth slowing sharply in all main regions (world metals consumption grew 3.8 percent during 2000-10.) For China,
however, the data only show apparent demand and do not include stock changes, indicating that underlying consumption may have been higher.

Prices were also supported by numerous supply constraints, notably for copper. The aluminum market, which is in surplus, had a substantial portion of stocks tied up in warehouse financing deals and unavailable to the market. All metals prices are well off their highs in early 2011 (figure 24). Nickel prices have declined more than one-third because of slowing demand by the stainless steel sector and expectations of large new nickel production capacity additions in 2012 and beyond. Copper prices dropped one-quarter third, but still remain above the costs of production due to supply tightness at the mine level. Aluminum prices have declined less than one-quarter and have fallen into the upper end of the cost curve. Metal prices are expected to rebound from their lows in the near term on re-stocking in China, but are not expected to reach earlier highs because of moderating demand growth and expected supply increases for all metals for the role of China in metal demand). Prices are projected to decline into the medium term for all metals with the exception of aluminum, which is expected to rise, supported by higher costs for power and other inputs.

Although there are no resource constraints into the distant future for any of the metals, over the longer term a number of factors could result in upward pressure on prices such as declining ore grades, environmental and land rehabilitation, as well as rising water, energy and labor costs.
Copper

Copper prices fell from over $10,000/ton in February to $7,500/ton during 4Q2011 on high stocks and slowing demand. Copper consumption growth in the first ten months of 2011 fell slightly from an 11 percent gain in 2010. China's apparent demand (excluding stock changes) slowed sharply from 2010, but given likely de-stocking, actual consumption was probably higher (China's copper imports picked up in the second half of the year suggesting an end to inventory withdrawal). In the OECD, strong demand growth at the start of the year turned sharply negative, and growth elsewhere also turned slightly negative.

High prices in recent years have taken their toll on consumption, as users substituted copper with other materials, such as aluminum and plastics, and lowered the copper content in applications. Copper prices have remained well above the costs of production because of continued problems at the mine supply level, including slower than expected ramp-up at new mines, technical problems at existing operations, declining ore grades, strikes, accidents and adverse weather. Many of
these incidents have occurred in Chile, which supplies 35 percent of the world’s mined copper. However, growth in new capacity globally is underway with numerous medium-sized projects expected online beginning in 2012, as well as the massive Oyu Tolgoi project in Mongolia which will add significant growth in 2013-14. Copper prices are expected to rebound from the recent drop as economic growth recovers and China re-stocks. Over the medium term, however, copper prices are expected to decline as demand moderates and new capacity pushes the market into modest surplus.

Aluminum

Aluminum prices, which traded close to copper back in 2000, languished the past decade despite demand growth twice as high copper. The main reason was China which expanded production capacity substantially and exported surplus aluminum to the global market—unlike for copper and other resources in which it is a significant importer. Robust aluminum demand is expected to continue, in part because of its lower relative price which helps it penetrate other markets such as copper, but mainly because of its light-weight, durable characteristics and multiple uses (in transport, construction, packaging and electrical). There are no resource constraints given the abundance of bauxite ore in the earth’s crust. However, the recent price decline has fallen into the smelting industry’s cost curve, where around 30 percent of the world’s producers lose money on a cash-cost basis, much of it China at plants that use outdated technologies. A strengthening renminbi will accelerate closure of this capacity which will be replaced with lower-cost and more efficient facilities. The construction of new capacity will generally be directed to locations with lower power cost advantages, such as the Middle East (power accounts for about 40
percent of aluminum's production cost). Most of the world's new state of the art capacity will be added in China, but large plants are also planned in India and Russia. Aluminum prices are expected to increase over the forecast period driven by higher production costs for power, carbon, and alumina.

**Nickel**

Nickel prices are down substantially from their 2007 highs, but remain volatile due to large stainless steel production cycles and stocking/destocking in China. Nickel prices recovered from their 2009 lows due to large growth in world stainless steel production in 2010 of nearly 25 percent, driven by China but there was also strong growth in Europe and Japan. Growth slowed to around 5 percent in 2011 on slowing output in China and in industrial countries. (About 70 percent of global nickel supply is used in the production of stainless steel.) Nickel prices came under pressure in 2011, despite falling inventories and positive demand gains, because of the expected surge in new nickel projects—the largest being in Brazil, Madagascar, New Caledonia, Papua New Guinea, but increases also expected in Australia, Canada and elsewhere. The new capacity from these and other projects will include traditional nickel sulphides, ferro-nickel and laterite high pressure acid leach (HPAL) projects, and Chinese nickel pig iron (NPI) producers. HPAL projects have had considerable technical problems and delays in recent years but are now scheduled to begin operation. The Chinese NPI industry developed as a result of the nickel price boom in the mid-2000s, with the import of nickel laterite ores from Indonesia and the Philippines. However, Indonesia has proposed developing its own NPI industry and is considering banning nickel ore exports from 2014, which could reduce China's output. NPI production is relatively expensive and may serve a longer-term cost-floor to prices. Nickel prices are expected to decline over the forecast period due to the substantial
supply additions in the coming years, and are likely to reflect production costs in the medium term.

**Metals consumption in China and India**

India, with its large population, is often cited as the next China in terms of consumption of commodities. Since 1990, China’s refined metal consumption (aluminum, copper, lead, nickel, tin and zinc) jumped 17-fold, and its share of world refined metal consumption grew from 5 percent to 41 percent. Its average rate of growth since 2000 was 15 percent p.a., while demand in the rest of the world was essentially unchanged. Unquestionably, China has been the major driver of metals demand and higher prices, as the country consumed large quantities of metals (and other primary resources) for construction, infrastructure, and manufacturing to significantly raise its level of income. Consider, for example, that China’s metal intensity (metal use per $1,000 of real GDP) was almost three times higher than the rest of the world back in 1990 and it reached almost 9 times in 2008.

It is expected that metals demand will slow over the next decade as economic growth slows and the country transitions from an export-led and investment-driven economy to a domestic consumption and services economy, and seeks to improve the environment and air quality. Still metals demand will remain robust due to urbanization (more high-rise construction), infrastructure needs, and moving up the value chain in manufacturing—all are resource intensive.
India’s share of world metals consumption has risen from 2 percent in 1990 to only 3 percent currently due to the very different structure of the economy, levels and direction of investment, sector growth trends, trade and policies. Moreover, its pace of metal demand growth has been only half that of China, and much closer to the pace of economic growth. Should India’s refined metal consumption grow at 15 percent p.a., it would take nearly two decades to overtake China’s current level consumption. Should that occur, it would present substantial challenges to the metals industry to supply these resources, similar or greater to the challenges the industry has faced the past decade. One possible impact is for even higher prices and pressures on the downstream sectors to innovate and substitute away from high-priced materials. India has ambitious plans for growth and has unveiled a significant power generation program. Thus, a key question is what other policy and structural changes would need to take place to have India’s metal consumption growth double for the next twenty years.
Agriculture

After reaching a peak in early 2011, prices for most agricultural commodities moderated with the index ending the year 19 percent below its February high (figure 27); food prices declined 14 percent. Yet, average agricultural prices (including food) were up 23 percent in 2011, and in real terms averaged the highest level since the aftermath of the 1970s oil crisis (figure 28). Most of the drivers of the post 2005 price increases are still in place (figure 31). Energy and fertilizer prices (key inputs to agricultural commodities) are still high, production of biofuels (currently accounting for the equivalent of 2.2 percent of global crude oil demand) is still growing, the US$ remains weak by historical standards, while most grain markets are experiencing low level of stocks. On the
other hand, investment fund activity is set to reach another record level—an estimated US$ 450 billion as of 4:2011 have been invested in commodities (figure 29). Though not expected to affect long term trends, such activity may induce higher price variability.

Following a brief period of relative stability during 2009, grain prices (especially maize and wheat), began rising in the summer of 2010 following weather-induced production shortfalls in Eastern Europe and Central Asia (figure 30). From June to December 2010, wheat prices increased by almost 120 percent, exceeding $300/ton and having since remained above that mark. Maize prices followed a similar pattern, increasing from $152/ton in June 2010 to $320/ton in April 2011, fluctuating around $300/ton since then.

While maize and wheat markets are tight by historical standards, the rice market appears to be well-supplied. For most of 2010, rice prices fluctuated within a narrow band of $450 to $500 per ton, far below the early-2008 peak of $900 per ton, but twice as much as its historical average. However, they gained momentum and increased

![Figure 29: Funds Invested in Commodities](image-url)
almost 30 percent between May and November 2011, mainly in response to two problems. First, the decision by the Thai government to sharply increase the intervention price to 15,000 baht/ton under the Paddy Rice Program. At the time of the announcement, this new intervention price was 65% higher than market price.

<table>
<thead>
<tr>
<th>Item</th>
<th>2001-05</th>
<th>2006-10</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural prices (nominal index, 2005 = 100)</td>
<td>89</td>
<td>147</td>
<td>66%</td>
</tr>
<tr>
<td>Grain/oilseed price volatility (stdev of log differences, monthly)</td>
<td>2.3</td>
<td>3.5</td>
<td>52%</td>
</tr>
<tr>
<td>Crude oil price (US$/barrel, nominal)</td>
<td>34</td>
<td>75</td>
<td>120%</td>
</tr>
<tr>
<td>Fertilizer prices (nominal index 2005 = 100)</td>
<td>72</td>
<td>208</td>
<td>172%</td>
</tr>
<tr>
<td>Exchange rates (US$ against a broad index of currencies)</td>
<td>119</td>
<td>104</td>
<td>-13%</td>
</tr>
<tr>
<td>Interest rates (10-year US Treasury bill)</td>
<td>4.7</td>
<td>4.1</td>
<td>-14%</td>
</tr>
<tr>
<td>Funds invested in commodities ($ billions)</td>
<td>30</td>
<td>230</td>
<td>667%</td>
</tr>
<tr>
<td>GDP growth (low and middle income countries, % p.a.)</td>
<td>5</td>
<td>5.8</td>
<td>16%</td>
</tr>
<tr>
<td>Industrial production (low and middle income countries, % p.a.)</td>
<td>6.3</td>
<td>7.1</td>
<td>13%</td>
</tr>
<tr>
<td>Stocks (total of maize, wheat, and rice, months of consumption)</td>
<td>3.2</td>
<td>2.5</td>
<td>-21%</td>
</tr>
<tr>
<td>Biofuel production (millions of barrels per day equivalent)</td>
<td>0.4</td>
<td>1.3</td>
<td>203%</td>
</tr>
<tr>
<td>Yields (average of wheat, maize, and rice, tons/hectare)</td>
<td>3.8</td>
<td>4</td>
<td>7%</td>
</tr>
<tr>
<td>Growth in yields (% change per annum, average)</td>
<td>1.4</td>
<td>1</td>
<td>-32%</td>
</tr>
<tr>
<td>Natural disasters (droughts, floods, and extreme temperatures)</td>
<td>374</td>
<td>441</td>
<td>18%</td>
</tr>
</tbody>
</table>

Figure 31: Most of the price-boom conditions are still in place
Under the program, growers and millers become eligible for a government loan (based on the intervention price) if they place their rice as collateral, stored at a government-certified facility. If, after the expiration of the loan, the market price is higher than the intervention price, the millers sell the rice and repay the loan. Otherwise, the millers can choose to default and the rice becomes property of the government. After the higher intervention price was announced, growers and millers began holding supplies of current off-season-crop paddy in order to participate in the program. Yet, the program is expected to have only limited long term impact as the stored rice will eventually find its way into the market. Second, on the weather front, some flooding in South East Asia appears to have damaged part of Thailand’s rice crop. Because Thailand accounts for 25 to 30 percent of world rice exports, the policy and weather developments may affect the world market. On the positive side, India’s decision to allow the export of non-Basmati rice along with good crop prospects elsewhere in the region, are likely to keep rice prices in check. Indeed, rice prices declined 5 percent in December 2011.

Edible oil Prices

*Edible oil prices* were relatively stable and slightly declining during 2011; the World Bank edible oils index averaged 246 (2005 = 100) in January 2011 and ended the year below 200. A weather-induced shortfall of soybean oil earlier in the year was balanced by better palm oil production—these two oils account for almost two thirds of global edible oil production. The diversion of oils for biodiesel production in Europe appears to be the largest demand-driven factor and is likely to support high prices in the near and medium term. Unlike grains, where demand tends to be relatively stable above a certain income threshold, per capita
demand for edible oils continues to rise even in high income countries, as a rising share of food consumed is prepared in professional establishments and in packaged form, both oil consuming processes (the income elasticity of edible oils is twice as high as that of grains).

**Beverage Prices**

*Beverage prices* averaged the year 14 percent higher than 2010, supported primarily by *coffee (arabica)* prices. During 2011 arabica prices averaged close to $6.00/kg, their highest nominal level. The rally reflected tight supply conditions, especially from Brazil, the world's dominant arabica supplier. *Cocoa* price increases earlier in the year reflected political instability in Côte d'Ivoire but supplies have recovered more recently, which combined with weak demand in Europe due to the crisis induced price declines towards year’s end—Côte d'Ivoire accounts for almost 40 percent of global supplies. The strength in *tea* prices reflects mainly East Africa supply shortages and strong demand, especially of high quality teas by Middle Eastern oil exporting countries.

**Cotton Market**

The *cotton market* experienced tight supplies earlier in the year as well, further exacerbated by an export ban imposed by India to protect its domestic textile industry. The shortfall, coupled with strong demand and low stocks, boosted prices above $5.00/kg in March 2011, effectively doubling within six months. That price level, however, turned out to be unsustainable and by August 2011 cotton prices were down to $2.50/kg on strong supplies and weakening demand. *Natural rubber* prices reached historic highs earlier due to weather-related supply disruptions in South-East Asia rubber producing countries (accounting for 90 percent of global production). However, following weakness in crude oil prices (a key input to
competing synthetic rubber) and weaker tire demand due to the economic downturn, rubber prices moderated and ended the year 46 percent below their February 2011 peak. *Timber* prices surged, especially Malaysian logs and to a lesser degree Cameroonian logs and Malaysian sawnwood. Strong demand following the Tohoku disaster in March 2011 contributed to the strength of timber prices.

**Fertilizer prices**

*Fertilizer prices* averaged 43 percent higher in 2011 than 2010 on strong demand for agricultural (especially grain and oilseed) production. Fertilizers are a key input to most agricultural commodities (especially grains) in value terms and, due to their tight relationship to natural gas prices, they tend to co-move with energy prices very closely—energy prices gained 25 percent in 2011.

**Outlook**

As supply conditions improve, agricultural prices are expected to decline 11 percent in 2012. Specifically, for 2012, wheat and maize prices are expected to average 9 and 12 percent lower than their 2011 levels while rice prices are anticipated to decline 6 percent. Soybean and palm oil prices are expected to be 16 and 20 percent lower, respectively. Beverage prices will experience declines as well (cocoa, coffee, and tea 11, 17, and 4 percent down, respectively). Cotton and rubber prices are expected to decline 30 percent, each.
A number of assumptions underpin the outlook. First, is that energy and fertilizer prices are projected to experience moderate declines. Second, it is assumed that the supply outlook during the 2011/12 crop year will improve. Third, no policy responses similar to the ones during 2008 will take place; if they do, they could always upset markets—the changes in rice policy in Thailand introduced in September 2012 is a case in point. On the other hand, the diversion of food commodities to the production of biofuels continues reached the equivalent of almost 2 million barrels per day of crude oil in 2011 (figure 32).

Nevertheless, there are signs of a slowdown in global biofuel production; preliminary estimates for 2011 indicate that it grew only marginally compared to the double digit growth rates during the past 10 years. The policy environment for biofuels begins to change as well. The US government let its ethanol tax credit expire as of January 1st 2012 and eliminated ethanol tariffs.

![Figure 32: Bio-fuels Production](image-url)
Yet, these policy changes are expected to have only a minimal impact on ethanol production in the US (and biofuel related corn production), since mandates requiring minimum amounts of gasoline to be supplied through biofuels are still in place. Moreover, with crude oil prices over $100 per barrel most biofuel production is likely to be profitable without any government intervention. Thus, the role of energy prices in determining agricultural prices (both as a cost component and diversion to biofuels) is expected to remain important. The USDA during its first assessment for the 2011/12 crop year (published in early May) projected that global food supply conditions will improve with production of maize expected to rise 6.4 percent over the previous crop year, wheat output higher by 3.3 percent, and rice by 1.4 percent. Maize stocks were expected to increase by 13 percent, while stocks for wheat were set to decline by 3 percent (no change was expected in rice stocks). During USDA's subsequent monthly assessments from June 2011 to January 2012, the outlook has been improving gradually, except for the large downward revision of maize stocks in June (figure 33).

While low stocks and poor crops have been the key factors underpinning the early 2011 price hikes, most of the post-2005 increase in agricultural prices can be explained by energy price increases. Energy is a particularly important determinant of agricultural prices and hence an important risk to agricultural prices. Energy feeds into food prices through three main channels. First, as a cost of production (mainly fuel to run agricultural machinery and transporting commodities to markets), second, indirectly through fertilizer and other chemical costs (e.g., nitrogen-based fertilizers are made directly from natural gas), and third, via competition from land to produce biofuels. Indeed, econometric evidence (presented below) ranks energy as the most important driver affecting prices of
Fundamentals and long term food price movements

To examine the role of fundamentals in determining food prices, a reduced-form econometric model was utilized and concluded that oil prices contributed about two third to the price increase of key food commodities between 2000-05 and 2006-10.
Exchange rate movements accounted for 23 percent while stocks were responsible for 8 percent.

Specifically, the following price determination model was utilized:

$$\log(P_t^i) = \mu + \beta_1 \log(S/U_{t-1}) + \beta_2 \log(P_t^{OIL}) + \beta_3 \log(XR_t) + \beta_4 \log(R_t) + \beta_5 \log(GDP_t) + \beta_6 \log(MUV_t) + \beta_7 t + \epsilon_t.$$ 

$P_t^i$ denotes the annual average nominal price of commodity $i$ (i = maize, wheat, rice, soybeans, and palm oil). $S/U_{t-1}$ denotes the lagged stock-to-use ratio, $P_t^{OIL}$ is the price of oil, $XR_t$ is the exchange rate, $R_t$ denotes the interest rate, $MUV_t$ is a measure of inflation, $GDP_t$ denotes global GDP, and $t$ is time trend. The $\beta_i$s are parameters to be estimated while $\epsilon_t$ is the error term.

The interpretation and signs of most parameters are straightforward. The stock-to-use ratio is expected to be negative, since a low $S/U$ ratio (associated with scarcity) leads to high prices while a high $S/U$ ratio (associated with surpluses) leads to low prices (Wright 2011).

To circumvent endogeneity, the $S/U$ ratio entered the regression in lagged form. The price of crude oil will have a positive impact on the prices of food commodities, since it is a key factor of production (Baffes 2007). The depreciation of the US dollar—the currency of choice for most international commodity transactions—strengthens demand (limits supply) from non-US$
commodity consumers (producers) thus increasing prices. An increase of the interest rate reduces commodity prices by (i) increasing the required rate of return on storage, (ii) changing expectations about aggregate economic activity, and (iii) stimulating demand; but, it can raise prices by reducing capital investment thereby reducing supplies. Thus, the effect of interest rate changes on commodity price is ambiguous. Because of the long time period under consideration, the Manufacture Unit Value (MUV) is used as an inflation proxy.

### Table Comm.3 Parameter estimates: 1960-2010

<table>
<thead>
<tr>
<th></th>
<th>Maize</th>
<th>Wheat</th>
<th>Rice</th>
<th>Soybeans</th>
<th>Palm oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant ((\alpha))</td>
<td>1.29</td>
<td>3.17***</td>
<td>6.41***</td>
<td>4.50***</td>
<td>4.25***</td>
</tr>
<tr>
<td>Stock-to-Use ratio ((SU_{t}))</td>
<td>(0.43***)</td>
<td>(0.57***)</td>
<td>(0.08)</td>
<td>(0.17**)</td>
<td>(-0.36**)</td>
</tr>
<tr>
<td>Oil price ((P_{t}))</td>
<td>(0.69***)</td>
<td>(0.18***)</td>
<td>(0.25**)</td>
<td>(0.31***)</td>
<td>(0.45***)</td>
</tr>
<tr>
<td>Exchange rate ((ER_{t}))</td>
<td>(0.02)</td>
<td>(0.01**)</td>
<td>(-2.83***)</td>
<td>(-1.31***)</td>
<td>(-1.99**)</td>
</tr>
<tr>
<td>Interest rate ((R_{t}))</td>
<td>(-0.05)</td>
<td>(0.05)</td>
<td>(0.34***)</td>
<td>(-0.70)</td>
<td>(-0.04)</td>
</tr>
<tr>
<td>Global GDP ((GDP_{t}))</td>
<td>(-0.01)</td>
<td>(0.17)</td>
<td>(-0.05**)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Inflation (MUV)</td>
<td>(0.04***)</td>
<td>(0.03)</td>
<td>(-0.62)</td>
<td>(-0.01)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Trend x 10 t (t)</td>
<td>(-1.76***)</td>
<td>(-0.65)</td>
<td>(-0.76)</td>
<td>(-1.14*)</td>
<td>(-2.17**)</td>
</tr>
<tr>
<td>Adjusted-(R^2)</td>
<td>(0.87)</td>
<td>(0.41)</td>
<td>(0.76)</td>
<td>(0.84)</td>
<td>(0.62)</td>
</tr>
<tr>
<td>MIV</td>
<td>1.03</td>
<td>1.10</td>
<td>1.63</td>
<td>1.27</td>
<td>1.24</td>
</tr>
<tr>
<td>MIV</td>
<td>(-0.90***)</td>
<td>(-5.52***)</td>
<td>(-3.93***)</td>
<td>(-6.84***)</td>
<td>(-4.34**)</td>
</tr>
</tbody>
</table>

**Note:** The numbers in parentheses denote absolute \(t\)-ratios. DW is the Durbin-Watson statistic of serial correlation and ADF denotes the Augmented Dickey-Fuller statistic for unit roots (Dickey and Fuller 1979). Asterisks indicate parameter estimates different from zero at the 1\(\%\), 5\(\%\), and 10\(\%\) levels of significance, respectively.

**Source:** Baffes (2011).

**Figure 34: Parameter estimates: 1960 - 2010**

Furthermore, instead of deflating each price series, we used the deflator as an explanatory variable in order to relax the homogeneity restriction and obtain a direct estimate the effect of inflation. Lastly, the time trend is expected to capture
the effects of technological change, which for most agricultural commodity prices is expected to be negative.

Figure 34 reports parameter estimates for the 1960-2010 period for five food commodities. More than half of the parameter estimates are significantly different from zero, with an average adjusted-$R^2$ of 0.80 and a stationary error term (implying co-integration), confirming that the model performed well. A number of interesting results emerge from the analysis. First, the S/U ratio estimates are negative and all but one case significantly different from zero. Second, the parameter estimate of the oil price confirms that energy plays a key role in food price movements. In fact, the parameter estimate of the oil price is highly significant in all five cases. Third, with the exception of maize, exchange rate has a strong impact on food prices with the respective elasticity exceeding unity in three cases—the estimate of the exchange for maize (effectively zero) and rice (the highest among the 5 prices) most likely reflects that fact that the US is a dominant player in the global maize market but not a player in the rice market. Interest rate movements do not matter, except for rice. Income has no impact in all prices but rice (albeit negative).

![Figure 35: Gap between actual and model generated prices: Wheat 1965 - 2005](source: Baffes (2011))
This result indicates that, despite what has been reported in the literature, increases of global GDP are not associated with food prices increases. Indeed, per capita grain consumption in India and China has declined or flattened (these two countries are often mentioned as having contributed to food price increases because of their changing diets and high incomes). Price of manufactures (proxy for inflation) turned out not to be significant (with the exception in maize). Lastly, the parameter estimate of the time trend is negative as expected, but significantly different from zero in maize, wheat, and palm oil (not rice and soybeans). Estimates place the effect of technical change on prices to about 1 percent per annum, very close to the average 1.3 percent estimated here.

What portion of the post-2005 food price movements is explained by the fundamentals? The model was re-estimated by excluding the boom period (i.e., reduced the sample to 1960-2005). Then, based on these estimates, price levels of all five commodities were simulated for the post-2005 period. During the boom years of 2008-10, in all 5 commodities actual prices were much higher than the forecast prices—ranging from 35 percent (wheat in 2009) and 130 percent (rice in 2009). During 2008-10, prices were 70 percent higher than what the model forecasts. It is worth noting that since 1965, the highest model-generated gaps were in 1974 (+37 percent) and 1990 (-20 percent).
Figure 35 depicts the out-of-sample forecast for the price of wheat. Based on the parameter estimates of the full sample model, fitted prices were calculated. The gap during 2008-10 was eliminated, implying that the addition of just 5 observations (the boom years) eliminates the model-generated error (figure 36).

Finally, using the parameter estimates of the model, the relative contribution of each explanatory variable to price changes for the 2000-05 to 2006-10 was calculated. The unexplained portion of the price changes during this period was 36 percent. Of the remaining 64 percent, oil’s contribution was more than two thirds, followed by exchange rate movements (23 percent) and stocks (8 percent).
The contribution of the remaining variables was negligible. Two key conclusions are reached. First, econometric evidence confirms that fundamentals explain most of the food price variation, including the 2005-10 boom years. Second, oil prices matter the most while from the macro perspective exchange rates movements matter as well; interest rates and income growth do not seem to have a long term impact on food prices.

Financial Markets Facing Tough Times

Contagion from the Euro area debt crisis

Contagion from the Euro area debt crisis to developing countries has emerged
Emerging markets have been engulfed by a wave of market volatility that had started with the August downgrade of U.S. sovereign ratings and sharply heightened with the increased uncertainty related to the resolution of the European debt crisis. In contrast with earlier episodes of market turmoil centered around high-spread European economies, this time contagion from high-income countries affected the risk premia, yields, stock markets, capital flows and currencies of developing countries.

Developing-country equity markets
Developing-country equity markets experienced significant sell-offs later in 2011...
As of early-January 2012, emerging equity markets (as measured by MSCI index) dropped 8.5 percent since the end of July (figure 38). All developing regions experienced price declines—although these were much more marked (around 20
percent) in Eastern Europe. Among the worst country declines were Argentina, Brazil, Egypt, India, Serbia, Bulgaria, Ukraine, and Vietnam. In 2011, developing-country equities have fallen 15.6 percent compared with an 8.4 percent drop for mature markets. Emerging market equity and fixed income funds experienced a sudden reversal of the positive inflows trend since early 2009. With many developing countries in a sweet spot both cyclically and structurally, the flows into these funds had gone up consistently since 2009, reaching a record volume in 2010.

However, the turmoil of the second half of 2011 caused these flows to reverse. EM equity funds had registered an outflow of $48.5 billion in 2011—in sharp contrast to the net inflow of $97 billion for all of 2010. The reversal was less sharp for emerging market fixed-income funds, which posted net inflows of $17.3 billion in 2011. Foreign selling was particularly sharp in Latin America, with Brazil posting large outflows.

![Figure 38: Emerging market equities fall by more than developed country equities](image)

**Bond spreads have widened rapidly**

Reflecting this reversal in fortunes, developing-country composite spreads (EMBIG) widened by 152 basis points (bps) between July and early January.
(they had been broadly stable at around 310 bps since late 2009) (figure 39). The bulk of the deterioration in spreads occurred in the second half of September, with the EMBIG spread reaching a peak of 490 bps on October 4th—206 bps higher than July 2011. Spreads have narrowed after October 4th amid signs that EU policy action to address banking sector vulnerabilities would be forthcoming, but remained volatile reflecting the uncertainties about the size, funding and implementation of the Euro-zone rescue plan. By early-January, spreads were about 54 bps lower than their peak on October 4th.

Although significant, the deterioration of financial conditions in 2011 is much less marked than in the fall of 2008, when developing-country sovereign bond spreads widened by 385 bps and stock indexes dropped 40 percent between mid-September and mid-December 2008.

**Gross capital flows to developing countries have been weak since September**

The increased turmoil and risk aversion that drove the hike in spreads, was reflected in sharply weaker capital flows to developing countries in the second half of 2011. Gross capital flows (international bond issuance, cross-border
syndicated bank loans and equity placement) totaled only $170 billion between July and December 2011, 55 percent less than of $309 billion received during the like period of 2010 (figure 40). Equity issuance and bond flows were especially weak between September and December. The volume of equity issuance was 80 percent down at $25 billion compared to the same period last year that had the record breaking level of equity issuance particularly through initial public offerings.

After a mere $2.6 billion in September—the lowest monthly level since December 2008, bond flows recovered slightly after October, following issuances by Venezuela ($6.4 billion), Russia ($2.4 billion), Indonesia and Turkey (both $2 billion). Bond issuance was strong in the first weeks of 2012 as January tends to be one of the busiest months for bond issuance. Brazil, Chile, Mexico, and Philippines issued a total of $6.6 billion combined in the first week of the month.

International syndicated bank loans, on the other hand, held up well even after the increased volatility, a reflection of several large loans to companies from natural
resource related sectors in Russia and Mexico, the banking sector in Turkey and infrastructure sectors in Brazil and South Africa. The relative resilience of syndicated bank loans can be in part explained by the time that syndications take to be completed. In fact the decline in bank-lending was more gradual following the 2008 crisis compared to bond and equity flows.

As a result, gross capital flows in 2011 totaled $450 billion, 9.6 percent below the 2010 level of $498 billion reflecting the robust flows during the first half of the year.

Developing countries are vulnerable

Developing countries are vulnerable to mounting funding pressures in the European global financial markets.

The volatility in high-income financial markets and the possibility that the situation deteriorates further represents a serious risk for developing.

From a finance perspective, the main transmission channels from the ongoing crisis in high-income countries to developing countries have been through direct linkages with distressed high-income European banks, and more generally through tightening up of global financial conditions that constrained developing-country access to high-income debt (bank and bond) markets. If conditions deteriorate further, FDI inflows might also contract spreading the negative effects of the crisis both to middle and low income countries.

Risks stemming from developing-country exposure

Risks stemming from developing-country exposure to fragile high-income
European banks...

Given the fragile state of high-income country banks, their extensive operations in some developing countries and regions are an important channel of contagion. As high-income European banks are forced through losses in their portfolio and regulatory changes to rebuild their capital stock, they are now engaged in deleveraging—either by calling or not renewing loans (thereby reducing loans to capital ratios); or by tightened credit conditions or selling assets or issuing new equity (thereby raising capital).

Starting in the early 2000s, European banks rapidly grew their exposure to developing countries, and now have $2.4 trillion in outstanding foreign claims on actors within these countries. The bulk of these claims lie in Latin America & the Caribbean ($861 billion or 16 percent of GDP) and Europe & Central Asia ($633 billion or 21 percent of GDP) regions. In several Eastern European countries (Latvia, Romania, Bulgaria, Lithuania and Albania) as well as countries from other regions (Mozambique and Chile), these claims are quite significant as
they are equal to more-than 25 percent of GDP (figure 41).

European banks operate in developing countries also through their local subsidiaries and account for considerable shares of some countries' banking assets (figure 42). In Latin American countries exposures are concentrated among Spanish banks, which own over 25 percent of bank assets in Mexico and Chile. In Europe and Central Asia, Austrian and Greek banks have played a significant role in Albania, Bulgaria and Romania, while the country source of holdings in other countries are more diversified. Portuguese banks account for almost one-third of banking assets in Angola and Mozambique.

...with the nature of the exposure determining its impact on domestic credit...

Despite their significant presence and high levels of foreign claims in Latin America, Spanish banks are mostly decentralized in their cross-border operation with independently managed affiliates in the region. Their claims are mostly in local currency/locally funded. Indeed, average loan to deposit ratios in the region are at or below 100%, with few exceptions including Chile (107%).
Moreover, some countries (e.g. Brazil and Mexico) have regulations limiting the amount of inter-company loans between parent and daughter banks and limiting the ability of parent banks to reduce daughter bank's capital below prudential levels.

As a result, the financial systems in these countries would not be excessively exposed to a sharp reduction of inflows of funding from European banks (except through the trade finance channel). As long as this kind of deleveraging occurs gradually, domestic banks and non-European banks should be able to take up the slack – as appears to be taking place in Brazil.

In contrast, European banks operating in most of the Eastern European countries have relied heavily upon cross-border lending from their parents to support their loan portfolios, with loan-to-deposit ratios well over 100 percent in several countries: Latvia (240%), Lithuania (129%), Romania (127%) and Russia (121%). In addition, large portions of cross-border lending was short-term that can be easily reduced by simply not being rolled-over or renewed. As a result, these countries are extremely vulnerable to a cut off of lending by European banks. So far, deleveraging in the region has been orderly. In a worrying development, however, Austrian bank supervisors have instructed Austrian banks to limit future lending in their central and eastern European subsidiaries, while several high-income European banks have independently announced their intention to reduce operations in Europe and Central Asia.

Arguably, markets are already factoring in the risks from these connections. During the recent episode of elevated turmoil, developing-country CDS spreads rose most among those countries with close banking ties with troubled high-
income European banks, for example, the spreads in Ukraine, Romania and Bulgaria rose by 422 bps, 231 bps and 203 bps, respectively versus an overall average for developing countries of 114 basis points. \textit{...but the risk of rapid sales of bank assets is more widespread.}

European banks have been trying to reduce exposure and/or raise capital also by selling stakes in developing country banks or fully-owned subsidiaries. The need to find a buyer forces Euro-area banks to disinvest from some of the better markets where they can have profitable exits. For example, Greek banks have started to sell Turkish bank assets.\textsuperscript{3} Any of such sales represent FDI outflows when the buyer is not foreign but local, which was the case in one of the sales in Turkey.

\textbf{Developing countries with relatively high private debt levels}

\textbf{Developing countries with relatively high private debt levels would be most vulnerable to a generalized tightening of financial conditions}

The recent market turbulence has already led to declines in capital flows to developing countries and substantial losses to developing-country equity markets. Should financial conditions deteriorate sharply, countries with high external financing needs (current account projections and amortization of external debt) would be most vulnerable to sudden reversals in capital flows, a drying up of credits or substantial increases in borrowing costs.

Many developing countries remain vulnerable to deterioration in credit conditions. Overall, the external financing needs of developing countries have risen slightly
since the 2008/9 financial crisis from an ex ante estimate of $1.2 trillion (7.6 percent of GDP) in 2009 to $1.3 trillion (7.9 percent of GDP) in 2012. All regions except South Asia have reduced their external financing needs as a share of GDP since 2008. South Asia’s estimated external financing requirements have increased from 5.8 percent to 8.4 percent mainly because of a sharp rise in India’s external debt in 2011.

Nevertheless, ex ante external financing needs are very high for some countries and in some regions (figure FIN.6). As in the 2008/9 crisis, the Eastern Europe and Central Asia region remains the most vulnerable developing region with external financing need in the order of 17 percent of GDP. Several countries in the region have high current account deficits as well as private debt coming due in 2012.

Among countries with access to international markets, estimated ex ante financing requirements in 2012 exceed 10 percent of GDP in 30 developing countries (Figure 44). For many, the financing is unlikely to pose a problem, coming in the relatively stable form of FDI or remittances. For others, however, a significant proportion will have to be financed from historically more volatile sources (short-term debt, new bond issuance, equity inflows).

If international financial market conditions deteriorate significantly, such financing might become difficult to maintain. Some 25 developing countries have short-term debt and long-term debt repayment obligations equal to 5 or more percent of their GDP in 2012. Should financing conditions tighten and these debts cannot be refinanced, these countries could be forced to cut sharply into reserves or domestic demand in order to make ends meet. Indeed, following the sharp contraction in
capital flows in 2008 and 2009, many developing countries were forced to close external financing gaps through current account adjustments, increased aid or depletion of foreign exchange reserves.

Risks are particularly acute for countries like Turkey that combine large current account deficits, high short-term debt ratios and low reserves. Indeed, Turkey's current account deficit in 2011 is estimated to be six times larger than its net FDI flows in 2011, and its short-term debt represents 80 percent of its reserves (which have been falling in recent months and already represent less than 4 months of import cover).

In a similar fashion but to a lesser extent, Belarus and Montenegro are also vulnerable to a freezing-up of global credit. Other countries have also significant vulnerabilities. Jamaica, for example, is at risk since it finances its current account deficit with flows other than FDI, which tend to be volatile. High levels of short-term debt to reserves ratios may put countries such as Chile, Albania and Egypt also at risk of roll-over despite healthy current account balances (figure 45).

<table>
<thead>
<tr>
<th>Country</th>
<th>External Financing Needs</th>
<th>Projections for 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lebanon</td>
<td>20.9</td>
<td>10.5</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>16.3</td>
<td>7.6</td>
</tr>
<tr>
<td>Albania</td>
<td>11.7</td>
<td>5.7</td>
</tr>
<tr>
<td>Jamaica</td>
<td>9.8</td>
<td>4.7</td>
</tr>
<tr>
<td>Georgia</td>
<td>12.7</td>
<td>6.1</td>
</tr>
<tr>
<td>Turkey</td>
<td>9.8</td>
<td>4.4</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>14.0</td>
<td>7.2</td>
</tr>
<tr>
<td>Greece</td>
<td>10.6</td>
<td>5.2</td>
</tr>
<tr>
<td>Belarus</td>
<td>10.5</td>
<td>5.1</td>
</tr>
<tr>
<td>Romania</td>
<td>4.5</td>
<td>2.3</td>
</tr>
<tr>
<td>Moldova</td>
<td>12.1</td>
<td>5.4</td>
</tr>
<tr>
<td>Latvia</td>
<td>0.8</td>
<td>0.4</td>
</tr>
<tr>
<td>Armenia</td>
<td>12.7</td>
<td>6.0</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>2.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Lithuania</td>
<td>2.3</td>
<td>1.0</td>
</tr>
<tr>
<td>Ukraine</td>
<td>5.4</td>
<td>2.5</td>
</tr>
<tr>
<td>Panama</td>
<td>12.3</td>
<td>6.7</td>
</tr>
<tr>
<td>Mauritania</td>
<td>11.2</td>
<td>5.8</td>
</tr>
<tr>
<td>Macedonia, FYR</td>
<td>5.1</td>
<td>2.4</td>
</tr>
<tr>
<td>Jordan</td>
<td>8.5</td>
<td>4.0</td>
</tr>
<tr>
<td>Tanzania</td>
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<td>4.0</td>
</tr>
<tr>
<td>El Salvador</td>
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<td>2.0</td>
</tr>
<tr>
<td>Dominican Republic</td>
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<td>4.0</td>
</tr>
<tr>
<td>Vanuatu</td>
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<tr>
<td>Vietnam</td>
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</tr>
<tr>
<td>Chile</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td>Kenya Republic</td>
<td>6.9</td>
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<tr>
<td>Ghana</td>
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<td>Tunisia</td>
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<td>3.4</td>
</tr>
<tr>
<td>Peru</td>
<td>2.7</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Developing countries' external financing needs are defined as the current-account deficit (assumed to be a constant at its 2011 level as a percent of GDP) plus scheduled principal payments on private debt (based on information from the World Bank's Debtor Reporting System and Bank of International Settlements). Source: World Bank.
The sensitivity of short-term finance to changes in financing conditions could pose problems for trade in China for example, as much as 75 percent of short-term debt is reported to be for trade-finance. Since 2010, there has been a 20 percent increase in short-term debt taken out by developing countries — with the total now equal to $1.1 billion or 4.8 percent of developing-country GDP—or 15.7 percent of total developing-country exports. Should a financial crisis cause trade
finance to freeze up as banks seek to deleverage (as it is reported to have happened for a short while in 2008) it could have serious consequences for global trade.

**Foreign currency reserve accumulation has already declined sharply**

Foreign currency reserve accumulation has already declined sharply, even reversed in several developing countries

Large capital outflows in the second half of 2011 and ensuing currency fluctuations prompted several central banks to sell-off reserves (figure 46). For example, in the first half of October, Turkey’s central bank intervened directly, selling an estimated $0.5 billion of reserves, bringing the average monthly decline in reserves since end-July to $2.7 billion. Turkey’s reserves currently are at $84.8 billion, equivalent less than 4 months merchandise import-cover. Given recent reserve sell-offs, South Africa faces similar exposures, but Brazil, Russia and India’s larger reserve-buffers offer more scope for extended currency support.

![Figure 47: Possible resurgence in NPLs with slower growth...a danger to banking](image1)

![Figure 48: International Capital Flows fell in 2011](image2)
Following the strong domestic credit growth since the crisis, domestic banking sectors may also be vulnerable to a sharp increase in non-performing loans in the event of a slowdown in growth.

Although non-performing loans (NPLs) remain low in most developing regions so far, they could shoot up in the event of a sharp slowdown in growth (figure 47). Given rapid credit expansion in recent years (loans to GDP ratios increased by more than 10 percentage points between 2005 and 2011 in several countries), commercial banks could see a marked deterioration in loan performance in the face of slowing growth, heightened risk aversion and restricted access to finance. In some countries, NPLs and provisioning are already an issue. The share of NPLs in outstanding bank lending in the Europe and Central Asia region lofted to 12 percent in 2010 from 3.8 percent in 2007. Available data indicates that NPL ratios have continued to deteriorate in 2011 in Kazakhstan (32.8%) and Romania (14.2%).

With the possibility of further economic slowdown, the need for macro-prudential reforms and stress tests have risen to ensure that banks are best placed to deal with deterioration in credit quality and much tighter liquidity conditions.

Some countries have undertaken steps to slow down the credit growth with limited success. China, for example, has raised interest rates and increased the Required Reserve Ratios (RRR) five times in 2011. As a result, the credit growth in China has eased significantly but remains high compared to previous credit booms and busts. Similarly, credit growth in Brazil and Turkey has remained buoyant in 2011 despite the RRR hikes. Unlike China, however, Turkey lowered its key
policy rate to deter volatile international portfolio flows and stimulate economic growth.

More recently concerns about the deteriorating global outlook and its potential adverse impact on output growth have caused a shift in policies. China, for example, cut its RRR by 0.5 percentage point in December, the first such cut since December 2008.

International capital flows to developing countries

International capital flows to developing countries are expected to decline slightly in 2011 after a strong rebound in 2010

Net private capital flows (earlier data referred to gross flows) to developing countries are estimated to have declined to $0.95 trillion (4.3 percent of GDP) in 2011 from $1.1 trillion (5.4 percent of GDP) in 2010 (figure 48). The increased global market volatility of the second half of 2011, and associated equity-market sell-offs caused portfolio equity flows to decline by 60 percent, from $128.4 billion in 2010 to an estimated $51.4 billion in 2011. Overall, short-term flows for the year as a whole also declined despite their strong performance in the first half of the year – partly because of slower trade growth (and therefore less trade finance) in the second quarter due to disruptions emanating from Tohoku. In
addition, prudential measures taken by developing countries (such as China) to limit the risk associated with short-term flows also played a role. This year's fall in short-term debt flows is in sharp contrast with last year's surge, when these flows led the recovery in net capital inflows.

**FDI inflows to developing countries continued to increase modestly in 2011**

Foreign direct investment (FDI) inflows to developing countries rose by an estimated 10.6 percent in nominal terms, reaching $555 billion (2.5 percent of GDP) in 2011 (figure FIN.11). Most of the gains in FDI came in the first half of the year, with flows slowing in the third quarter. The largest increase was in the Latin America and Caribbean region, which attracted investment due to relatively robust growth, rich natural resources and a large consumer base. The East Asia Pacific and South Asia regions remain attractive destinations for multinationals, with investors drawn to the fast growing regional economies of China, India, Indonesia and Malaysia. FDI inflows declined in other regions but for different reasons. The fall in FDI inflows in the Eastern Europe and Central Asia region was mainly driven by the economic problems in Europe, which weighed both on the capacity of high-income European firms to invest and on the attractiveness of developing countries in the region as destinations for FDI due to reduced growth prospects. Inflows to the Middle East and North Africa region suffered because of political turmoil associated with the Arab Spring, while the decline in Sub Saharan Africa is mainly due to net dis-investment from Angola. Despite the nominal increase, however, FDI inflows as a percent of GDP were flat or declined (figure 49).
Prospects:

**Uncertain in the short-term but strong in the medium-term**

The outlook for 2012 has become more challenging as the world economy has entered a very difficult period. The likelihood that the sovereign debt crisis in Europe deteriorates further resulting in a freezing up of capital markets and a global crisis similar in magnitude to the Lehman's crisis remains very real. The increased risk-aversion among global investors has reduced global financial flows including those to developing countries since mid 2011. The actual impact of the current turmoil on developing countries, in terms of international financial flows and the real economy, are not yet fully apparent but suggest a generalized slowing in global growth (see the main text) and reduced capital flows.
Increased risk aversion and banking-sector deleveraging are expected to continue cutting into capital inflows to developing countries in early 2012. As a result, net private debt and equity flows, which comprise net debt flows (incoming disbursements less principal repayments) and net equity flows (FDI and portfolio inflows net of disinvestments) are projected to decline further by 18 percent to $0.8 Trillion (3.3 percent of GDP) in 2012, with sharp contraction in cross-border debt flows. Even FDI inflows to developing countries are expected to level out by 6 percent next year because of the uncertainly in global financial markets.

The projected decline in FDI inflows is relatively small compared to the 40 percent contraction of 2009. The impact on capital flows is expected to be
disproportionately higher for the developing Europe and Central Asia region, whose economies are more closely tied to those in high-income Europe.

Under the assumption that the ongoing turbulence in Europe will be resolved to market's satisfaction towards the end of 2012, net capital flows to developing countries are expected to have a sharp rebound in 2013 with the growth in global economy, reaching $1.02 trillion in 2013 (3.7 percent of GDP) (figure 50). By 2013, all flows are expected to increase. Bond issuance is expected to level down slightly as bank lending picks up the pace supported by South-South flows.

The rebound should be supported by the fact that conditions that underpin the capital flows to developing countries remain strong. Emerging markets entered 2012 with an improved risk profile, higher growth prospects and higher interest rates than in high-income countries. Despite the recent downward revision, developing-country growth (between 5 and 6 percent) is expected to continue to be much higher than in developed countries (around 2 percent) in the medium-term.

At the same time, credit quality for developing countries has been improving, and the gap between mature and emerging markets sovereigns is narrowing (figure 51). The wave of sovereign rating downgrades across Europe, the United States, and Japan stands in sharp contrast with the improved creditworthiness in emerging markets as measured by sovereign credit ratings. The ratio of emerging market rating upgrades to downgrades is six to one this year. Since the 2008 financial crisis, 47 developing countries have received 117 upgrades by major rating agencies, while the last rating upgrade for a developed country occurred in 2007,
when Japan’s sovereign debt was upgraded. Many developing countries currently have a positive outlook assigned to their sovereign debt, signaling that additional upgrades are possible.

Table FIN.2: Net capital flows to developing countries ($ billions)

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011c</th>
<th>2012f</th>
<th>2013f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current account balance (as % of GDP)</td>
<td>194.8</td>
<td>194.7</td>
<td>194.5</td>
<td>194.7</td>
<td>224.1</td>
<td>340.0</td>
<td>494.6</td>
<td>594.6</td>
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<tr>
<td>Net private and official flows</td>
<td>106.5</td>
<td>1129.7</td>
<td>830.5</td>
<td>675.8</td>
<td>1126.8</td>
<td>1064.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net private inflows (equity-does)</td>
<td>735.8</td>
<td>1428.2</td>
<td>849.8</td>
<td>733.7</td>
<td>1053.5</td>
<td>954.4</td>
<td>807.4</td>
<td>1014.4</td>
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<tr>
<td>Net equity inflows</td>
<td>106.2</td>
<td>667.1</td>
<td>707.5</td>
<td>608.7</td>
<td>629.9</td>
<td>693.2</td>
<td>783.7</td>
<td>967.1</td>
</tr>
<tr>
<td>Net FDI inflows</td>
<td>38.5</td>
<td>334.1</td>
<td>224.1</td>
<td>460.0</td>
<td>561.5</td>
<td>534.8</td>
<td>521.5</td>
<td>626.6</td>
</tr>
<tr>
<td>Net portfolio equity inflows</td>
<td>10.7</td>
<td>133.0</td>
<td>233.4</td>
<td>108.9</td>
<td>128.3</td>
<td>51.4</td>
<td>62.1</td>
<td>36.6</td>
</tr>
<tr>
<td>Net debt flows</td>
<td>101.2</td>
<td>106.6</td>
<td>279.6</td>
<td>161.2</td>
<td>149.2</td>
<td>67.7</td>
<td>80.9</td>
<td>76.6</td>
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<tr>
<td>Official creditors</td>
<td>13.0</td>
<td>1.5</td>
<td>20.5</td>
<td>23.4</td>
<td>20.5</td>
<td>4.6</td>
<td>3.3</td>
<td>1.1</td>
</tr>
<tr>
<td>World Bank</td>
<td>8.9</td>
<td>2</td>
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<td>2011c</td>
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Figure 52: Net Capital flows to developing countries

Notes
1. The European banking sector remains under a significant funding pressure (see main text) as concerns about exposure to stressed sovereign debt have affected their liquidity. They were squeezed out of the USD interbank market as US money market funds reduced their exposure to banks in Euro area in late 2011.
Also, European interbank lending has also been deteriorating, as Euribor-Eonia spreads have been rising to their beginning of 2008 crisis (September 15th 2008) levels.

2. Foreign claims by BIS reporting banks comprise cross-border claim, local claims of foreign affiliates in foreign currency, and local claims of foreign affiliates in local currency.

3. According to Bloomberg news on December 9th 2011, EU lenders including Deutsche Bank AG and France's Societe Generale SA have announced plans to shed more than $1 trillion (€750bn) of assets over the next two years to bolster capital. On top of selling loans, the banks put at least 50 businesses up for sale in markets spanning the globe.

4. Developing countries' external financing needs, are defined as the current-account deficit (assumed to be a constant at its 2011 level as a percent of GDP) plus scheduled principal payments on private debt (based on information from the World Bank's Debtor Reporting System).

5. Countries with the debt repayment to GDP ratios that are less than three percent are excluded from this list. These countries are mostly aid dependent and their vulnerabilities are mostly related with official flows.

6. The capital inflows numbers are revised up for 2010. Our June estimate for total inflows was $930 billion, compared to $1129 billion (almost the same levels of 2007). Major revision in ST debt for 2010: from $120 billion to $268 billion, mostly because of the upward revisions for China and India.
How did developing countries close the external financing gap in 2009?

When the global financial crisis hit in September 2008, developing countries’ external financing needs (current account projections and amortization of external debt) for 2009 were projected to be around $1.2 trillion. With a projected sharp retrenchment in capital flows for 2009, the ex-ante external financing gap was estimated in the order of $352 billion. Financing gaps are ex-ante notions and ex-post, can be closed through the combination of reduced spending, official flows, and running down the reserves.

As expected, high external financing needs in a time of sharp retrenchment in capital flows (40 percent actual decline in 2009) led to significant current account adjustments and slower growth in several developing countries in 2009. Current account adjustments reduced the ex-post gap by $140 billion. Current account balances in deficit countries were almost halved from -$283 billion to -$128 billion in 2009. In particular, in several ECA countries, deficits narrowed by more than 50 percent. Net private capital flows (inflows-outflows-debt repayments/redemptions of debt) were $152 billion higher than initial projections, while more-than doubled official flows and reserves depletion accounted for the remainder. An important factor that helped developing countries with their 2009 external financing needs was official lending (including assistance from the IMF), which jumped to $28 billion immediately after the crisis in 2008, and more than doubled in 2009, reaching $70 billion. The World Bank Group tripled its lending to $21 billion. Between September 2008 and February 2010, more than 20 countries entered agreements with the IMF, with four of the stand-by agreements (Romania, Pakistan, Hungary and Ukraine) larger than $10 billion. The IMF also introduced a new flexible credit line that provided precautionary arrangements, but there have
been no draws so far. Lending from other multilaterals as well as bilateral loans also increased in response to the crisis.

Some countries Croatia, Hungary, and Poland that were classified as developing countries for the earlier calculation are now classified as developed countries by the World Bank. The calculations referred here are based on 2008 classifications; hence the data might differ from the current capital flows tables.

![Figure 53: Financing Gaps were closed through Current Account Adjustment](image)

**Sharp increase in short-term debt**

Short-term debt in the developing world is highly concentrated: 15 middle-income countries account for 86 percent. Most of the borrowing is done by banks and corporations to finance their growing trade as firms contracted short-term loans to finance imports and prepay for exports. For example, trade finance accounted for almost 75 percent of short-term debt in 2011 in China and almost all of India’s short-term debt. Short-term debt flows have exhibited higher volatility than medium- and long-term flows, particularly during crises.
During the Asian and 2008 financial crises, for example, short-term debt fell more sharply in developing countries than did other flows. One of the reasons is that banks can reduce their exposure quickly through short term debt, which can be simply not renewed. The other reason may be that in times of crisis lenders tend to shift their portfolios to more creditworthy borrowers, which are in a better position to serve longer-maturity loans.

Some part of the decline in short-term debt following a crisis might be also due to demand factors, especially for trade credit portion of it. Several studies suggest that the sharp decline in trade volumes observed in 2008/9 caused trade finance to decline and not the reverse.²

But others have argued that a more comprehensive analysis of the financial sector’s role in international trade including the concept of a financial accelerator shows how export flows are actually significantly affected by financial shocks.

China, India, Brazil, Turkey, Russia, Indonesia, Mexico, Malaysia, Chile, Romania, Thailand, South Africa, Peru, Philippines, and Argentina¹.

**Inflation Pressure**

Inflation has fallen in the past year, on average, in both high-income OECD and developing countries. Inflation has declined rapidly in most of the high-income countries, while outcomes have been more varied in developing countries that nevertheless show an overall, declining trend.

OECD: rapid demand-altering effects (fuels); lack of pass-through.

Inflation is falling in the developed world. From April to November 2011, headline inflation in the G-5 countries dipped by nearly 2 percentage points (figure 54), while the earlier, rapid pass through of headline inflation to so-called "core prices" (which exclude food and fuels) appears to be abating (figure 55). Among the G-5 countries, the United States and Germany achieved the largest decline (2 pts) in headline inflation since the first quarter of 2011; and other Euro Area countries have seen a substantial falloff of about 1.5 points, accentuated by the onset of sluggish growth there and a still fairly-strong euro to that time. Japan's initial low levels of inflation means its delta in consumer prices is small. Still, the shift to deflation in Japan is reflective of the slow-build-up in activity since the Tohoku disaster of March 2011.

The decline in inflation has been driven by real- and financial after effects of the first financial crisis, and importantly by related developments in commodity markets. Producers and exporters of electronics and machinery have offered substantial price discounts linked to the massive buildup of inventories during the global growth downturn of 2009. This latter effect echoes the increasing importance of global factors, particularly the expansion of manufacturing production in East Asia, in determining inflation in the rich countries.

—

Moreover, commodity price shocks have had a major, sustained impact on inflation during this period among the industrialized economies. In particular, international oil prices surged to near-record highs following the cut-off of Libyan crude oil in 2011, driving both increases in fuels prices and in food prices, the latter due to higher transport costs, increased prices for fertilizers, and reduced supply—as biofuel mandates shifted land usage towards the production of ethanol.  

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The direct effects of the hike in oil prices are seen quickly at the petrol pump. Demand for fuels soften with some lag, but also with substantial weight, with a shift toward e.g. public transport, improved efficiency automobiles, or "self-propelled" modes to getting places.

But in contrast with conditions in developing countries, the co-rise in foods prices has smaller overall effects, given its diminished share in the OECD consumption basket. Typically, subdued inflation during a period of high unemployment should allow authorities some room for expansionary policies. However, as OECD inflation moves quickly in a broader direction toward zero (indeed the momentum of producer prices is now negative for the G-3 countries) and governments are beset by high debt burdens, authorities' ability to undertake expansionary policies has become more limited. Further reductions in demand as consumers begin to expect lower prices in the future (as may be happening in Japan) could possibly undercut hopes for a revival of economic activity.

**Developing countries: hysteresis and vulnerabilities.**

As is widely recognized, rising food prices contribute more to inflation in developing than in advanced economies, because food's share of the consumption basket in the former tends to be much larger than in the latter. For example, food accounts for 15 percent of the U.S. (CPI) basket but 50 percent of the consumption basket of the Philippines. Moreover, there is evidence to suggest that there is a more significant pass-through of food prices to non-food prices in developing countries compared with OECD economies—where there is almost none. An example of this possible transmission mechanism is higher food prices triggering protests for higher wages across Northern Africa, elsewhere in Africa, and the Middle East during 2007-08.4
Roundup of inflation trends across developing regions

For developing countries as a group, headline inflation rates have eased at a somewhat slower pace than for the advanced economies, falling by 3 percentage points since the start of 2011 and 1.3 percentage points from April through November (figure 56). The decline is moderately less if China is excluded from the group: while inflation in China in the first quarter was well below the average 10 percent rate in other developing countries, since then inflation in many countries has fallen sharply, but in China these have fallen more rapidly still—a reversal of recent price trends for the developing world. Easing price pressures in most developing countries should serve to boost domestic demand (over time), as well as provide additional headroom for staving off more severe effects of potential global economic difficulties ahead (for example with real interest rates now rising, monetary authorities could opt to cut nominal rates further). In East Asia and the Pacific, easing inflation is now the watchword in the wake of a period when higher Chinese inflation was “holding up” the index at higher levels. For China, the ASEAN countries and others in the region, underlying momentum in headline CPI is now diminishing: China to 2.8 percent over the three months to November (saar); for countries excluding China to 4 percent. The increase in the East Asian CPI reached a recent peak of 8 percent in January 2011 under increasing food and fuel price pressures, as well as still strong domestic demand, and is now running at rate below 3 percent thanks to developments in China. With economic activity now anticipated to continue fairly strong, accompanied by lower commodity prices, we may expect a continuing deflationary trend through 2012 at a minimum (figure 57).
In Europe and Central Asia, Turkey is the outlier in this group of diverse economies, experiencing higher inflation (at 13.8% in November, saar) on the back of robust growth and recent reductions in interest rates. At the same time, inflation in Russia has eased rapidly from a 10 percent annualized pace in the first quarter of 2011 to 3.9 percent by October, but picked up in November, possibly reflecting rouble depreciation. Here, slowing growth and weaker oil prices have driven the sharp earlier fall in inflation. In the remainder of the region (Central Asian oil- and commodity exporters) inflation has trended down well into single digits essentially linked to similar developments in their larger neighbor, Russia. Regional inflation eased from 10.7 percent (saar) at end-2010 to a low of 7 percent in April, before returning to 9.6 percent by November 2011 (figure 58). In Latin America and the Caribbean, Brazilian inflation, which had been running at an overly-rapid 8 to 10 percent pace for most of 2011, eased to below 6 percent by August, owing to somewhat slower growth and determined monetary tightening (though the Central
Bank recently has cut rates). A moderate uptrend has set in during the fall months, carrying inflation above 6.8 percent by November, which is nonetheless expected to be short-lived, given anticipated step-down in economic growth. In similar fashion, Mexico’s recent upturn is more likely than not to be temporary. Average inflation for the region now lies at 7.5 percent (owing to continued double-digit advances for both Argentina and Venezuela), albeit down from 9 percent in the first quarter of the year (figure 59).

In the Middle East and North Africa, higher food and oil prices, disruptions to economic activity occasioned by the “Arab Spring”, as well as continuing violence in countries such as Yemen and Syria, have boosted regional inflation (as defined by limited data available for all countries of the region) to a 20 percent range as of June (3m/3m saar).
As such data is less meaningful now that more recent indicators for Egypt, Morocco and Tunisia have become available we focus here and find that headline inflation in these economies show a clear tendency toward easing. However, consumer prices measured at the market are exceptionally biased by large-scale government subsidies for food and in some cases fuel that move such indicators lower. Underlying pressures are indeed much higher, but the cost is being borne by local governments. Still the region remains highly exposed to further food price hikes, weighing down budgets, leading to worsening trade deficits at a time of concern about MENA’s largest trading partners in Europe (figure 60).

In South Asia, headline inflation for India and several other countries remains high, for the former within a 5-6 point range (saar), and for Pakistan between 10- and 11 points. But when measured on a seasonally adjusted annualized rate, inflation in India has fallen by 2.5 percentage points since the start of 2011, to 5.2 percent in November. Inflation remains more problematic in Pakistan; but had
earlier softened in the “post-conflict” environment in Sri Lanka (figure 61). And in Sub-Saharan Africa, South Africa and Nigeria, representing the bulk of the region’s GDP, have shown opposing movements of late, with South African headline inflation moving to a range of 6 percent from 2 percent at the start of the year; in contrast, inflation is plummeting in Nigeria owing to lower oil prices, revenues and disposable incomes. For the region outside of South Africa, inflation remains elevated, but falling, currently ranging near 10 percent, in large measure due to developments in Kenya (figure 62).
Figure 61: India showing deceleration, but South Asia Region still at high rates near 9%

Figure 62: African inflation making some strides, but still high at near 7%

Sub Prime Crisis Leading To Global Financial Crisis

The world economy is on the brink of another recession

Following two years of anemic and uneven recovery from the global financial crisis, the world economy is teetering on the brink of another major downturn. Output growth has already slowed considerably during 2011, especially in the developed countries. The baseline forecast foresees continued anemic growth during 2012 and 2013. Such growth is far from sufficient to deal with the continued jobs crisis in most developed economies and will drag down income growth in developing countries.

Even this somber outlook may be too optimistic. A serious, renewed global downturn is looming because of persistent weaknesses in the major developed economies related to problems left unresolved in the aftermath of the Great Recession of 2008-2009.

The problems are multiple and interconnected
The problems stalking the global economy are multiple and interconnected. The most pressing challenges are the continued jobs crisis and the declining prospects for economic growth, especially in the developed countries. As unemployment remains high, at nearly 9 per cent, and incomes stagnate, the recovery is stalling in the short run because of the lack of aggregate demand. But, as more and more
workers remain out of a job for a long period, especially young workers, medium-term growth prospects also suffer because of the detrimental effect on workers’ skills and experience.

The rapidly cooling economy is both a cause and an effect of the sovereign debt crises in the euro area, and of fiscal problems elsewhere. The sovereign debt crises in a number of European countries worsened in the second half of 2011 and aggravated the weaknesses in the balance sheets of banks sitting on related assets. Even bold steps by the Governments of the Euro Area countries to reach an orderly sovereign debt workout for Greece were met with continued financial market turbulence and heightened concerns of debt default in some of the larger economies in the euro zone, Italy in particular. The fiscal austerity measures taken in response are further weakening growth and employment prospects, making fiscal adjustment and the repair of financial sector balance sheets all the more challenging. The United States economy is also facing persistent high unemployment, shaken consumer and business confidence, and financial sector fragility. The European Union (EU) and the United States of America form the two largest economies in the world, and they are deeply intertwined. Their problems could easily feed into each other and spread to another global recession.

Developing countries, which had rebounded strongly from the global recession of 2009, would be hit through trade and financial channels. The financial turmoil following the August 2011 political wrangling in the United States regarding the debt ceiling and the deepening of the euro zone debt crisis also caused a contagious sell-off in equity markets in several major developing countries, leading to sudden withdrawals of capital and pressure on their currencies.

**Policy paralysis has become a major stumbling block**

Political divides over how to tackle these problems are impeding needed, much
stronger policy action, further eroding the already shattered confidence of business and consumers. Such divides have also complicated international policy coordination. Nonetheless, as the problems are deeply intertwined, the only way for policymakers to save the global economy from falling into a dangerous downward spiral is to take concerted action, giving greater priority to revitalizing the recovery in output and employment in the short run in order to pave more solid ground for enacting the structural reforms required for sustainable and balanced growth over the medium and long run.

**Faltering growth**
Surrounded by great uncertainties, the United Nations baseline forecast is premised on a set of relatively optimistic conditions, including the assumptions that the sovereign debt crisis in Europe will, in effect, be contained within one or just a few small economies, and that those debt problems can be worked out in more or less orderly fashion. It further assumes that monetary policies among major developed countries will remain accommodative, while the shift to fiscal austerity in most of them will continue as planned but not move to deeper cuts. The baseline also assumes that key commodity prices will fall somewhat from current levels, while exchange rates among major currencies will fluctuate around present levels without becoming disruptive.

**Global output growth is slowing and risks for a double-dip recession have heightened**

In this scenario, which could be deemed one of “muddling through”, growth of world gross product (WGP) is forecast to reach 2.6 per cent in the baseline outlook for 2012 and 3.2 per cent for 2013. This entails a significant downgrade (by one percentage point) from the United Nations baseline forecast of mid-2011 but is in
line with the pessimistic scenario laid out at the end of 2010. The deceleration was already visible in 2011 when the global economy expanded by an estimated 2.8 per cent, down from 4.0 per cent in 2010. The risks for a double-dip recession have heightened. As discussed in the section on the downside risks below, in accordance with a more pessimistic scenario—including a disorderly sovereign debt default in Europe and more fiscal austerity—developed countries would enter into a renewed recession and the global economy would come to a near standstill. More benign outcomes for employment and sustainable growth worldwide would require much more forceful and internationally concerted action than that embodied in current policy stances. The feasibility of such an optimistic scenario, which would push up global output growth to about 4.0 per cent, is discussed and in the section on policy challenges.

**Developing country growth remains strong, but is decelerating**

Developing countries and economies in transition are expected to continue to stoke the engine of the world economy, growing on average by 5.6 per cent in 2012 and 5.9 per cent in 2013 in the baseline outlook. This is well below the pace of 7.5 per cent achieved in 2010, when output growth among the larger emerging economies in Asia and Latin America, such as Brazil, China and India, had been particularly robust. Even as economic ties among developing countries strengthen, they remain vulnerable to economic conditions in the developed economies. From the second quarter of 2011, economic growth in most developing countries and economies in transition started to slow notably to a pace of 5.9 per cent for the year. Initially, this was the result, in part, of macroeconomic policy tightening in attempts to curb emerging asset price bubbles and accelerating inflation, which in turn were fanned
by high capital inflows and rising global commodity prices. From mid-2011 onwards, growth moderated further with weaker external demand from developed countries, declining primary commodity prices and some capital flow reversals. While the latter two conditions might seem to have eased some of the macroeconomic policy challenges earlier in the year, amidst increased uncertainty and volatility, they have in fact complicated matters and have been detrimental to investment and growth.

The forecast presented in this chapter is based on estimates calculated using the United Nations World Economic Forecasting Model (WEFM). Alternative scenarios are presented in the sections on “risks and uncertainties” and “policy challenges”.

**Background to the baseline assumptions**

It is assumed that within the span of the forecasting period, the sovereign debt crisis in Europe will be contained and that adequate measures will be taken to avert a liquidity crisis that could lead to major bank insolvencies and a renewed credit crunch. These measures include an orderly restructuring of Greek debt, some degree of bank recapitalization and a strengthening of the European Financial Stability Facility (EFSF) so that markets perceive that there is sufficient firepower to handle a possible default by one of the larger member countries. The recently announced package agreed on at the summit meeting of euro area leaders in October, if fully implemented, covers, albeit imperfectly, most of these issues. In addition, it is assumed that the plans announced for fiscal consolidation and restructuring will be implemented in the crisis-affected countries. In the United States, it is assumed that either the Joint Select Committee on Deficit Reduction would come to an agreement on a package to cut $1.2 trillion in Government
spending over the next 10 years or, in case of no agreement, that the contingency plan for a similar sized annual budget reduction of $120 billion would come into effect. More broadly, the planned macroeconomic policies of major economies for the short run (2012-2013), as also reflected in the Cannes Action Plan for Growth and Jobs adopted on 4 November 2011 by the leaders of the Group of Twenty (G20), are all assumed to be followed through in the baseline scenario.

**Monetary and fiscal policy assumptions for major economies**

The Federal Reserve Bank of the United States (Fed) is assumed to keep the federal funds interest rate at its current low level of between 0.0 and 0.25 per cent until the end of 2013. The Fed will implement the planned swap of its holdings of $400 billion in short-term Treasury Bills for long-term Government bonds, and will also reinvest the receipts of maturing assets, so as to maintain the size of its current asset holdings. The European Central Bank (ECB) is assumed to make another 25 basis-point cut in its main policy rate by the end of the year, bringing the minimum bid rate back down to 1.0 per cent. The ECB is expected to continue to provide liquidity to banks through a number of facilities, such as refinancing operations of various term-lengths and purchasing sovereign bonds under the Securities Markets Programme (SMP). The Bank of Japan (BoJ) is assumed to keep its main policy interest rate at 0.05 per cent and to continue to use its balance sheet to manage liquidity—through the Asset Purchase Program (APP)—to buy risk assets, such as commercial paper and corporate bonds, in addition to Government bonds and bills. The BoJ is also assumed to continue to intervene in foreign exchange markets to stabilize the value of the yen. In major emerging economies, the People’s Bank of China (PBC) is expected to keep its monetary tightening on hold, based on a contingent assumption that inflation in the economy will start to moderate.

In terms of fiscal policy, it is assumed that in the United States only the items for the
payroll tax cut and emergency unemployment compensation of the proposed American Jobs Act will be enacted and that long-term deficit-reduction actions will come into effect from January 2013.

In the Euro Area, as well as in most economies in Western Europe, it is assumed that the plans announced for fiscal consolidation will be fully implemented. In Japan, the total size of the five-year post-earthquake reconstruction plan is estimated to cost ¥19 trillion, or 4 per cent of GDP, to be financed mostly by increases in taxes. In China, the fiscal stance is expected to remain "proactive", with increased spending on education, health care and social programmes.

**Exchange rates among major currencies**

It is assumed that the euro will fluctuate around a yearly average of $1.36 in 2012 and 2013, implying a depreciation of 2.5 per cent from its 2011 level. The Japanese yen is assumed to average about ¥78 to the dollar for the rest of the forecast period, representing an appreciation of 2.4 per cent in 2012 compared with the average exchange rate in 2011; during 2011, the yen had already appreciated by 8.9 per cent. The Chinese renminbi is assumed to average CN¥ 6.20 per United States dollar in 2012 and CN¥ 6.02 in 2013, appreciating by 3.9 and 2.9 per cent, respectively.

**Oil prices**

Brent oil prices are assumed to average about $100 per barrel (pb) during both 2012 and 2013, down from $107 pb in 2011.
## Annual percentage change

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## South America
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- Mexico and Central America: 3.5, -5.7, 5.6, 3.8, 2.7, 3.6, 0.0, -1.6
- Mexico: 3.2, -6.3, 5.8, 3.8, 2.5, 3.6, 0.1, -1.8
- Caribbean: 7.1, 0.9, 3.5, 3.4, 3.6, 4.3, -0.6, -1.1

### By level of development
- High-income countries: 2.1, -3.7, 3.0, 1.6, 1.5, 2.0
- Upper middle income countries: 7.5, 1.2, 7.3, 6.1, 5.5, 6.0
- Lower middle income countries: 7.0, 4.3, 6.8, 5.9, 6.4, 6.6
- Low-income countries: 6.2, 4.8, 6.1, 5.7, 6.0, 5.9
- Least developed countries: 7.8, 5.2, 5.6, 4.9, 6.0, 5.7, -0.7, 0.2

### Memorandum items
- World trade: 6.8, -9.9, 12.8, 6.6, 4.4, 5.7, -0.5, -2.4
- World output growth with PPP-based weights: 4.4, -0.9, 4.9, 3.7, 3.6, 4.1, -0.4, -0.8

### Figure 63: Growth of world output, 2005-2013

Source: UN DESA.

- **a** Average percentage change
- **b** Actual or most recent estimates
- **c** Forecasts based in part on Project LINK and baseline projections of the UN DESA World Economic Forecasting Model
- **d** See United Nations, *World economic situation and prospects as of mid-2011* (E/2011/113)
- **e** Includes goods and services

### Figure 64: Growth of world gross product, 2006-2013
Slowed to 1.3 per cent in 2011, down from 2.7 per cent in 2010, and is expected to remain anemic in the baseline outlook, at 1.3 per cent in 2012 and 1.9 per cent in 2013. At this pace, output gaps are expected to remain significant and unemployment rates will stay high.

**Developed countries suffer from predicaments lingering from the global financial crisis**

Most developed economies are suffering from predicaments lingering from the global financial crisis. Banks and households are still in the process of a deleveraging which is holding back credit supplies. Budget deficits have widened and public debt has mounted, foremost because of the deep downturn and, to a much lesser extent, because of the fiscal stimulus. Monetary policies remain accommodative with the use of various unconventional measures, but have lost their effectiveness owing to continued financial sector fragility and persistent high unemployment which is holding back consumer and investment demand. Concerns over high levels of public debt have led Governments to shift to fiscal austerity, which is further depressing aggregate demand.

Growth in the United States slowed notably in the first half of 2011. Despite a mild rebound in the third quarter of the year, gross domestic product (GDP) is expected to weaken further in 2012 and even a mild contraction is possible during part of the year under the baseline assumptions. While, if enacted in full, the American Jobs Act proposed by the Government could have provided some stimulus to job creation, it would not have been sufficient to prevent further economic slowdown, as fiscal stimulus has already faded overall with many job losses caused by cuts in state-level budgets. Even as the total public debt of the United States has risen to over 100 per cent of GDP, yields on long-term Government bonds remain at record lows.
This would make stronger fiscal stimulus affordable, but politically difficult to enact in a context where fiscal prudence is favored and where the country has already been on the verge of defaulting on its debt obligations in August of 2011 because of political deadlock over raising the ceiling on the level of federal public debt. Failure by the congressional Joint Select Committee on Deficit Reduction to reach agreement in November of 2011 on fiscal consolidation plans for the medium term has added further uncertainty. The uncertain prospects are exacerbating the fragility of the financial sector, causing lending to businesses and consumers to remain anemic. Persistent high unemployment, at a rate of 8.6 per cent, and low wage growth are further holding back aggregate demand and, together with the prospect of prolonged depressed housing prices, have heightened risks of a new wave of home foreclosures.

Growth in the euro area has slowed considerably since the beginning of 2011, and the collapse in confidence evidenced by a wide variety of leading indicators and measures of economic sentiment suggest a further slowing ahead, perhaps to stagnation by the end of 2011 and into early 2012. Even under the optimistic assumption that the debt crises can be contained within a few countries, growth is expected to be only marginally positive in the Euro Area in 2012, with the largest regional economies dangerously close to renewed downturns and the debt-ridden economies in the periphery either in or very close to a protracted recession.

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4 When the debt ceiling was lifted in August 2011, it was agreed that a bipartisan “supercommittee” try to reach agreement, before the end of November, on reducing the Federal budget deficit by $1.2 trillion over the medium run. The committee failed to do so, triggering an agreed back-up plan according to which the United States Government would enact spending cuts to the tune of $110 billion in each fiscal year from 2013 to 2021. This failure to reach an agreement in Congress does not alter the baseline scenario for this report. However, it has heightened the downside risks, in particular with regard to what will happen with regard to two stimulus measures expiring on 1 January 2012, namely, the 2 per cent payroll tax cut and emergency unemployment insurance benefits. At the time of writing, it is still possible for Congress to extend these measures. Should that not occur, it would affect the 2012 baseline projection for GDP growth in the United States, lowering it by an estimated 0.6 percentage points. It would further erode consumer and investor confidence and increase the risk of the downside scenario’s materializing.
Japan was in another recession in the first half of 2011, resulting largely, but not exclusively, from the disasters caused by the March earthquake. While post-quake reconstruction is expected to lift GDP growth in Japan to about 2 per cent per year, which is above its long-term trend, in the coming two years, risks remain on the downside, emanating from the challenges of financing the reconstruction and coping with a possible, more pronounced and synchronized downturn along with other major developed economies.

As indicated above, developing countries are expected to be further affected by the economic woes in developed countries through trade and financial channels. Among the major developing countries, China's and India's GDP growth is expected to remain robust, but to decelerate. In China, growth slowed from 10.4 per cent in 2010 to 9.3 per cent in 2011 and is projected to slow further to below 9 per cent in 2012-2013. India's economy is expected to expand by between 7.7 and 7.9 per cent in 2012-2013, down from 9.0 per cent in 2010. Brazil and Mexico are expected to suffer more visible economic slowdowns. Output growth in Brazil was already halved, to 3.7 per cent, in 2011, after a strong recovery of 7.5 per cent in 2010, and is expected to cool further to a 2.7 per cent growth in 2012. Growth of the Mexican economy slowed to 3.8 per cent in 2011 (down from 5.8 per cent in 2010), and is anticipated to decelerate further, to 2.5 per cent, in the baseline scenario for 2012.

Low-income countries have also seen a slowdown, albeit a mild one. In per capita terms, income growth slowed from 3.8 per cent in 2010 to 3.5 per cent in 2011, but despite the global slowdown, the poorer countries may see average income growth at or slightly above this rate in 2012 and 2013 (see figure 65). The same holds for average growth among the United Nations category of the least developed countries (LDCs). Nonetheless, growth is expected to remain below
potential in most of these economies. In 2011 and 2012, per capita income growth is expected to reach between 2.0 and 2.5 per cent, well below the annual average of 5.0 per cent reached in 2004-2007.

Despite the high vulnerability of most LDCs to commodity price shocks, they tend to be less exposed to financial shocks, and mild growth in official development assistance (ODA) has provided them with a cushion against the global slowdown.
Conditions vary greatly across these economies, however; Bangladesh and several of the LDCs in East Africa are showing strong growth, while adverse weather conditions and/or fragile political and security situations continue to plague economies in the Horn of Africa and in parts of South and Western Asia.

Prospects for the least developed countries

The least developed countries (LDCs) will continue to see a growth performance that stands apart from the global pattern. While world economic growth decelerated markedly in 2011, LDCs experienced only a mild slowdown from 5.6 per cent in 2010 to 4.9 per cent in 2011. In the outlook for 2012, LDCs are expected to escape the global trend, with gross domestic product (GDP) growth ticking up again to 5.9 per cent. Even so, growth is expected to remain below potential in most of these economies. In 2011 and 2012, per capita income growth is expected to reach between 2.0 and 2.5 per cent, well below the annual average of 5.0 per cent reached in 2004-2007. Despite the high vulnerability of most LDCs to commodity price shocks, they tend to be less exposed to financial shocks, and mild growth in official development assistance (ODA) has provided them with a cushion against the global slowdown.

Conditions vary greatly across these economies, however (see figure). As a positive example, Bangladesh's economy grew by 6.5 per cent in 2011, continuing the upward trend of the previous year. Growth was underpinned by a robust expansion in private consumption and investment and a recovery in exports. Export revenues were boosted by strong apparel sales as the European Union enhanced duty-free market access for LDCs and international retailers shifted production to Bangladesh because of the country's low labour costs. Despite a slowdown in exports, growth is forecast to remain
Angola is also witnessing robust growth, which is forecast to accelerate from 4.1 per cent in 2011 to 9.2 per cent in 2012 on the back of rising production in the hydrocarbon sector. However, despite the positive headline growth figures, the country continues to suffer from a lack of economic diversification and higher value added activities in the private sector, as well as from institutional deficits.

In Nepal, economic activity continued to be hindered by political uncertainty and a fragile security situation, in addition to other factors, such as power shortages. Real GDP growth declined from 4.6 per cent in 2010 to 3.9 per cent in 2011 as solid growth in private consumption was largely offset by a contraction in investment and exports. Tourism earnings and remittance inflows registered moderate gains, a trend that is likely to continue in 2012. The manufacturing, construction and banking sectors are expected to perform slightly better in 2012, lifting growth to a still meagre and below-potential 4.3 per cent. Similarly, in Uganda, solid growth due to strong investment in the natural resources sector and vibrant construction, transport and communication sectors has become subject to increasing downside risks in the light of lingering political unrest.

By contrast, a number of other LDCs find themselves in outright dire situations. In the Horn of Africa, severe drought conditions have led to a famine that is taking a heavy humanitarian toll, especially among children, and forcing many people to flee their homes. Somalia has been hit especially hard, as drought has compounded an already disastrous situation stemming from poverty and military conflict.

Across the group of LDCs, continued and growing (albeit slowly) ODA has provided a
buffer to weather the crosscurrents of the unstable and volatile global economic environment. The overall positive economic outlook for LDCs remains subject to considerable risks. A pronounced fall in oil prices would hit oil exporters such as Angola especially hard, compounding a situation that is problematic even in a time of solid oil prices, in view of high income inequality and a shortfall in private sector business activity owing to the dominant role of the State. A further risk lies in the continued dependence of public budgets in many LDCs on ODA flows. If the pressure for fiscal consolidation in developed economies feeds through into pronounced cuts in ODA, policymakers in LDCs would see their room to maneuver limited further. Another risk lies in the weather pattern and, in this context, also in the possibility of more lasting changes in climate conditions. Compounding the negative fallout from adverse weather conditions is the fact that agriculture is the dominant economic sector in many LDCs.

Unemployment—a key policy concern

Three years after the onset of the Great Recession, persistent high unemployment remains the Achilles heel of economic recovery in most developed countries. The unemployment rate averaged 8.6 per cent in developed countries in 2011, still well above the pre-crisis level of 5.8 per cent registered in 2007. At more than 20 per cent, the rate remains the highest in Spain, while Norway's jobless rate is the lowest, at 3.5 per cent. Notably, the unemployment rate in the United States has remained at about 9 per cent since 2009, with virtually no improvement in the labour market during 2011 as layoffs in the public sector have partly offset job creation in the private sector and labour force growth has kept pace with overall employment growth.
The protracted jobs crisis in developed countries is harming long-term prospects

In many developed economies, the actual situation is worse than reflected in the official unemployment rates. In the United States, for instance, labour participation rates have been on a steady decline since the start of the crisis. Increasing numbers of workers without a job for a prolonged period have stopped looking for one and are no longer counted as part of the labour force. About 29 per cent of the unemployed in the United States have been without a job for more than one year, up from 10 per cent in 2007. Such a prolonged duration of unemployment tends to have significant long-lasting detrimental impacts on both the individuals who have lost their jobs and on the economy as a whole. The skills of unemployed workers deteriorate commensurate with the duration of their unemployment, most likely leading to lower earnings for those individuals who are eventually able to find new jobs. At the aggregate level, the higher the proportion of workers trapped in protracted unemployment, the greater the adverse impact on the productivity of the economy in the medium to long run. The International Labour Organization (ILO) estimated that by the first quarter of 2011, almost one third of the unemployed in developed countries had been without a job for more than one year, a situation affecting about 15 million workers (figure 66). 

5 Estimate of total long-term unemployment in developed economies, based on International Labour Organization (ILO) labour statistics database (LABORSTA), accessed 22 November 2011.
Despite employment recovery, long-term unemployment is also a concern in developing countries

In developing countries, employment recovery has been much stronger than in developed economies. For instance, unemployment rates are back to or below pre-crisis levels in most Asian developing countries, while employment has recovered in most countries in Latin America also. However, developing countries continue to face major challenges owing to the high shares of workers that are underemployed, poorly paid, have vulnerable job conditions or lack access to any form of social security. At the same time, open unemployment rates remain high, at well over 10 per cent in urban areas, with the situation being particularly acute in a number of African and Western Asian countries. Long-term unemployment has
High youth unemployment is a concern worldwide. Unemployment rates among youth (persons 15-24 years of age) tend to be higher than other cohorts of the labour force in normal times in most economies, but the global financial crisis and its consequent global recession have increased this gap in most parts of the world. Barring data limitations, the jobless rate among young workers in developed countries increased from an estimated 13 per cent in 2008 to about 18 per cent by the beginning of 2011. In Spain, an astonishing 40 per cent of young workers are without a job. A quarter or more of the youth in Western Asia and North Africa and one fifth of those in the economies in transition are unemployed. Also, in other developing regions, youth unemployment has increased more than that of other age groups. Latin America and the Caribbean, in particular, experienced significant increases in youth unemployment since 2008, although the situation started to improve in the first half of 2011. In East Asia, South Asia and Africa, young workers have a high probability of facing vulnerable employment conditions.

Skilled and unskilled young workers are affected by unemployment in different ways. Skilled youth that lose their jobs tend to have greater difficulty in getting a new job than more experienced workers and, hence, tend to face longer periods of unemployment than other workers; when they do find new jobs, they mostly have to settle for salaries lower than they earned before. Since entry salaries affect future salaries, youth who have lost jobs during the current financial crisis will face the risk of getting lower salaries for a prolonged period, even after the economy recovers. This group of unemployed, educated youth has recently received attention in the political debate as the "lost generation". Unskilled young workers who have
recently lost jobs have been found to be at greater risk of becoming “discouraged workers”, leading them to exit the labour force and end up dependent upon families and social programmes in the long term, especially in developed economies where such programmes exist. In developing economies, unskilled youth in unemployment face the additional risk of a permanent loss of access to decent work, causing them to stay outside the formal economy and have much lower lifetime earnings.

To make up for the employment deficit left by the crisis, 64 million jobs need to be created worldwide
Meanwhile, more young people continue to enter labour markets worldwide. In order to restore pre-crisis employment and absorb the new labour entrants, an employment deficit, estimated at 64 million jobs in 2011, would need to be eliminated. With the global economic slowdown projected in the baseline and growth of the workforce worldwide, however, the deficit would increase further, leaving a job shortage of about 71 million, of which about 17 million would be in developed countries. If economic growth stays as anemic in developed countries as is projected in the baseline forecast, employment rates will not return to pre-crisis levels until far beyond 2015 (figure 67).

Persistent high unemployment is holding back wage growth and consumer demand and, especially in the United States, pushing up delinquency on mortgage payments. Combined with continued financial fragility in the developed economies,

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6 Using ILO data, the employment deficit is estimated here as the difference between the global employment rate as observed in 2007 and 2011 multiplied by the working-age population.

7 Estimate based on the UN/DESA Global Policy Model. See box I.4 and the appendix table to the present chapter for baseline trends in employment rates in major economies and an assessment of an alternative policy scenario to eliminate the deficit.
it is also depressing investment demand and business confidence and further holding back economic recovery.

![Figure 67: Post-recession employment recovery in the United States, euro area and developed economies, 2007 (Q1)-2011 (Q2) and projections for 2011 (Q3)-2015 (Q4)](image)

**Benign inflation outlook**

Inflation has increased worldwide in 2011, driven by a number of factors, particularly the supply side shocks that have pushed up food and oil prices and strong demand in large developing economies as a result of rising incomes and
wages. Reflationary monetary policies in major developed economies have also contributed to upward pressure by, among other things, increasing liquidity in financial markets, which has kept interest rates down but has also increased financial investment in commodity futures markets, inducing an upward bias in commodity prices and enhancing volatility.

**Inflation does not pose a present danger in developed countries but remains a concern among developing countries**

Among the developed economies, inflation rates in the United States and Europe have edged up during 2011, moving from the lower to the upper bound of the inflation target bands set by central banks. This increase was in line with the policy objective in these economies, aimed at mitigating the risk of deflation in the aftermath of the financial crisis, as their central banks continued to inject more liquidity into the economy through various unconventional policy measures. In Japan, the disruption caused by the earthquake in March 2011, along with other factors, pushed up the general price level, ending a protracted period of deflation. Nonetheless, inflation should not be a major policy concern for most developed economies. Inflation is expected to be moderate in the outlook for 2012-2013 with the weakening of aggregate demand, subdued wage pressures in the face of continued high unemployment and barring major supply shocks the moderating of international commodity prices.

Inflation rates surpassed policy targets by a wide margin in a good number of developing economies. The monetary authorities of these economies have responded with a variety of measures, including by tightening monetary policy, increasing subsidies on food and oil, and providing incentives to domestic production. In the outlook, along with an anticipated moderation in global commodity prices and
lower global growth, inflation in most developing countries is also expected to decelerate in 2012-2013.

The international economic environment for developing countries and the economies in transition. Increased volatility in private capital flows

**Private capital flows increased further in 2011**

Net private capital inflows\(^8\) to emerging and developing economies increased to about $575 billion in 2011, up by about $90 billion from 2010 levels (figure 68). The recovery in capital inflows from their precipitous decline during the global financial crisis continued until the middle of 2011 but suffered a strong setback with the sharp deterioration in global financial markets in the third quarter of the year. The current level of inflows remains well below the pre-crisis peak registered in 2007. As a share of GDP of developing countries, net capital inflows are at about half of their peak levels. The outlook for external financing will be subject to uncertainty owing to counteracting forces during 2012 and 2013. On the one hand, continued sovereign debt distress in developed economies will sustain the present uncertainty and volatility in global financial markets, and this will likely deter portfolio capital flows to emerging economies. Deepening of the sovereign debt crisis may lead to more capital being pulled back for deleveraging of financial institutions in developed countries or in a search for safe havens (such as dollar- or Swiss franc-denominated assets), as was the case during the financial turmoil of the third quarter of 2011. On the other hand, higher growth prospects for most emerging economies (despite the downgraded forecast) will likely attract more foreign direct investment (FDI), while interest rate differentials will continue to favor lending to

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\(^8\) The measure used here refers to net inflows minus net outflows
emerging economies even if the risk premiums for some of these economies rise further, a trend already visible in the second half of 2011 (figure 69).
Private capital flows increased further in 2011......although portfolio flows have shown great volatility

Short-term portfolio equity flows to developing countries went into a tailspin in the second half of 2011. As a result, net inflows of portfolio equity to emerging economies in 2011 are estimated to register a decline of about 35 per cent from 2010 levels, exhibiting vivid proof of the high volatility these flows tend to be subject to.

International bank lending to emerging and developing economies continued to recover slowly from its sharp decline in 2009. In 2011, bank lending had recovered to only about 20 per cent of its pre-crisis peak level, as international banks headquartered in developed countries continued to struggle in the aftermath of the financial crisis. Non-bank lending has been more vigorous, as both private and public sectors in emerging economies managed to increase bond issuance, taking advantage of low interest rates in global capital markets.

Net FDI remained the largest single component of private capital flows in 2011, reaching $429 billion, up by more than $100 billion from its 2010 level. Asian emerging economies received most (about 45 per cent) of the FDI inflows, followed by
Latin America. These estimates are net of FDI from emerging market economies, which continued to increase. China and a few other Asian developing countries further increased investments in Latin America and Africa, primarily destined towards sectors producing oil, gas and other primary commodities.

Net disbursements of ODA reached a record high of $128.7 billion in 2010. Despite this record level, the amount of aid fell well short (by more than $20 billion) of the commitments made at the Gleneagles Summit of the Group of Eight (G8) on 6 July 2005 and those of other members of the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD) to increase aid to developing countries. Total ODA increased by 6.5 per cent in real terms in 2010, but OECD donor surveys suggest that bilateral aid from DAC members to core development programmes in developing countries will grow at a mere 1.3 per cent per year during 2011-2013 owing to the fiscal constraints of donors. At the current rate of progress, donors will not fully deliver on their commitments in the near future and will remain far removed from the long-standing United Nations target of providing 0.7 per cent of their gross national income (GNI) by 2015.

**Developing countries added more than $1 trillion to their reserve holdings**

On balance, however, financial resources continue to flow out of the emerging and developing economies in large quantities as their accumulation of foreign exchange reserves have increased further. In 2011, emerging economies and other developing countries are estimated to have accumulated an additional $1.1 trillion
in foreign exchange reserves, totaling about $7 trillion.

**Continued volatility in commodity prices; Commodity prices have dropped after a strong increase in early 2011**

International prices of oil and other primary commodities continued to rise in early 2011, but declined in the third quarter. The pattern resembles that of 2008, although the reversal has not been as drastic. Nonetheless, average price levels of most commodities for 2011 remained well above those in 2010, by between 20 and 30 per cent. The reversals since mid-2011 have been driven by four key factors: a weaker global demand for commodities resulting from bleaker prospects for the world economy, positive supply shocks in a number of markets, a sell-off in markets for financial commodity derivatives that occurred in concert with the downturn in global equity markets, and an appreciation of the United States dollar. In the outlook, the prices of most primary commodities are expected to moderate by about 10 per cent in both 2012 and 2013, consistent with the forecast of weaker global economic growth. It is to be expected, however, that commodity price volatility will continue to remain high.

Brent oil prices averaged $111 per barrel (pb) in the first half of 2011, compared with an average of $79 for 2010. The surge was mainly driven by the political unrest in North Africa and Western Asia, which caused disruptions in oil production, especially in Libya. However, oil prices dropped sharply in the third quarter of 2011 amidst weakening global demand, the anticipated resumption of oil production in Libya as well as a rebound of the exchange rate of the United States dollar.

In the outlook for 2012, demand for oil is expected to weaken because of slower economic growth in developed countries. Yet, total demand is expected to remain sustained because of the increased energy needs of developing countries, as well as
the restocking of oil inventories. Oil production is expected to resume progressively in Libya, while Saudi Arabia may keep its production at the current level. However, the continued geopolitical instability in North Africa and Western Asia is likely to keep the risk premium on oil prices elevated. All things considered, the Brent oil price is expected to decline by 6 per cent, to $100 pb, in the baseline forecast for 2012 and to continue to fluctuate around that level in 2013. Nonetheless, price uncertainty and volatility will remain high because of, among other things, the influence of financial factors. These include, in particular, fluctuations in the value of the United States dollar and unpredictable trends in financial derivatives' trading in commodity markets.

Food prices have been volatile but remain high

After sliding considerably in the first half of 2010, world food prices have risen sharply, peaking around February 2011 (figure 70). Despite subsequent falls, prices remain comparatively high. The average price of cereals during the first nine months of 2011 was about 40 per cent higher than that recorded over the same period of 2010. Despite similar swings, meat, vegetable oils and sugar prices have also been on the rise. The impact on food-dependent developing countries has been considerable, but variable. A famine caused by prolonged droughts was declared in the Horn of Africa, but other countries in Africa enjoyed good harvests of maize and sorghum. Generally speaking, however, higher food prices have been an important factor in the high inflation of many developing countries, or a cause of additional fiscal burdens where the impact was mitigated by food subsidies.

In the outlook, food prices may moderate somewhat with the global down-turn and expected good harvests for a number of key crops (including wheat). Yet, prices are likely to remain volatile, as food markets remain tight and any adverse supply
shock could induce strong price effects. Continued uncertainty in financial markets can also be expected to exacerbate commodity price volatility.

![Figure 70: International oil and food prices, January 2000-October 2011](image)

**Moderating world trade growth**

World trade continued to recover in 2011, albeit at a much slower pace than in 2010. After a strong rebound of more than 14 per cent in 2010, the volume of world exports in goods decelerated visibly, to 7 per cent, in 2011 (figure 71). The level of total world exports had fully recovered to its pre-crisis peak by the end of 2010, but it is estimated to be still below the long-term trend level by the end of 2011. As has
been the case with the recovery of WGP, developing countries, particularly Asian economies with large shares in the trade of manufactured goods, led the recovery. While the level of trade in volume terms has already far surpassed the pre-crisis peak for developing countries as a group, the trade volume for developed economies has yet to recover fully from the global crisis.

Commodity-exporting developing countries experienced a strong recovery in the value of their exports in the first half of 2011, owing to the upturn in commodity prices, but saw little growth of export volumes. Some of the value gains were lost again in the second half of the year with the downturn in key commodity prices. In the outlook, the volume growth of world trade is expected to moderate to about 5.0 per cent in 2012-2013. The dichotomy between a robust growth in trade in emerging economies and a weak one in developed economies will continue.
Policy failure poses the most acute risk for the global economy

Uncertainties and risks - Risks of another global recession

Failure of policymakers, especially those in Europe and the United States, to address the jobs crisis and prevent sovereign debt distress and financial sector fragility from escalating, poses the most acute risk for the global economy in the outlook for 2012-2013. A renewed global recession is just around the corner. The developed economies are on the brink of a downward spiral enacted by four weaknesses that mutually reinforce each other: sovereign debt distress, fragile banking sectors, weak aggregate demand (associated with high unemployment and fiscal austerity measures) and policy paralysis caused by political gridlock and institutional deficiencies. All of these weaknesses are already present, but a further worsening of one of them could set off a vicious circle leading to severe financial turmoil and an economic downturn. This would also seriously affect emerging markets and other developing countries through trade and financial channels.

The baseline forecast assumes that the set of additional measures agreed upon by the EU in late 2011 will suffice to contain Greece's debt crisis. The measures include a 50 per cent reduction of Greece's sovereign debt, steps to recapitalize European banks and deeper fiscal cuts in Greece. The baseline assumes this would help engender an orderly workout of the sovereign debt crisis in the euro area and prevent the Greek default from spreading to other economies and leading to a major collapse of banks. For the United States, the baseline assumes that the Government will put in place a policy package that would provide some minor stimulus in the short run, while cutting Government spending and increasing taxes over the medium run. The baseline further subsumes the policy commitments
made by other Group of Twenty (G20) members at the Cannes Summit in France, held on 3 and 4 November 2011. These reaffirm—by and large—existing Government plans, with the main emphasis on moving towards further fiscal austerity while sustaining accommodative monetary policies in most developed countries; and with continued focus on price stability through monetary tightening in major developing economies and those countries who are running large current-account surpluses enacting fiscal policies that promote more domestic-led growth.

**Inability to address sovereign debt problems in the Euro Area and the United States could trigger another global recession**

The presumption of the baseline scenario is that the combination of these policies will allow developed economies to "muddle through" during 2012, but will be insufficient to catapult a robust economic recovery. The risk is high, however, that these relatively benign baseline assumptions will prove to be overly optimistic. It is quite possible that the additional measures planned in Europe will not be effective enough to resolve the sovereign debt crisis in the region, leading to a disorderly and contagious default in a number of countries which will wreak havoc in the economies of the region and beyond. The efforts to solve the sovereign debt crisis in Europe failed to quell the unease in financial markets during November of 2011, and fresh warning signs of further problems emerged as Italy's cost of borrowing jumped to its highest rate since the country adopted the euro. Another sign of increasing financial distress was a jump in the Euribor-OIS, Europe's interbank lending rate, from 20 to 100 basis points—not as high as at the onset of the 2008 global financial crisis, but high enough to cause concern. A large number of banks
in the Euro Area already stand to suffer significant losses, but contagion of the sovereign debt crisis to economies as large as Italy would no doubt overstretch the funds available in the European Financial Stability Facility (EFSF), put many banks on the verge of bankruptcy and trigger a worldwide credit crunch and financial market crash in a scenario reminiscent of the September 2008 collapse of Lehman Brothers Holdings Inc. Such a financial meltdown would no doubt lead to a deep recession, not only in those economies under sovereign debt distress, but also in all other major economies in the Euro Area, possibly with the intensity of the downturn seen in late 2008 and early 2009.

The political wrangling over the budget in the United States may also worsen and could harm economic growth if it leads to severe fiscal austerity with immediate effect. This would push up unemployment to new highs, further depress the already much-shaken confidence of households and businesses, and exacerbate the beleaguered housing sector, leading to more foreclosures which, in turn, would put the United States banking sector at risk again. Consequently, the United States economy could well fall into another recession. The United States Federal Reserve might respond by adopting more aggressive monetary measures, for example, through another round of quantitative easing; but in a depressed economy with highly risk averse agents, this would likely be even less effective in terms of boosting economic growth than the measures taken in previous years.

A recession in either Europe or the United States alone may not be enough to induce a global recession, but a collapse of both economies most likely would. Figure 72 shows the possible implications of a more pessimistic scenario of this kind. GDP of the EU would decline by 1.6 per cent and that of the United States by 0.8 per cent in 2012. This would constitute about one third of the downturn experienced during 2009. The scenario assumes that financial conditions would not escalate into
a full-blown banking crisis with worldwide repercussions, but it also assumes some overshooting of the impact into the real economy—as was the case in 2009—allowing for a mild recovery in 2013, albeit with GDP growth remaining well below the baseline forecast.

**Developing countries would be hit hard**

Developing economies and the economies in transition would likely take a significant blow. The impact would vary as their economic and financial linkages to major developed economies differ across countries. Asian developing countries, particularly those in East Asia, would suffer mainly through a drop in their exports to major developed economies, while those in Africa, Latin America and Western Asia, along with the major economies in transition, would be affected by declining primary commodity prices. In addition, all emerging economies would have to cope with large financial shocks, including a contagious sell-off in their equity markets, reversal of capital inflows and direct financial losses due to the declining values of the holdings of European and United States sovereign bonds, which would affect both official reserve holdings and private sector assets.

As a result, GDP growth in developing countries would decelerate from 6.0 percent in 2011 to 3.8 per cent in 2012, that is, to almost half the pace of growth (about 7 per cent per year) achieved during 2003-2007 and about 3 percentage points below the long-term growth trend. This growth deceleration is not quite as big as in 2009 (when the pace of developing country growth dropped by almost 4.5 percentage points), yet various regions would suffer negative per capita income growth, likely causing renewed setbacks in poverty reduction and in achieving the
other Millennium Development Goals (MDGs). Growth of WGP would decelerate to 0.5 per cent in 2012, implying a downturn in average per capita income for the world.

Uncertainties associated with the global imbalances and heightened exchange-rate volatility

The large and persistent external imbalances in the global economy that have developed over the past decade remain a point of concern for policymakers. Reducing these imbalances has been the major focus of consultations among G20 Finance Ministers under the G20 Framework for Strong, Sustainable and Balanced Growth and the related Mutual Assessment Process (MAP) during 2011. The imbalances have declined during the current economic downturn, but there is concern that in the absence of corrective actions, they will rise again as the world economy recovers. The Cannes Action Plan for Growth and Jobs, adopted by the G20 leaders at the Cannes Summit on 4 November 2011 includes some concrete policy commitments towards such corrective action.

The global imbalances have stabilized at reduced levels

In practice, after a substantial narrowing during the Great Recession, the external imbalances of the major economies stabilized at about half of their pre-crisis peak levels

<table>
<thead>
<tr>
<th>GDP growth rate (percentage)</th>
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<table>
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<tr>
<th>Region</th>
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<th>2012</th>
<th>2013</th>
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</table>

**Figure 72: A downside scenario for the world economy**

Source: UN/DESA. See section on "Risks and uncertainties" for assumptions for this scenario.

(relative to GDP) during 2010-2011 (figure 73). The United States remained the
largest deficit economy, with an estimated external deficit of about $450 billion (3 per cent of GDP) in 2011, but the deficit has come down substantially from the peak of $800 billion (6 per cent of GDP) registered in 2006. The external surpluses in China, Germany, Japan and a group of fuel-exporting countries, which form the counterpart to the United States deficit, have narrowed, albeit to varying degrees. China, for instance, registered a surplus of about $250 billion (less than 4 per cent of GDP) in 2011, dropping from a high of 10 per cent of GDP in 2007. Japan is estimated to have registered a surplus of 2.5 per cent of GDP in 2011, a reduction
of one percentage point of GDP compared with the level in 2010 and about half the size of the peak level reached in 2007. While Germany’s surplus remained at about 5 per cent of GDP in 2011, the current account for the euro area as a whole was virtually in balance. Large surpluses, relative to GDP, were still found in oil-exporting countries, reaching 20 per cent of GDP or more in some of the oil-exporting countries in Western Asia.

No benign rebalancing has taken place

At issue is whether the adjustment of the imbalances in major economies has been mainly cyclical or structural. In the United States, some of the corresponding adjustment in the domestic saving-investment gap seems to be structural. For example, the household saving rate has increased from about 2 per cent of disposable household income before the financial crisis to about 5 per cent in the past few years. Despite a decline in recent months, it is likely that the average saving rate will stay at this level in the coming years, given the changes that have taken place in house financing and the banking sector after the financial crisis. On the other hand, the significant decline in the business investment rate and the surge in the Government deficit in the aftermath of the financial crisis are more likely to be cyclical. Business investment has been recovering slowly, while the budget deficit is expected to decrease somewhat. As a result, in the baseline scenario, the external deficit of the United States may stabilize at about 3 per cent of GDP in the medium run.

With regard to the surplus countries, the decline in the external surplus of China has also been driven in part by structural change. China’s exchange-rate policy has become more flexible, with the Renminbi appreciating gradually but steadily vis-à-
vis the United States dollar over the past year. Meanwhile, the Government has scaled up measures to boost household consumption, aligning the goal of reducing China's external surplus with that of rebalancing the structure of the economy towards greater reliance on domestic demand. However, the process of rebalancing can be only gradual over the medium to long run so as to prevent it from being disruptive. In Japan, a continued appreciation of the Yen has contained its external surplus. In Germany, room remains for policies to stimulate more domestic demand so as to further narrow its external surplus. The surpluses in oil-exporting countries are of a quite different nature from those in other economies, as these countries need to share the wealth generated by the endowment of oil with future generations via a continued accumulation of the surplus into the foreseeable future.

The policy commitments made at the Cannes G20 Summit promise to gently move things in the same direction, but with much of the narrowing in the short run coming from cyclical factors, including slower aggregate demand growth and moderating commodity prices. Hence, at projected baseline trends, the global imbalances are not expected to widen by a significant margin in the next two years. Should the global economy fall into another recession, the imbalances would narrow further in a deflationary manner.

**There are concerns that the present process of global rebalancing will be addressed at the expense of job growth and will not help stabilize exchange rates**

 Unsustainably large imbalances must be addressed, but at their present level, the global imbalances should not be a primary reason for concern. There are two other related concerns, however. The first is that the global rebalancing agenda should not...

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11 The Renminbi has appreciated by about 30 per cent against the dollar since China abandoned the dollar peg in 2005
develop at the expense of growth; rather, it should promote growth and employment generation as this will also be key to overcoming public debt woes. While the rebalancing as proposed in the Cannes Action Plan is said to be aligned with a strategy for “growth and jobs”, most of the concrete policy actions are already contained in existing Government plans, which, as shown in the outcome of the baseline scenario, add up to only anemic growth at best, and thus to a further cyclical, rather than structural, adjustment of the global imbalances.

The second related problem is the continued build-up of vast external liability positions of deficit countries which have similarly large external asset positions of the surplus countries as a counterpart. In a context of enhanced uncertainty in financial markets, these accumulated net investment positions are part of a larger topic related to enhanced exchange-rate instability. The net external liability position of the major reserve currency country, the United States, stands at about $2.5 trillion (17 per cent of GDP), but is down from its peak of $3.3 trillion (23 per cent of GDP) in 2008. Foreign holdings of United States Government debt dominate the composition of external liabilities, estimated at over $22 trillion, while United States foreign asset holdings mainly consist of private equities. Mounting external liabilities by the United States, associated in part with increasing fiscal deficits, have in fact been a major factor in the downward pressure on the United States dollar against other major currencies since 2002, although there have been large fluctuations around the trend. Confidence in the dollar is subject to volatility as perceptions of the sustainability of the United States liability position can easily shift along with changes in equity prices in global markets and the credibility of fiscal policy, both of which have been under varying (but heavy) pressure during 2011. The political wrangling over the debt ceiling in the United States has damaged market confidence and triggered a sell-off in equity markets worldwide.
In the light of events and problems with policy credibility elsewhere, this situation did not lead to univocal dollar depreciation. In the Euro Area, the lack of policy direction and coherence in dealing with sovereign debt problems put downward pressure on the euro. On a slightly different tack, but essentially in the same vein, the United Kingdom of Great Britain and Northern Ireland suffered its own version of a credibility crisis with the continued failure of its central bank to achieve its inflation target. Japan's earthquake, in turn, triggered a repatriation of private asset holdings for investment in reconstruction works, putting upward pressure on the yen. The volatility in global capital flows (discussed above) induced further instability into currency markets.

Indeed, exchange rates among major international reserve currencies, namely, the United States dollar, euro and Japanese yen, continued to display large fluctuations during 2011 (figure 74).

Figure 74: Exchange rates of major reserve currencies vis-à-vis the United States dollar, 2 January 2008-10 November 2011
Developing countries also witnessed greater exchange rate volatility. The dollar continued its downward trend against other major currencies in the first half of the year, but rebounded notably against the euro in the third quarter when concerns about the sovereign debt crisis in the euro area intensified, and devalued again later in the year after some agreements were reached in Europe on scaling up measures to deal with the debt crisis. Over the year as a whole, the Japanese yen appreciated against both the dollar and the euro, despite interventions by the Bank of Japan to curb the appreciation. Among other currencies in developed economies, the Swiss franc appreciated the most in the first half of the year, as a result of flight-to-safety effects, leading to the decision of the Swiss authorities not to tolerate any strengthening of the exchange rate below SwF 1.20 per euro. Strong capital inflows attracted by robust economic performance put upward pressure on the currencies of most emerging economies over the past two years. This trend went into a tailspin with the heightened turbulence in global financial markets starting in mid-2011 (figure 75). For instance, Brazil’s real fell 16 per cent against the United States dollar, 2 January 2008-10 November 2011.
dollar in the third quarter, while the Russian Rouble and the South African rand depreciated by 15 and 19 per cent, respectively. However, since early 2009, the underlying trend has been for the currencies of most emerging economies to appreciate against the dollar. In the cases of Brazil, Indonesia, the Republic of Korea, South Africa and Thailand, for instance, this trend reflects in part a recovery from the depreciation that occurred at the apex of the global financial crisis in 2008. The Chinese Renminbi, in contrast, has slowly but gradually appreciated against the dollar ever since 2005, as part of a deliberate exchange-rate policy.

**Exchange-rate volatility is posing policy challenges to developing countries**

Currency appreciation poses a challenge for many developing countries and some European countries by reducing the competitiveness of their respective export sectors. While domestic demand has been taking on a more significant role as a driver of growth on the back of rising incomes in many emerging economies, a forced and premature shift away from an export-led growth model owing to pronounced and sustained currency appreciation might create significant dislocations, especially in labour markets in the form of a spike in unemployment. Stronger currencies can help on the import side to reduce inflation, but this advantage could be more than offset by the social cost of higher unemployment rates.

An additional problem tied to sustained exchange-rate trends lies in an increased probability of sudden trend reversals, as occurred in the third quarter of 2011. Contrary to many fundamental factors, virtual panic about the debt problems in Europe and the possibility of a global recession set off a flight to the dollar, which has again confirmed its role as the safe-haven currency of last resort in situations of extreme market stress. Emerging market currencies that had
experienced sustained appreciation pressure suffered a precipitous fall in their values in a very short time span, illustrating the unpredictable nature of developments in currency markets. The increased currency volatility has injected an additional element of uncertainty into currency markets and created significant feed-through effects into the real economy. As companies face greater difficulties in pricing their products and anticipating their costs, business planning becomes more uncertain, underpinning a generally more cautious approach that also includes an even greater reluctance to hire new employees. Such increased volatility would also be likely to spill over into more price instability in commodity markets given the high degree of financialization of those markets and the impact of exchange rates (especially the value of the dollar) on commodity prices. Uncertainty and volatility in currency markets can be expected to remain high during 2012-2013.

**Policy challenges**

**Developed countries are in a no-growth trap**

Overcoming the risks outlined above and reinvigorating the global recovery in a balanced and sustainable manner poses enormous policy challenges. Most developed economies—Europe and the United States, as well as Japan—find themselves in a difficult economic bind. There are no simple solutions that would quickly win political support. Their economies have been growing too slowly for too long, making it more and more difficult to pay for the increasing costs of health care and pensions for ageing populations. The United States and Europe face the risk of their problems feeding into each other. Recent economic stagnation may make voters and policymakers unwilling to opt for hard choices,
and the political paralysis might, in turn, worsen the economy by creating new financial turmoil. In the short term, this so-called no growth or low growth trap\textsuperscript{12} takes the form of resistance to emergency measures—for instance, the opposition in some European countries that are perceived to be more fiscally prudent, to bail out what are seen to be more profligate countries; this may force the latter towards more fiscal austerity and induce lower growth and social opposition. Over the longer term, the trap is created by resistance to the higher taxes and reduced benefits deemed necessary to return countries to financial stability. The resistance is understandable given the weakness of income growth over the past decade, but is unlikely to hold up against the pressures for adjustment.

\textbf{Developing countries face different policy dilemmas}

Developing countries find themselves in a different bind. On the one hand, they need to protect themselves against volatile commodity prices and external financing conditions, in some cases through more restrictive macroeconomic policies and reserve accumulation, thereby contributing to the lack of global aggregate demand. On the other hand, they need to step up investment to sustain higher growth and reorient their economies towards faster poverty reduction and more sustainable production. In particular, they need to be mindful that the quality of growth should not be such that it deprives important groups of workers of decent jobs—not just the working poor but also the youth and, in some cases, the better educated amongst them. Feelings of the lack of a meaningful future have become a source of social tensions, most visibly in the Arab world. G20 leaders recognized these concerns to some extent in the Cannes Action Plan and announced a global

\textsuperscript{12} The trap was so named in a recent article by Benjamin F. Friedman, "The no-growth trap", National Interest, No. 116 (November-December 2011), available from http://nationalinterest.org/article/the-no-growth-trap-6050.
strategy for growth and jobs. The plan is to address short-term vulnerabilities, while strengthening the medium-term foundations for growth. The mix of concrete measures and policy commitments for the short run are by and large consistent with what is already subsumed in the baseline forecast for 2012 and 2013. It refers, if only in vague terms, to the possible implementation of some elements of the American Jobs Act proposed by the Government of the United States as well as its commitment to medium-term fiscal consolidation. It further includes Japan’s reconstruction efforts (although these are assumed to be largely tax-financed) and the coming into effect of the “comprehensive” package agreed to by the Governments of the euro area for an orderly workout of the sovereign debt crises in the area. It also includes the commitment of ensuring monetary policies that support economic recovery but maintain price stability in the medium run, and commitments of countries with relatively strong public finances (such as Australia, Brazil, Canada, China, Germany, Indonesia and the Republic of Korea) to let automatic stabilizers work and, in the face of worsening world economic conditions, take discretionary measures to support domestic demand.

13 This includes the agreement to (i) flexibilize and enhance the EFSF instruments to a firepower of up to €1 trillion; (ii) significantly strengthen economic and fiscal surveillance and governance of the euro area; (iii) ensure that euro area member States experiencing tensions in sovereign debt markets make stronger efforts in terms of fiscal consolidation and structural reforms; (iv) ensure the sustainability of the Greek public debt through a rigorous adjustment programme and a voluntary nominal discount of 50 per cent on Greek debt held by private investors; and (v) raise confidence in the banking sector, including by facilitating access to term funding, where appropriate, and temporarily increasing the capital position of large banks to 9 per cent of Core Tier 1 capital after accounting for sovereign exposures by the end of June 2012, while maintaining the credit flow to the real economy and ensuring that these plans do not lead to excessive deleveraging.
Current policy intentions of the G20 at best provide for a scenario of “muddling through”

In essence, however, the Cannes Action Plan does not promise to add much more to what was already contained in Government plans enacted during 2011, when macroeconomic policies in most developed economies were already characterized by a combination of an extremely loose monetary policy stance and shifts towards fiscal austerity. The central banks of the Euro Area, Japan and the United States all maintained their policy interest rates at low levels and expanded the size of their balance sheets to inject more liquidity into the economy through various unconventional monetary measures. The fiscal policy stance in most developed economies was tightened through austerity measures, inducing a drain on GDP growth. In contrast, macroeconomic policy varied greatly across developing countries. Monetary tightening in efforts to stem inflation was perhaps the more common feature among major emerging economies. The Cannes Action Plan does not promise to do much more in the short run (apart for the elements highlighted above), and as the baseline projections show, would fall short of reinvigorating the world economy and bringing down unemployment. Most hopes seem to be set on strengthening the medium-term foundations for growth, but the related six-point plan\(^{14}\) could quickly “fall behind the curve” if the downside risks to the outlook materialize. In fact, during November of 2011 it became clear that markets have been little impressed by either the G20 Action Plan or the Euro Area’s package for handling the sovereign debt crisis and containing

\(^{14}\) The six-point plan to strengthen the medium-term foundations for growth agreed to by the G20 leaders in Cannes would consist of (1) commitments to fiscal consolidation; (2) commitments to boost private demand in countries with current-account surpluses, and, where appropriate, to rotate demand from the public to the private sector in countries with current-account deficits; (3) structural reforms to raise growth and enhance job creation across G20 member countries; (4) reforms to strengthen national/global financial systems; (5) measures to promote open trade and investment, rejecting protectionism in all its forms; and (6) actions to promote development.
contagion to large economies. Financial turmoil continued amidst increased political uncertainty with the Government leaders of both Greece and Italy being forced to step down over the sovereign debt crisis. Italy's borrowing costs were pushed to record highs and the world's seventh-largest economy edged closer towards the brink of default.

This has increased the likelihood of the pessimistic scenario's materializing, with the consequences outlined in the section above. The only way to overcome present economic woes is through much more pervasive policy coordination.

In order to make the global economic recovery more robust, balanced and sustainable, the policy directions discussed in World Economic Situation and Prospects 2011 still apply, but they have taken on greater urgency. There are important commonalities with the Cannes Action Plan, but actions will need to be much more pervasive and better coordinated, especially in terms of short-term stimulus, sovereign debt resolution and orientation towards job creation, while medium-term plans should focus more strongly on sustainable growth and development and accelerated reforms of financial regulatory systems and the international monetary system.

**Stronger macroeconomic stimulus...More short-term fiscal stimulus is needed, not less**

As a first step, developed countries, in particular, should be cautious not to embark prematurely on fiscal austerity policies given the still fragile state of the recovery and prevailing high levels of unemployment. While high public indebtedness is a concern and has continued to increase in most developed economies, in a number of cases (including the US) to over 100 per cent of GDP (figures 76, 77, 78),
CHAPTER III: IMPACT OF SUB PRIME CRISIS ON WORLD ECONOMY

Figure 76: a. Growing public debt burdens (percentage of GDP)

Figure 77: b. Growing public debt burdens (percentage of GDP)

Figure 78: c. Growing public debt burdens (percentage of GDP)
many developed country Governments still have plenty of fiscal space left for additional stimulus measures. A high debt-to-GDP ratio does not necessarily render public indebtedness unsustainable. Risk premiums on sovereign debt constitute one indication. The spreads on interest rates on public borrowing have increased significantly for Greece and a few other European economies, but they remain low (and have even decreased further) for Germany, Japan, the United States and other developed countries (figure 79&80).

![Figure 79: Yields on two-year sovereign bonds in developed countries, January 2010-November 2011](image-url)
Contrary to prevailing political pressures, the countries with fiscal space should pursue a “J-curve” approach towards fiscal adjustment. With high unemployment and weak private demand, a premature fiscal tightening may derail the fragile recovery and lead to further worsening, rather than improvement, of fiscal balances. Instead, the Governments of economies with low financing costs in capital markets should allow automatic stabilizers to operate and sustain or enhance deficit-financed fiscal stimulus in the short run. The additional stimulus should continue up to the point where sufficient GDP and job growth have taken effect and unemployment rates have fallen to levels at which more sustained private demand growth may be expected. In this approach, Governments would allow the fiscal deficit to widen further initially, perhaps for another two or three years, until more
robust GDP and employment growth boosts Government revenues, thus facilitating swifter and less harmful budget deficit reduction.

**A J-curve process of fiscal consolidation is feasible**

As explained, further a J-curve process of fiscal consolidation is quite feasible provided one dollar of additional short-term stimulus translates into more than one dollar of additional aggregate demand, which is typically the case when the economy is in a downturn and even more so if the stimulus is oriented towards infrastructure and direct job creation (as argued in more detail below). A second necessary condition is that the cost of Government borrowing in capital markets (the nominal interest rate on long-term bonds) be less than the rate of potential nominal GDP growth so as to ensure a benign debt-GDP growth dynamic. This condition is currently satisfied in Germany, Japan and the United States, and several other developed countries not mired in sovereign debt distress. Given the current high degree of uncertainty in capital markets, the additional “J-curved” fiscal adjustment. Three years after the onset of the Great Recession, fiscal policy in most developed economies is facing a dual challenge: the need for preventing a double-dip recession as the economic recovery falters and the need for safeguarding the fiscal sustainability in the long run. In a few European economies, the debt situation has gone beyond the limits of affordable access to refinancing in capital markets. They seem to have little option left but to frontload austerity measures with or without a deal for an orderly debt restructuring. Other developed economies, however, for which the cost of public borrowing remains low, have more space to implement a fiscal framework that allows for more stimulus in the short run to bolster the economic recovery and bring public debt to more sustainable levels over the long run. A possible “J-curved” trajectory for the fiscal balances of those developed economies without severe debt distress, and
discusses the conditions under which such a policy approach would constitute a workable option.

In the present-day context of a large fiscal deficit, below-potential growth, elevated unemployment, and continued financial deleveraging, substantial cuts in Government spending and increases in taxes may be ineffective in reducing the budget deficit. Worse still, along the lines of Keynes's paradox of thrift, when both consumers and Governments simultaneously spend less to save more, the resulting recession and contraction of gross domestic product (GDP) would again render public debt unsustainable. Even if a double-dip recession is avoided, fiscal austerity may keep economic growth below potential for a prolonged period, thus keeping up unemployment. In this case, Government revenue will not recover sufficiently; the large budget deficit will linger and public debt will continue to rise. The view held by some analysts and policymakers in major economies that lower public deficits and debts would enhance the confidence of private sector agents, and hence could help restore growth, tends to hold little ground when unemployment is high and deleveraging firms and banks are highly risk averse.

The J-curve approach brings an alternative perspective. In economies with low financing costs in capital markets, Governments have policy space to let automatic stabilizers operate and sustain or enhance deficit-financed fiscal stimulus. It would make sense to use this space up to the point where sufficient GDP and job growth have taken effect and unemployment rates have fallen to levels at which more sustained private demand growth may be expected. In this approach, Governments would allow the fiscal deficit to widen further initially, perhaps for another two or three years, until more robust GDP and employment growth boosts Government revenues, facilitating swifter and less harmful budget deficit reduction. At that point, if needed, more structural fiscal reforms may
be put in place to accelerate gradual reduction of the public debt-to-GDP ratio. As a result, the fiscal balance would evolve in the shape of a J-curve: worsening initially, to improve strongly thereafter.

The feasibility of achieving such a J-curve depends on a number of economic conditions. One important condition that would need to be satisfied is that the fiscal multiplier in the economy be greater than 1, meaning that an increase of one dollar in Government spending or tax cuts generates an increase of more than one dollar in GDP. If the multiplier is smaller than 1, it implies that an increase in Government spending or a tax cut will be partially offset by reductions in private consumption or investment. Consequently, as a second-round effect, Government revenue would not increase sufficiently to cause the budget deficit to fall over time.

Do major developed economies meet this condition? A review of various studies shows that the estimated value of the fiscal multiplier in the United States over the past three decades has been in the range of 0.8-1.5, thus leaving some uncertainty as to whether this condition is satisfied or not. Estimates of fiscal multipliers for European economies tend to fall into a similar range. However, the estimate of the multiplier in most of these studies is the average value over a time span that includes both

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economic booms and recessions\textsuperscript{17}. Indeed, the multiplier is likely to be much larger during recessions, when there is slack in capacity utilization and when households and businesses are too risk averse to spend, as is the case at present\textsuperscript{18}. Moreover, the composition of fiscal stimulus will influence the size of the multiplier. Increases in Government spending on infrastructure investment, for instance, tend to have larger multipliers than tax credits or direct income transfers, especially when comparing the cumulative multiplier effects over a number of years.

The second necessary condition is that the cost of Government borrowing in capital markets (the nominal interest rate on long-term bonds) be less than the rate of potential nominal GDP growth. This will ensure a benign debt-GDP growth dynamic. Currently, in Germany, Japan and the United States, long-term interest rates on Government bonds are clearly lower than their respective potential nominal GDP growth rates. It is uncertain, however, whether additional Government spending and larger budget deficits would push up interest rates significantly, as has occurred in the European economies that are now facing severe debt distress. A number of complementary actions could help reduce the uncertainty in capital markets. In the present context, these would include (a) a continued commitment to accommodative monetary policies and to low interest rates; (b) support of bank recapitalization and tightening of financial regulation so as to reduce financial fragility and bank exposure to sovereign debt risk; and (c) the advancement of credible and concrete plans aimed at a more structural resolution of fiscal problems over the medium to long run.

Last, but not the least, the feasibility of a J-curved fiscal adjustment will be highly

\textsuperscript{17} Jonathan Parker, "On measuring the effects of fiscal policy in recessions", Journal of Economic Literature, vol. 49, No. 3, pp. 703-718.

\textsuperscript{18} For example, Alan Auerbach and Yuriy Gordnichenko, in "Measuring the output responses to fiscal policy", American Economic Journal: Economic Policy (forthcoming), estimate that the multipliers for the United States range between 0.0 and 0.5 during economic expansions, but are much higher, in the range of between 1.0 and 1.5, during economic recessions. Jonas D. Fisher and Ryan Peters provide similar estimates in "Using stock returns to identify government spending shocks", Economic Journal, vol. 120, No. 544, pp. 414-436.
depend-ent upon political factors. It will require a broad-based trust of society in support of the Government’s taking the calculated risk of allowing a further worsening of the fiscal deficit to provide more fiscal stimulus in the short run while committing to solving the structural debt problems over the medium to long run.

Short-term stimulus could cause interest rates to go up, but Governments can contain this by (a) continued commitment to accommodative monetary policies, (b) more forceful bank recapitalization measures and tighter financial regulation to address financial sector fragility and (c) credible and concrete plans aimed at a more structural resolution of fiscal problems over the medium to long run. Further strengthening of financial safety nets will also be needed to stem market uncertainty and the risk of further debt distress. The establishment of Europe’s temporary funding facilities (the EFSF and the European Financial Stabilisation Mechanism (EFSM)), the more permanent European Stability Mechanism (ESM) and related measures have brought some resolve to dealing with Europe’s sovereign debt crisis. However, the continued debt distress and spread of contagion to the larger European economies during the second half of 2011 suggests these measures have not been bold enough. The firepower of the financial safety nets is too limited to cope with the sovereign debt problems of countries like Italy and Spain. Finding ways to significantly enhance the firepower of the ESM will be as important as it is difficult to achieve. It may prove difficult for economic reasons, since leveraging resources for the EFSF (and ESM, for that matter) would be akin to seeking collateralized debt obligations to sub-triple A bonds, and thus may not attract large

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19 In response to the crisis in Greece, the European Council set up a European Financial Stabilisation Mechanism (EFSM) and a European Financial Stability Facility (EFSF) in 2010. Later, these facilities were also used to assist Ireland and Portugal. In early 2011, a permanent crisis management mechanism—the European Stability Mechanism (ESM)—with an effective lending capacity of up to €640 billion was agreed upon. The ESM is to replace the EFSM and EFSF by mid-2013. In July 2011, euro area Government leaders agreed to broaden the mandate of the ESM with a provision for precautionary lending, the provision of loans to sovereigns that are not part of a programme for restoring capital buffers, and the use of the mechanism to purchase sovereign bonds in secondary markets.
voluntary contributions. It will not be easy for institutional and political reasons either, because it requires changing the euro area treaty and overcoming opposition from countries not facing debt distress. It is clear that the euro area needs the help and involvement of other major economies, the surplus countries amongst them in particular. This would require reaching a swifter international agreement to enhance International Monetary Fund (IMF) resources to supplement the EFSF, and accepting a more accelerated voice and quota reform of the IMF (see below). The European Central Bank (ECB) could contribute further if it were willing to assign itself a greater role as lender of last resort.

**Debt workout mechanisms are needed in both Europe and the United States**

Debt workout mechanisms should not be restricted to sovereign debts in Europe. Many developed countries, the United States in particular, may face a second round of mortgage crises as so many mortgages are “under water” and problems are likely to increase with persistent high unemployment and the general weakness in housing markets. Countries facing these conditions may need to consider facilitating household bridge loan assistance and mortgage restructuring and “rent-to-start-over” plans in order to ease the process of household deleveraging and avoid large-scale foreclosures. Without such measures, the road to recovery may be much harder.

The short-term policy concern for many developing countries will be to prevent rising and volatile food and commodity prices and exchange-rate instability from under-mining growth and leading their economies into another boom-bust cycle. These countries would need to ensure that macroeconomic policies are part of a transparent counter-cyclical framework that would include the use of fiscal
stabilization funds and strengthened macro-prudential financial and capital-account regulation to mitigate the impact of volatile commodity prices and capital inflows. Strengthened social policies would need to offer sufficient income protection for the poor and vulnerable against higher food and energy prices.

...that is adequately coordinated internationally

The second (and related) challenge is to ensure that additional short-term stimulus by economies with fiscal space is coordinated and consistent with benign global rebalancing. In Europe, instead of the present asymmetric adjustment through recessionary deflation, which concentrates most of the pain on the countries in debt distress, this would entail a more symmetrical approach of austerity and structural reforms in the countries in distress combined with Euro Area-wide reflation. The subsequent economic recovery would ease medium-term fiscal consolidation and debt reduction, as mentioned earlier. The United States would equally need to consider such a sequenced approach. The first priority should be to boost demand in order to reduce unemployment, especially through public investment and more direct job creation. This would help households deliver and boost consumption demand through income growth. Infrastructure investment and other structural measures would underpin strengthened export competitiveness over the medium run. This would give time for China and other Asian economies to rebalance towards greater reliance on domestic demand growth, in line with existing Government plans and the intentions of the Cannes Action Plan for medium-term global rebalancing.
Global rebalancing with accelerated job recovery is feasible if concerted action is taken

To achieve such benign global rebalancing with accelerated job recovery seems feasible. It would be growth enhancing and would also bring public debt ratios down to sustainable proportions over the medium run. Simulations with the United Nations Global Policy Model—reflecting the key policy directions suggested above and those below regarding coordinated short-term global stimulus, orderly sovereign debt workouts and structural policies aimed at stronger job creation and sustainable development—show that this would be a win-win scenario for all economies, as it would significantly enhance GDP and employment growth compared with the baseline, while reducing public debt-to-GDP ratios and requiring limited exchange-rate realignment. WGP would accelerate to over 4 per cent per year during 2012-2015, especially since developed economies would be lifted from their anaemic growth, while developing countries would also reach a higher growth path compared with the baseline situation, where policy co-ordination is absent. Most importantly, employment rates, especially among developed countries, would recover to near pre-crisis levels, a situation which would remain elusive in the baseline forecast. Also, in developing countries, employment growth would be significantly higher. By and large, the 64 million jobs' deficit resulting from the global crisis of 2008-2009 would have dissipated by 2016 in this scenario. Even given such a perhaps slow employment recovery, the scenario underscores that providing more fiscal stimulus in the short run and avoiding premature fiscal austerity is a feasible way of dealing effectively with the global jobs crisis while at the same time inducing a benign and more sustainable rebalancing of the global economy.
A coordinated strategy for jobs and growth

A scenario of strengthened international policy coordination aimed at dealing with the jobs crisis and averting a double-dip recession was simulated using the United Nations Global Policy Model\textsuperscript{20}. The Model takes on board the key policy directions suggested in the report, including a stronger role for fiscal policy in the short-term outlook—one that gives priority to employment generation and greener growth through better-targeted Government spending, private investment incentives and structural policies. In the policy simulation, there is no premature fiscal austerity overall, and growth of Government spending is kept positive across major economies and regions. Public spending increases at a rate below gross domestic product (GDP) growth, in such a way that budget deficits and public debt-to-GDP ratios are gradually reduced over time. At the same time, policies are assumed to be coordinated to a certain degree with stronger fiscal impulses provided in countries with more fiscal space, as well as in the surplus economies, so as to help bring about a global rebalancing. The scenario further assumes that fiscal and monetary policies in developed economies are redesigned in ways suggested in the text, aimed at putting GDP growth on a path towards reaching levels of (non-inflationary) potential output, with an initial post-recession acceleration and with employment rates approaching pre-crisis levels. Furthermore, it is assumed that effective debt workout mechanisms and financial safety nets are put in place to contain the abnormal rise in interest rates on sovereign debt, and that the impulses to enhance short-term employment and output growth will restore consumer and investor confidence and normalization of the credit supply.

Emerging and developing countries are also assumed to engage in additional fiscal stimulus in this policy scenario, but the degree of stimulus has been tailored to the

available fiscal space in each country grouping using the initial level of public indebtedness as a benchmark. Since greater fiscal space in most cases appears to be closely associated with larger external surpluses accumulated in the recent past, the simulated pattern of stimulus measures across countries is thus helping the global rebalancing. Furthermore, it is assumed that developing countries use most of the stimulus to strengthen investment in infrastructure and sustainable productive capacity in agriculture and energy, and that they gain greater access to developed country markets along with efforts to diversify their export base. This implicitly assumes that multilateral trade rules and a strengthened aid-for-trade programme are supportive of these developments. In low-income countries in particular, the increased public and private investment would lead to larger external deficits in the early years of the simulation period. The simulation assumes these countries have adequate access to official development assistance and other external financing to cover those deficits.

Under these assumptions, growth of world gross product would move up to about 4.0 per cent per annum, with both developed and developing economies seeing growth accelerate by between 1 and 2 percentage points in comparison with the baseline (see figures 81, 82 & 83). Most importantly, employment rates, especially among developed countries, would return to near pre-crisis levels, unlike those in the baseline scenario (figures 84, 85 & 86). Also, in developing countries, employment growth would be significantly higher. The employment deficit caused by the global crisis of 2008-2009, estimated at 64 million jobs worldwide in 2011, would by and large dissipate by 2016, although, in the present scenario, would still fall slightly short of the global employment rate seen in 2007. The simulation results show further that these outcomes are achievable alongside improving fiscal balances and stabilizing public debt ratios over the medium run with a gradual decline thereafter. Government budget balances would quickly shift towards the upward slope of the J-curve, given the relatively mild, but well-targeted, fiscal impulses assumed in the
scenario. Current-account imbalances would be reduced gradually, in part because surplus countries are providing greater fiscal stimuli that would trigger stronger domestic private investment and consumption growth in those countries. With investments in energy efficiency and more sustainable (and greener) energy supplies, world energy prices would stabilize to lower levels over the medium run. Food prices would also stabilize as stronger demand is met with more rapidly increasing supply underpinned by increased investment in sustainable food production. Thus, external surpluses of major commodity exporting economies would also adjust gradually.

Even with such a perhaps slow employment recovery, this scenario underscores that providing more fiscal stimulus in the short run and avoiding premature fiscal austerity is a feasible way to effectively deal with the global jobs crisis while at the same time inducing a benign and more sustainable rebalancing of the global economy. However, it would require much more forceful international policy coordination and a shift in the orientation of the Cannes Action Plan of the Group of Twenty (G20).
Figure 82: (i) GDP growth of selected major economies and country groupings, 2009-2016 (percentage)

Figure 83: (iii) Transition and developing economies
Figure 85: (i) Employment rates of selected major economies and country groupings, 2008-2016 (percentage of working-age population)

Figure 85: (ii) United States
Redesigning macroeconomic policies

Redesigning macroeconomic policies for jobs growth and sustainable development Fiscal policies, in tandem with income and structural policies, will need to be reoriented to foster job creation and green growth.

The third related challenge will be to redesign fiscal policy—and economic policies more generally—in order to strengthen its impact on employment and aid in its transition from a pure demand stimulus to one that promotes structural change for more sustainable economic growth. Thus far, stimulus packages in developed
countries have mostly focused on income support measures, with tax-related measures accounting for more than half of the stimulus provided. In contrast, in many developing countries, such as Argentina, China and the Republic of Korea, infrastructure investment has tended to make up the larger share of the stimulus and strengthened supply-side conditions. The optimal mix of supporting demand directly through taxes or income subsidies or indirectly through strengthening supply-side conditions, including by investing in infrastructure and new technologies, may vary across countries. In most contexts, however, direct Government spending tends to generate stronger employment effects. A prudent policy would be to target public investments towards alleviating infrastructure bottlenecks that mitigate growth prospects, and to supplement this policy with fiscal efforts to broaden the tax base. One priority area would be to expand public investment in renewable clean energy as part of commitments to reduce greenhouse gas (GHG) emissions and in infrastructure that provides greater resilience to the effects of climate change. Such a reorientation of stimulus measures has the potential to provide significantly greater employment effects, as the renewable energy sector tends to be more labour intensive than existing, non-renewable energy generation.

The redesigned fiscal strategy would also need to monitor closely the way in which income growth and productivity gains are shared in society. Recent studies by the IMF, the ILO and the United Nations Conference on Trade and Development (UNCTAD) suggest that rising inequality has implications for the

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21 As shown in annex table A.22, GHG emissions in the Annex I countries to the Kyoto Protocol are projected to decline by about 1 per cent per year during 2011-2013 given the slow recovery in GDP growth and existing plans for improving energy efficiency and emissions reductions. However, the pace of the reduction is too slow to meet the agreed targets under the Kyoto Protocol.
effectiveness of macro-economic policies and global rebalancing. Declining wage shares (resulting from higher unemployment and underemployment or lagging real wage growth) may undermine consumption growth and thereby contribute to national and international imbalances. Labour market and income policies may thus need to supplement fiscal and monetary policies for a more balanced outcome. In particular, allowing labour incomes to grow at the pace of productivity growth can help underpin a steady expansion of domestic demand and prevent income inequality from rising. The supplementary policies could target the unemployed by, for example, providing job-search training, short-term vocational training or general and remedial training. These policies have worked in a number of countries to compensate for sharp declines in vacancies. Social protection policies are another crucial element in cushioning the impact of economic shocks and helping people avoid falling into poverty. They are also important tools for boosting aggregate demand and contributing to the sustainability of economic growth. Just as social transfers, such as family benefits, unemployment benefits and other cash transfers, help protect household consumption against shocks or crises, they also prevent asset depletion that may have adverse long-term consequences and further undermine a sustainable recovery.

Addressing international financial market, commodity price and exchange-rate volatility

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Better coordinated monetary policies and deeper financial reforms are needed to curtail capital flow, exchange-rate and commodity price volatility. The fourth challenge is to find greater synergy between fiscal and monetary stimulus, while counteracting damaging international spillover effects in the form of increased exchange-rate tensions and volatile short-term capital flows. This will require reaching agreement at the international level on the magnitude, speed and timing of quantitative easing policies within a broader framework of targets to redress the global imbalances. This, in turn, will require stronger bilateral and multilateral surveillance, including through more thorough assessment of spillover effects and systemic risks. While this need has been recognized by the G20 and the International Monetary and Financial Committee of the IMF, accelerated progress needs to be made in order to establish an operational framework that will enable timely and concerted action to be taken to (a) address the present major risks in global currency and financial markets and (b) signal when, for example, monetary policies in major developed countries are likely to influence the size and composition of flows to emerging and other developing countries. Cooperative policy solutions should, therefore, take precedence as they can achieve better outcomes for the global economy and offload pressures on developing countries to take strong measures to mitigate the impact of volatile capital flows. Such cooperative policy solutions should also comprise deeper reforms of (international) financial regulation, including those aimed at addressing risks outside the traditional banking system (investment banks, hedge funds, derivatives markets, and so forth). Requiring higher reserve requirements and/or collateral on cross-border portfolio investments by non-banking institutions and setting limits on positions that financial investors can take in commodity futures and derivatives markets may also help stem some of the
volatility in capital flows and mitigate commodity price volatility.

Such measures will, by no means, provide sufficient safeguards against continued volatility in food, energy and other commodity prices. To achieve that, much more will need to be done to ensure a more sustainable supply of these commodities.

These sets of financial reforms will need to be complemented by deeper reforms of the global reserve system, reducing dependence on the dollar as the major reserve currency through, for example, a better pooling of reserves internationally. The sovereign debt crisis in Europe has emphasized the need for much stronger internationally coordinated financial safety nets. This could be achieved through enhancing IMF resources and closer cooperation between the IMF and regional mechanisms of financial cooperation (not just in Europe, but also those in Asia, Africa and Latin America) and through enhancing the role of Special Drawing Rights (SDRs) as international liquidity, while expanding the basket of SDR currencies to include currencies from major developing countries. Such reforms are in the G20 pipeline, but have been sliding down the agenda. Global stability will require that these be moved up the priority list.

**Adequate development financing**

**Ensuring more predictable access to development finance for developing countries will require further reforms to the international financial architecture.**

The fifth challenge is to ensure that sufficient resources are made available to developing countries, especially those possessing limited fiscal space and facing large development needs. These resources will be needed to accelerate progress
towards the achievement of the MDGs and for investments in sustainable and resilient growth, especially in the LDCs. Apart from delivering on existing aid commitments, donor countries should consider mechanisms to delink aid flows from their business cycles so as to prevent delivery shortfalls in times of crisis, when the need for development aid is at its most urgent.

More broadly, the global crisis and the recent financial turmoil have highlighted the need for very large liquidity buffers to deal with sudden, large capital market shocks. Many developing countries have continued to accumulate vast amounts of reserves ($1.1 trillion in 2011) as a form of self-protection. But doing so comes with high opportunity costs and is contributing to the problem of the global imbalances. A better pooling of reserves, regionally and internationally, could reduce such costs to individual countries and could also form a basis for more reliable emergency financing and the establishment of an international lender-of-last-resort mechanism. Broadening existing SDR arrangements could form part of such new arrangements.
Appendix

A coordinated policy scenario for job creation and stronger global growth, 2011-2016

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### Figure 87: Policy Scenario for job creation and stronger global growth

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Source: UN/DESA Global Policy Model

### Figure 88: Policy Scenario for job creation and stronger global growth