



Shockwatch Bulletin: monitoring the impact of the euro zone crisis, China/ India slow-down, and energy price shocks on lower-income countries

Isabella Massa, Nicola Cantore, Jodie Keane, Jane Kennan
and Dirk Willem te Velde

Working Paper 358

Results of ODI research presented
in preliminary form for discussion
and critical comment

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October 2012

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Acknowledgements

ODI gratefully acknowledges the support of DFID in the production of this Working Paper. The views presented are those of the authors and do not necessarily represent the views of ODI or DFID. The authors are grateful to Sheila Page for valuable comments and suggestions received.

ISBN 978 1 907288 93 7
Working Paper (Print) ISSN 1759 2909
ODI Working Papers (Online) ISSN 1759 2917

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Acronyms

BIS	Bank for International Settlements
BRIC	Brazil, Russia, India and China
CIS	Commonwealth of Independent States
CPA	Country Programmable Aid
DAC	Development Assistance Committee
EC	European Commission
ECB	European Central Bank
EIA	(US) Energy Information Administration
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
HS	Harmonised System (of trade classification)
IEA	International Energy Agency
IIF	Institute of International Finance
IFI	International Financial Institution
IMF	International Monetary Fund
LDC	Least Developed Country
LIC	Low-Income Country
LMIC	Lower-Middle-Income Country
MIC	Middle-Income Country
MMBtu	Million British thermal units
mt	metric tonne
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
Q	Quarter
SSA	Sub-Saharan Africa
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
US	United States
WTO	World Trade Organization

Executive summary

This Shockwatch Bulletin has four main purposes:

1. to review the global macro-economic and financial situation and outlook by assessing and comparing existing publications and secondary data;
2. to assess the degree of vulnerability of a selected sample of developing countries to the three current major global shocks (the euro zone crisis, China's and India's growth slow-down, and energy price increases);
3. to examine in detail three case studies (Cambodia, Kenya and Zambia), and report how these countries have been affected by the recent shocks and how they have responded; and
4. to synthesise findings and make suggestions for appropriate policy responses.

The global outlook is generally pessimistic. On the one hand, the knock-on effects of the euro zone crisis on developing and emerging economies through reductions in trade, private capital flows, remittances and aid are becoming increasingly apparent, and the slow-down in growth in China and India is also having important effects on growth in low-income countries. On the other, the euro zone crisis and China slow-down have so far exerted a downward pressure on energy prices, but these are projected to rise in the medium to long term because of resource scarcity. Low energy prices generate benefits for energy importers but losses for energy exporters. The slow-down in China's growth may represent a threat for key commodity exporters.

The degree to which poor economies are vulnerable to the current global shocks varies according to their levels of exposure (determined by certain economic characteristics) and resilience (the ability to cope with and respond to the shock). Looking at a selected sample of low- and lower-middle-income economies, the analysis suggests that eight countries (Ethiopia, Senegal, Tanzania, Armenia, Tajikistan, Moldova, Kyrgyzstan, and Nicaragua) are highly vulnerable to both the current macro-financial and energy price shocks. Notably, only two countries (Indonesia and Nigeria) have a low vulnerability to both shocks. Among the countries highly vulnerable to the global shocks considered in this Bulletin, three (Ethiopia, Senegal and Tanzania) appear to be particularly exposed to a China/India growth slow-down.

The country case studies show that the impacts of the current global shocks are increasingly visible, although to differing extents, in the form of reductions in exports, declining private capital flows and falling remittances and aid flows. Cambodia and Kenya are being affected primarily by the euro zone crisis, while in Zambia it is the slow-down in China's growth which is having the greater impact.

It appears that policies in developing countries have been reasonably successful so far in withstanding shocks, although this applies more to some countries than others. On the one hand we argue that low-income countries need to be more concerned about shocks than previously as they have become more open (trade, investment and remittance shares have grown as a percentage of income in nearly all economies) and global shocks have become more frequent, and therefore the effects of (short-term) shocks can weaken growth and long-term development outcomes. In addition, the slow-down and uncertainty have hit the emerging powers with which low-income countries are increasingly engaging, the effects of the 2008–9 crisis have led to a deterioration in buffers such as fiscal and external balances, and cyclical changes in commodity prices have stimulated growth in many low-income countries, leading some to question the sustainability of growth.

On the other hand, however, we need to qualify these concerns about the growing relevance of shocks: low-income countries are still growing, and faster than developed countries, albeit at a slower pace than would be the case without external shocks; so far the current combined global shocks seem to be having smaller effects than the global economic crisis of 2008–9; better policies have created more room for manoeuvre and slightly more diversified economies (in economic and trade structures and the composition of capital flows) in this decade; the varied nature of shocks, economic structures and transmission mechanisms means that different shocks have very different effects in different countries, and the effects of some shocks cancel each other out with few

countries being highly vulnerable to all current shocks; and finally, many shocks are interdependent with some cancelling each other out.

The main challenges remain the monitoring of external shocks and their possible effects and the introduction of appropriate policy responses, such as measures to raise productivity, targeted towards dealing with shocks that are most pressing at the present time. At the international level, donors need to stand ready to support those countries that are highly vulnerable to the current crises. This means safeguarding the future of shock facilities at the International Monetary Fund, European Commission and World Bank. Moreover, shock facilities, as well as the responses of countries themselves, need to focus more narrowly on targeting productivity increases as a resilience-building strategy, building on the increasing attempts of low-income countries to diversify.

1 Introduction

When the euro zone crisis started deepening in the last quarter of 2011 it became clear that developing countries would also be affected. The fact that growth rates in the emerging Brazil, Russia, India and China (BRIC) economies have started to slow has made the situation even more worrying for the developing world. In May 2012 the International Economic Development Group at the Overseas Development Institute tracked the impact of the euro zone crisis on developing countries (Massa et al., 2012). The study showed that low-income countries (LICs) risked being affected by the euro zone crisis through financial contagion, as a knock-on effect of fiscal consolidation in Europe to meet austerity needs, and for those with currencies pegged to the euro through devaluation. This, together with the growth slow-down in China, risked leading to a decline in exports, investment, remittances and aid, although the findings were that many of the effects were not yet apparent. In addition to this, Cantore et al. (2012) analysed the impact of an oil price increase shock on developing countries. They described the transmission channels leading from an oil price shock to the real economies in developing countries and estimated that a doubling of the oil price could lead to up to a 3% reduction in real gross domestic product (GDP) in a selected set of sub-Saharan African (SSA) countries. These studies indicated that further monitoring of the euro zone crisis, the growth slow-down in China and India and the impact of energy price shocks was required.

This Bulletin therefore provides an update on the macro-economic and financial situation of lower-income developing countries in the context of the largest current global shocks. In particular, it aims to:

- update information on the effects of the euro zone crisis, the slow-down of growth in China and India and energy price shocks by examining the following transmission mechanisms: private capital flows (splitting out portfolio flows, foreign direct investment (FDI) and international bank lending); trade; remittances; aid; and energy prices;
- update information on expected country vulnerability to these shocks;
- examine in more detail a number of countries as case studies, and report how they have been affected by recent shocks and how they have responded;
- continue to monitor policy responses at both the global and country levels.

The Bulletin is structured as follows. In Section 2 we review the current macro-economic situation and outlook, based on recent evidence on trends in and forecasts on macro-financial and energy price variables. We then, in Section 3, assess the degree of vulnerability of selected LIC and lower-middle-income (LMIC) countries to the euro zone crisis, the slow-down of growth in China and India, and energy price shocks. Section 4 contains three case studies (on countries selected to represent differing levels of vulnerability) detailing the *actual* effects of the current crises. In Section 5 we assess the efficacy of current developing country policies in light of the information gathered in the study and put forward suggestions on appropriate action by both developing and donor countries. Section 6 concludes.

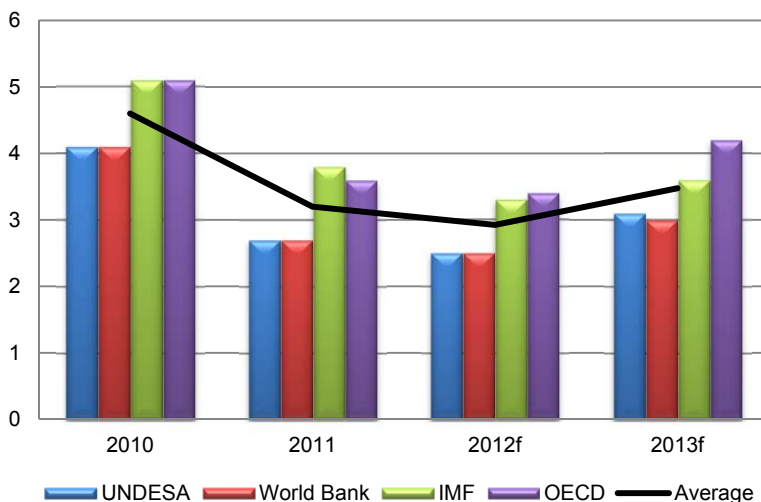
2 Macro-economic situation and outlook

This section provides an update on the global macro-economic and financial situation and outlook by monitoring the most recent evidence on trends in and forecasts on growth, private capital flows (i.e. portfolio equity flows, bond flows, cross-border bank lending and FDI), trade, remittances, aid, and energy. These variables have been selected to allow comparability with results provided in the previous studies by Massa et al. (2012) and Cantore et al. (2012). The section reviews and compares the existing literature and secondary data available. The information gathered and described below shows that the global outlook remains generally pessimistic. The effects of the euro zone crisis on developing economies are becoming increasingly apparent and larger, given the extent of integration of international production networks and financial markets. Commodity prices are still above pre-crisis levels but volatile. In addition to this, the slow-down in growth in China and India is reducing global growth, including in developing countries. The euro zone crisis and China slow-down have exerted a downward pressure on energy prices in the short term, even though they are projected to rise in the medium to long term because of resource scarcity. Low energy prices generate benefits for energy importers but losses for energy exporters. In key commodities such as copper a slow-down of the major importer, China (which accounts for about 40% of the copper world market), may represent a threat for copper exporters such as Zambia.

2.1 Economic growth trends and forecasts

Although there were some signs of a weak but sustained global recovery during 2010, the protraction of the euro zone crisis is starting to take a major toll on the world economy, forcing international organisations to revise their projections downwards. The figures for global GDP growth in the International Monetary Fund's (IMF) October *World Economic Outlook* (IMF, 2012a) are somewhat weaker than those it forecast in July 2012, with growth in 2012 expected to be around 3.3% (a fall of 0.2 percentage points compared to its previous projections in July 2012) and to improve slightly in 2013 to 3.6% (down 0.3 percentage points from the earlier estimates). These forecasts are in line with those provided by the United Nations Department of Economic and Social Affairs (UNDESA), the World Bank and the Organisation for Economic Cooperation and Development (OECD), as shown in Figure 1. Indeed, although their forecasts differ slightly, the international organisations are unanimous in suggesting that the second semester of 2012 will be weaker than previously forecast and in foreseeing a frail recovery in 2013.

Figure 1: World GDP growth (%)



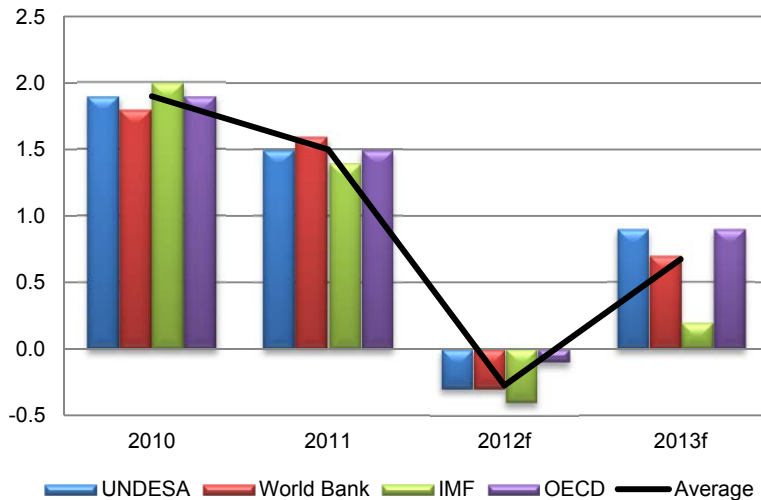
Notes: units represent percentage changes with respect to previous year. The IMF and OECD use purchasing power parity rates. f=forecast.

Source: Authors' calculations based on IMF (2012a), World Bank (2012b), OECD (2012), and UNDESA (2012).

The global downward trend in growth in 2012 is expected to be influenced by euro economies slipping into recession as well as by major growth slow-downs in some emerging economies.

Markets' uncertainty and waning consumer demand are dragging the euro area into recession (Figure 2).

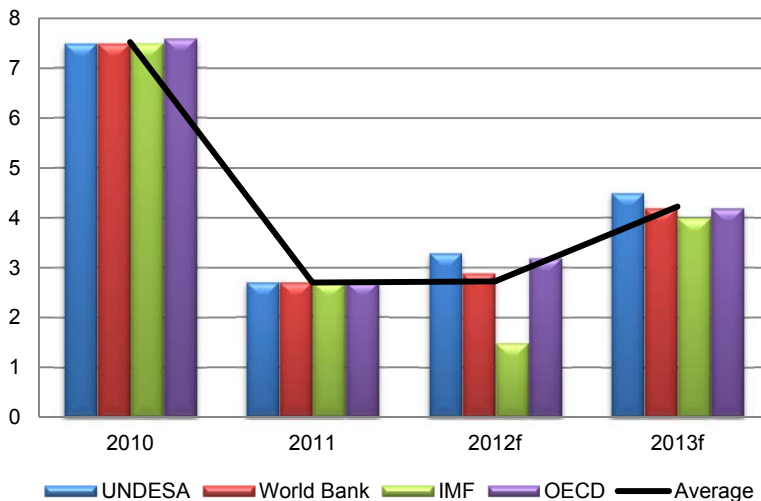
Figure 2: Euro area GDP growth (%)



Notes: units represent percentage changes with respect to previous year. f=forecast.
Source: Authors' calculations based on IMF (2012a), World Bank (2012b), OECD (2012), and UNDESA (2012).

Brazil has lost momentum and its economy has decelerated from an annual growth rate of 7.5% in 2010 to less than 3% in 2011. According to the IMF (2012a), in 2012 Brazil's growth rate is expected to decline further to 1.5% (Figure 3). Weaker internal demand, contraction of export markets and economic policy tightening are the main drivers of Brazil's economic retrenchment.

Figure 3: Brazil GDP growth (%)



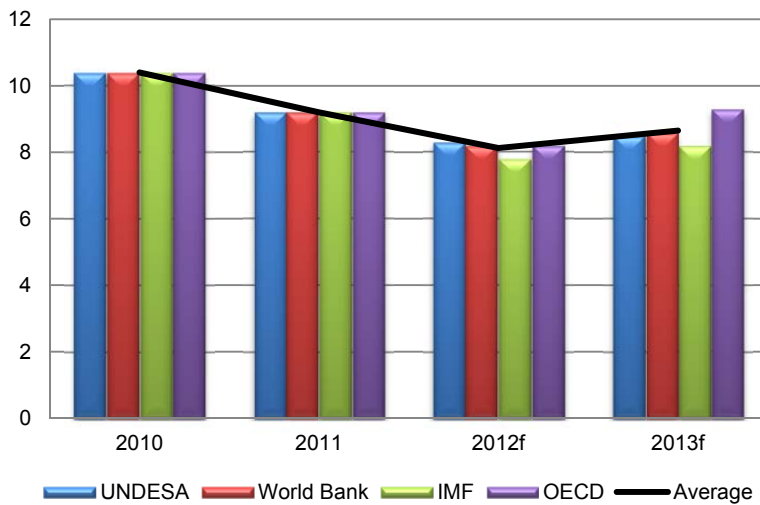
Notes: units represent percentage changes with respect to previous year. f=forecast.
Source: Authors' calculations based on IMF (2012a), World Bank (2012b), OECD (2012), and UNDESA (2012).

China's growth has also suffered from global upheaval. The country has lost on average one percentage point of growth between 2010 and 2012 (Figure 4). The latest (October 2012) estimates from the Asian Development Bank (2012) foresee Chinese growth of 7.7% in 2012 (a downward revision of 0.8 percentage points compared to its previous figures in July 2012) and stabilisation at around 8.1% in 2013 (as opposed to the 8.7% previously forecast). The IMF also reckons that if the European crisis continues it could slice up to 1% off economic activity in China, with severe effects for the rest of the developing world.¹ The contraction in developed world import

1. See <http://www.reuters.com/article/2012/09/11/us-wef-china-wrapup-idUSBRE88A0KF20120911>.

markets has also led to a decrease in China's investment, mainly owing to overcapacity. Furthermore, risks of a housing bubble remain, and although internal demand is gaining pace it is not enough to balance the losses from declining export flows.

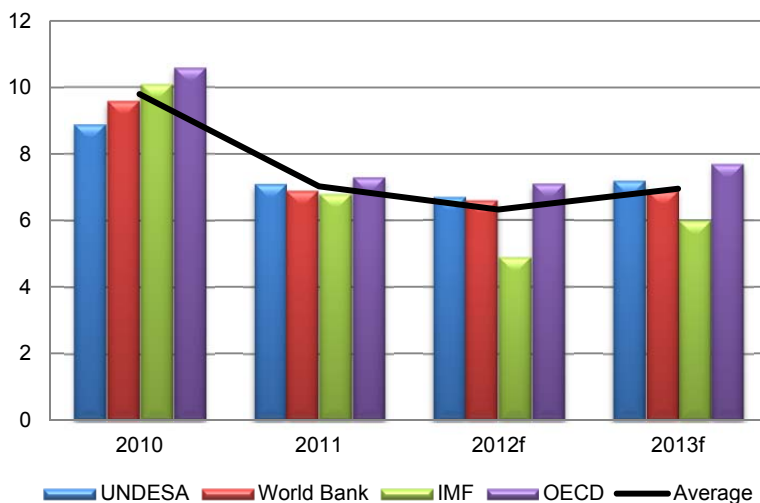
Figure 4: China GDP growth (%)



Notes: units represent percentage changes with respect to previous year. f=forecast.
Source: Authors' calculations based on IMF (2012a), World Bank (2012b), OECD (2012), and UNDESA (2012).

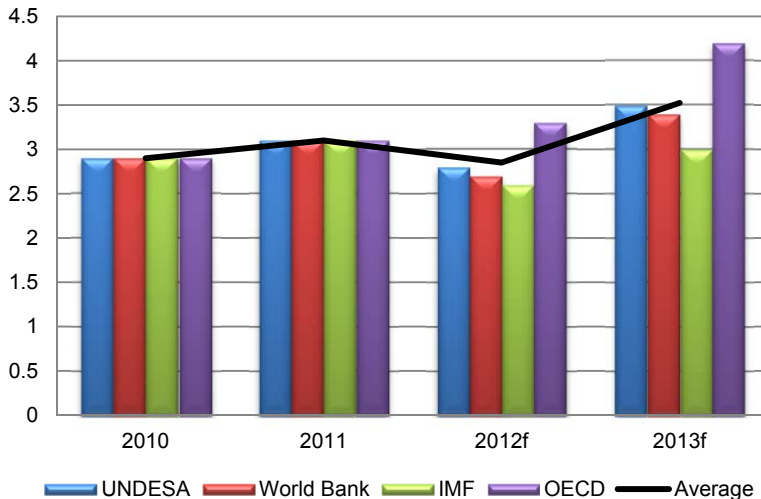
India's economy is currently facing inflationary pressures, trade deficits and growing public debt, which limit government policy space to enact countercyclical measures. These internal weaknesses, together with an adverse international environment, have prompted the IMF (2012a) to revise India's growth prospects downwards by 1.3 percentage points in 2012 and 0.6 percentage points in 2013, to around 4.9% and 6% respectively (Figure 5).

Figure 5: India GDP growth (%)



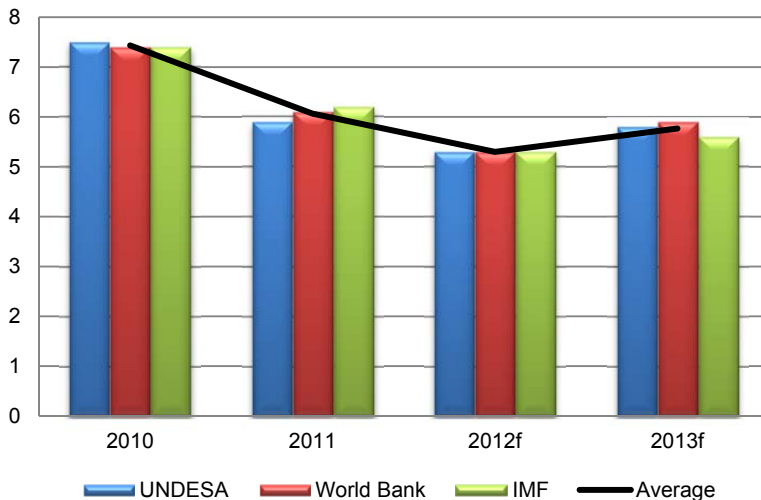
Notes: units represent percentage changes with respect to previous year. f=forecast.
Source: Authors' calculations based on IMF (2012a), World Bank (2012b), OECD (2012), and UNDESA (2012).

Within SSA, the current turmoil in Europe together with slow growth in the United States (US) and other developed economies has taken its toll on South African growth prospects, given the country's significant trade and financial linkages with developed countries. Consequently, the IMF (2012a) has downgraded the 2013 forecasts by 0.3 percentage points, from 3.3% in July 2012 to 3% in October (Figure 6).

Figure 6: South Africa GDP growth (%)

Notes: units represent percentage changes with respect to previous year. f=forecast.
 Source: Authors' calculations based on IMF (2012a), World Bank (2012b), OECD (2012), and UNDESA (2012).

The recession in the euro zone and the consequent contraction of its imports from the developing world have led to a significant reduction in developing countries' growth (Figure 7). The decline in remittances, aid and private capital flows has also contributed to preventing developing countries from maintaining their pre-crisis growth rates. The IMF (2012a) has therefore revised downwards its projections for developing countries' growth for 2012 and 2013. Compared to July 2012, it has lowered the growth projections for 2012 by 0.3 percentage points and by a further 0.2 points for 2013, leaving the projected growth for developing countries in 2012 and 2013 at around 5.3% and 5.6% respectively.

Figure 7: GDP growth in developing countries (%)

Notes: units represent percentage changes with respect to previous year. f=forecast.
 Source: Authors' calculations based on IMF (2012a), World Bank (2012b), OECD (2012), and UNDESA (2012).

From a regional perspective, growth in all developing regions is expected to slow. For developing economies within Asia the contraction is a reflection of both the euro area crisis and weaker performance by China and India, normally the engines of regional growth. Furthermore, reduced global demand has led to a fall in commodity prices, causing a consequent slow-down in resource-dependent economies. As a result, the Asian Development Bank (2012) has revised its regional figures for developing Asia, cutting 2012 growth forecasts by 0.8 percentage points and 2013 forecasts by 0.6 percentage points (Table 1).

Table 1: Developing world GDP growth, by region (%)

Region	2011	2012	2012 revised	2013	2013 revised
Sub-Saharan Africa	5.1	5.1	5.0	5.7	5.7
Developing Asia	7.2	6.9	6.1	7.3	6.7
Latin America and the Caribbean	4.5	3.4	3.2	4.2	3.9

Source: Authors' calculations based on IMF (2012a), and Asian Development Bank (2012).

Latin America and the Caribbean present a heterogeneous outlook. Economies within the region are highly dependent on European and US markets, so the current contraction in global demand is expected to affect overall regional growth. Indeed, this is projected to decline from 4.5% in 2011 to 3.2% in 2012 (down 0.2 points compared to the IMF's forecasts in July 2012, see Table 1) before increasing to 3.9% in 2013. However the two regional giants (Mexico and Brazil) have contrasting experiences: Mexico is weathering the global turmoil reasonably well, maintaining stable growth rates at around 4%, while Brazil has suffered a significant slow-down (see Figure 3). This is because Mexico and Central American countries have high links to the US, which has recently performed better than the euro area, while Brazil and other South American countries are more closely linked to the euro area and heavily dependent on commodity markets.

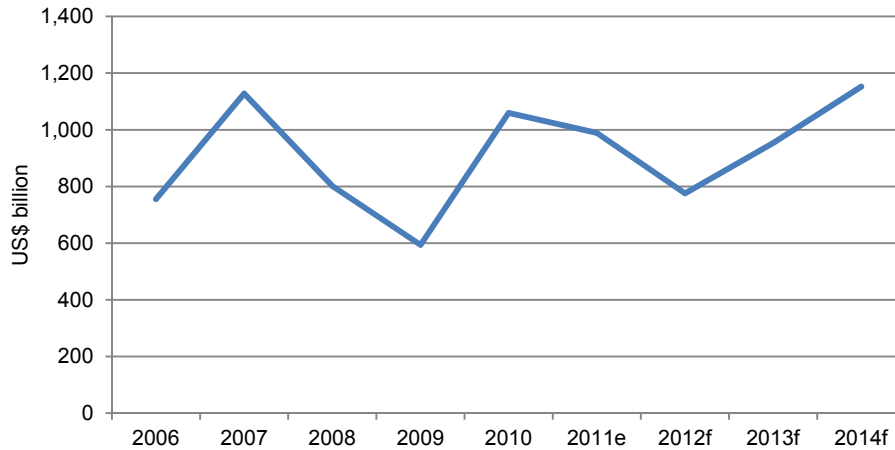
Notably, SSA has been able to maintain its rate of economic growth throughout the global slow-down. Improved internal demand, supportive macro-economic policies, new resource production within the region and limited financial linkages to international markets have helped the region to continue its growth trend. However, capital flow and commodity price volatility is a major cause of instability for the region, and as the euro zone crisis escalates SSA risks starting to feel the effects of the global slow-down. For the time being, however, according to the IMF (2012a) the regional economic outlook looks stable, with just a minor downward adjustment of 0.1 percentage points during 2012 and no changes during 2013 (Table 1). The IMF's forecasts on SSA growth in 2012 appear to be slightly more pessimistic than those released in May 2012 by the African Development Bank (2012a), according to which growth in SSA was projected to be 5.4% in 2012.

2.2 Private capital flow trends and forecasts

Net private capital flows to developing economies remain quite volatile owing both to the euro area crisis and other factors, including the possibility of a hard landing of the Chinese economy, the political turmoil across the Middle East, and capital control measures adopted by a few countries such as Brazil. According to the World Bank (2012b), net private capital flows fell to US\$ 989 billion in 2011 from US\$ 1,060 billion in 2010, and in 2012 they are expected to decline further by more than 20% to US\$ 775 billion (Figure 8).² Nevertheless, medium-term prospects for developing countries remain high thanks to the better risk profiles, higher growth prospects, and higher interest rates of emerging markets compared to mature economies. Indeed, in 2013 net private capital flows to developing countries are projected to recover to US\$ 953 billion before jumping to US\$ 1,152 billion in 2014, which is above their 2007 peak level (Figure 8). These projections are in line with those of UNDESA (2012) as well as with those provided by the Institute of International Finance (IIF, 2012a) which also expects net private capital flows to emerging economies to lower in 2012 before recovering in 2013.

2. Note that middle-income economies (MICs) were hit harder than LICs in terms of declines in private capital flows. Indeed, the World Bank (2012b) reports that in 2011 private capital flows to LICs increased by an estimated 15% compared to a 10% decline in MICs.

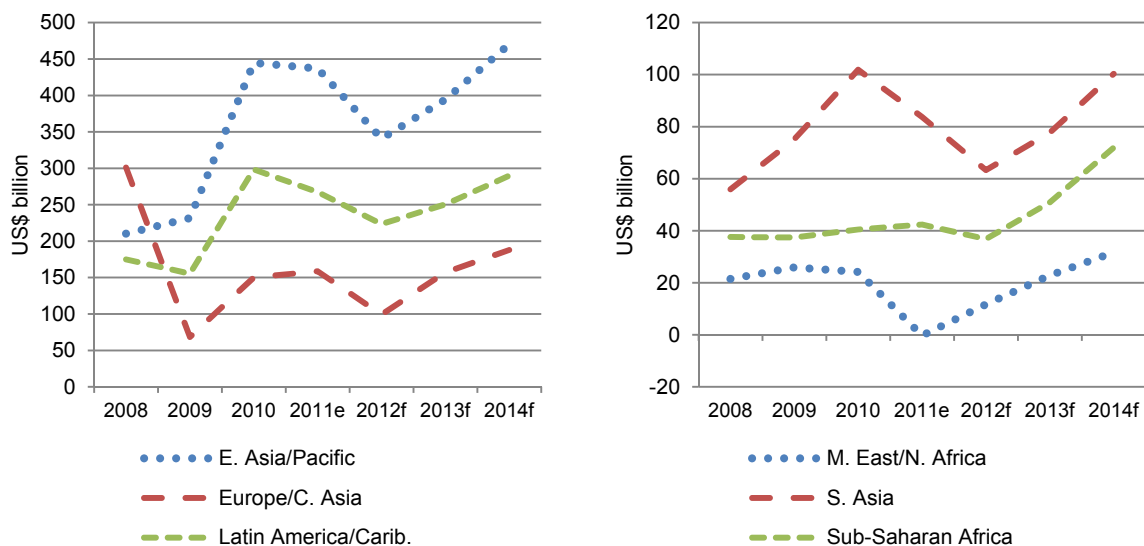
Figure 8: Net private capital inflows to developing countries, 2006–14



Source: Adapted from World Bank (2012a; 2012b). Notes: e=estimate, f=forecast.

Aggregate data, however, mask important differences across developing regions. Figure 9 shows that notably net private capital flows to SSA rose by 5% in 2011 to US\$ 42 billion. According to the World Bank (2012b), the subdued response to the crisis by private capital flows in SSA in 2011 is because FDI, which is believed to remain more stable in the face of shocks than equity and bond flows, accounts for the largest share of private capital flows in the region (about 70%). Nevertheless, net private capital flows to SSA are forecast to fall by 13% in 2012. A considerable fall in 2012 (of 37%) is forecast in net private capital flows to Europe and Central Asia, which suffered particularly from the deleveraging of European banks. South Asia and East Asia and the Pacific are also forecast to experience declines of more than 20% in 2012. Slower growth in China and rising concerns about India have contributed to pressures on financial markets in these regions (IMF, 2012b). The Middle East and North Africa experienced the highest decline (about 100%) in net private capital flows in 2011 compared to 2010, but this was mainly because of the high degree of political uncertainty within the region. A recovery in net private capital flows in all developing regions is projected in 2013 and 2014 (Figure 9).

Figure 9: Net private capital inflows to developing countries by region, 2008–14



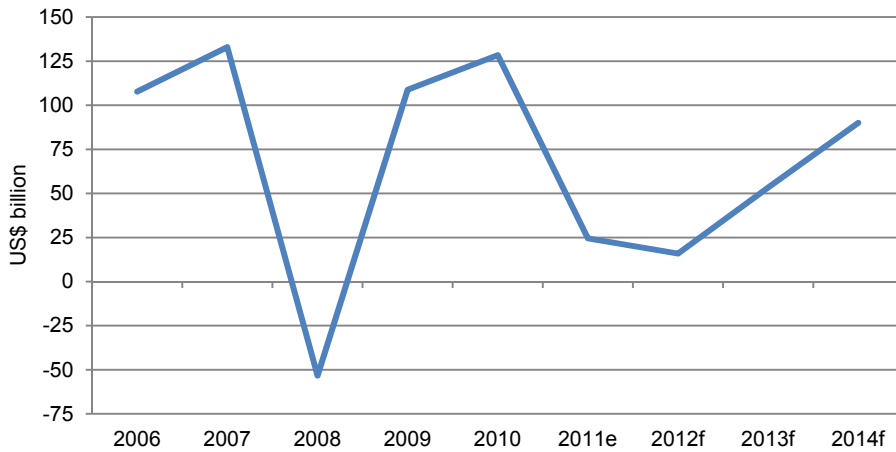
Notes: e=estimate, f=forecast.

Source: Adapted from World Bank (2012b).

Notable differences emerge also across the different types of private capital flow. Portfolio equity inflows were among the hardest hit during the recent global turmoil. As shown in Figure 10, these dropped by more than 80% to US\$ 25 billion in 2011 from US\$ 128 billion in 2010, and are expected to decline further to US\$ 16 billion in 2012. Figure 11 shows that all developing regions

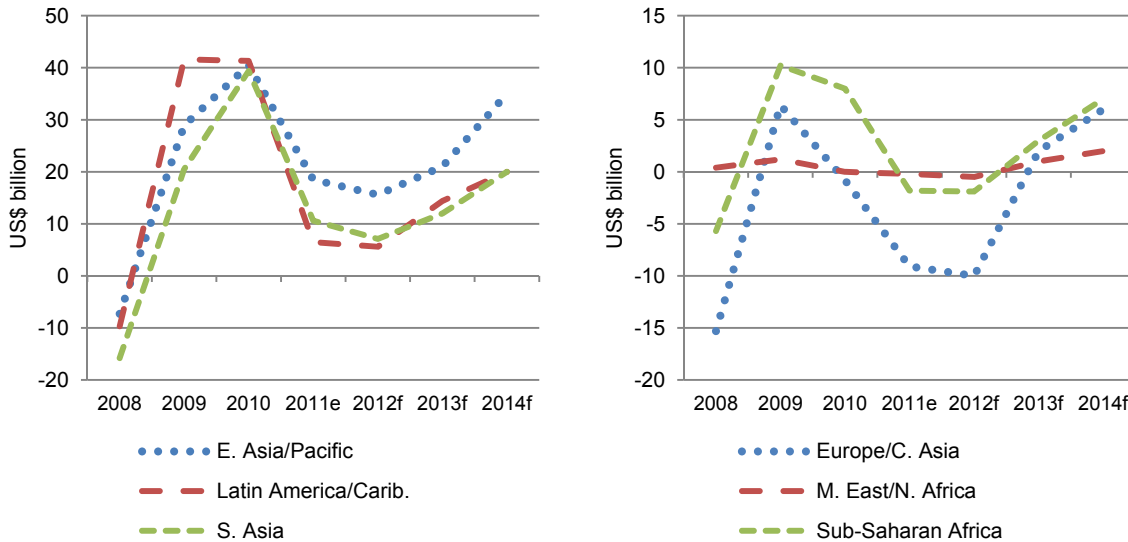
experienced significant declines in portfolio equity flows over the year 2011 and to a lesser extent 2012. High-frequency data, however, show that capital market conditions improved over the first four months of 2012. Improved growth prospects in the US and the long-term refinancing operations launched by the European Central Bank (ECB) in late December 2011 and at the end of February 2012 boosted investors' confidence and led to significant rebounds in equity markets in emerging economies, as shown in Figure 12. Nevertheless, new tensions arising from the escalation of the euro zone crisis and increased concerns about slowing growth in China, India and Brazil hit equity markets in developing countries again in May 2012, when equity prices as measured by the MSCI Emerging Markets index dropped by about 10% (Figure 12). The World Bank (2012b) reports that across all developing regions, Eastern Europe was the hardest hit by equity price declines in May 2012. In 2013 and 2014, portfolio equity flows are projected to recover but remain below the pre-crisis levels in 2010 (Figure 10).

Figure 10: Portfolio equity inflows to developing countries, 2006–14



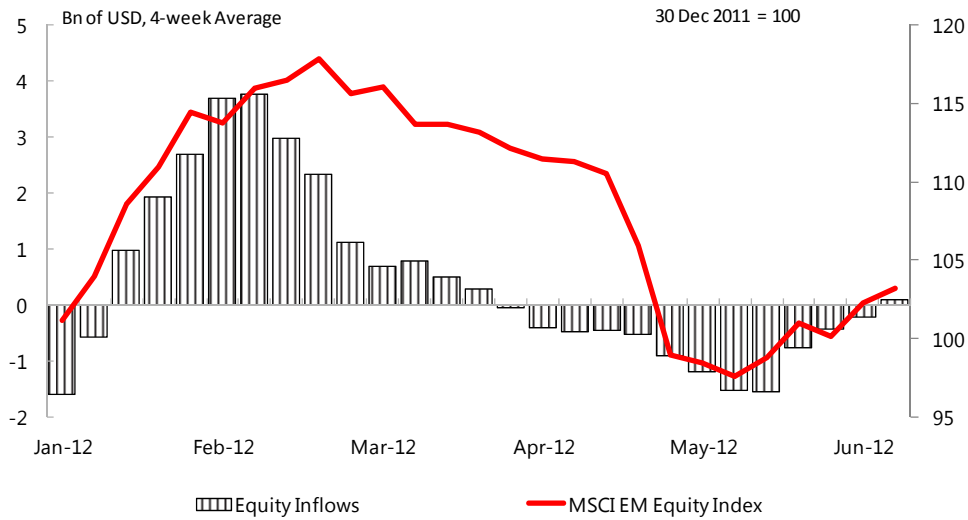
Notes: e=estimate, f=forecast.
Source: Adapted from World Bank (2012a; 2012b).

Figure 11: Portfolio equity inflows to developing countries by region, 2008–14



Notes: e=estimate, f=forecast.
Source: Adapted from World Bank (2012b).

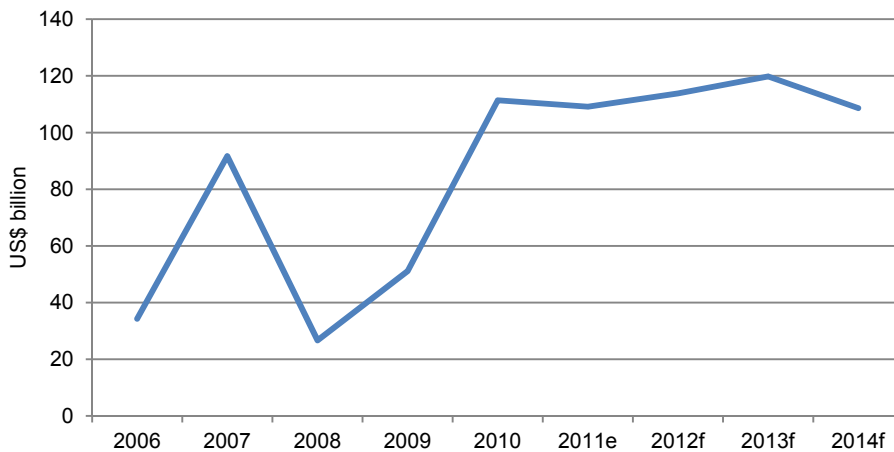
Figure 12: Emerging markets: equity inflows (US\$ billion) and price, January–June 2012



Note: MSCI Emerging Market Equity Index on secondary axis.
 Source: Adapted from IMF (2012b).

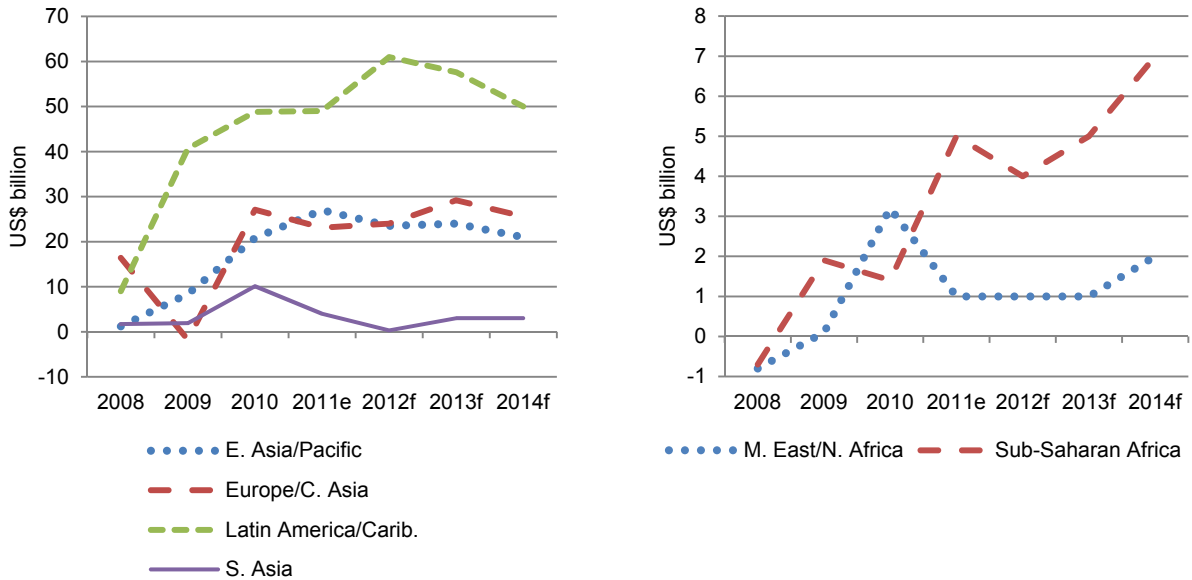
Compared to portfolio equity flows, bond flows have been more resilient to the global external shocks. Indeed, they experienced a decline of just 2% between 2010 and 2011, and are forecast to increase to US\$ 114 billion in 2012, from US\$ 109 billion in 2011 (Figure 13). From a geographical perspective, the decline between 2010 and 2011 was mostly owing to sharp drops in bond flows to the Middle East and North Africa and to South Asia – of 70% and 60% respectively (Figure 14). In 2013 bond flows are expected to continue increasing, before a downturn in 2014 to values close to those of 2010 (Figure 13).

Figure 13: Bond flows to developing countries, 2006–14



Note: e=estimate, f=forecast.
 Source: Adapted from World Bank (2012a; 2012b).

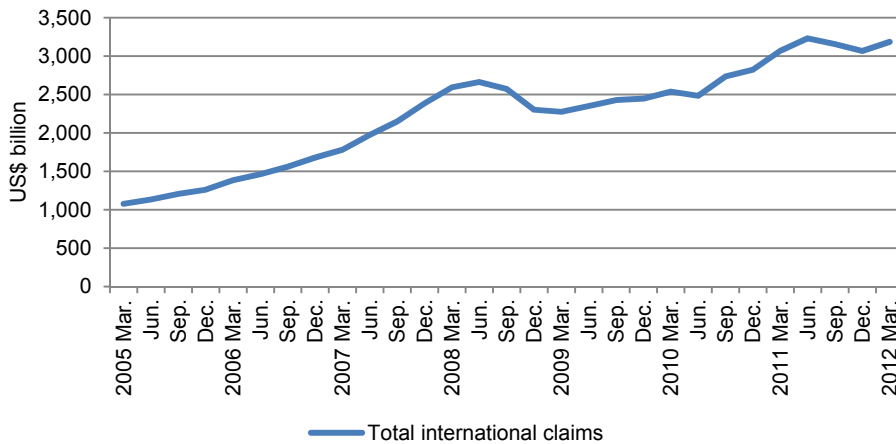
Figure 14: Bond flows to developing countries by region, 2008–14



Note: Middle East and North Africa, and Sub-Saharan Africa on secondary axis. e=estimate, f=forecast
 Source: Adapted from World Bank (2012b).

Cross-border bank lending in developing countries has been affected by the continued deleveraging of banks’ balance sheets, especially in Europe, and the tightening in financial regulatory requirements. Figure 15 shows that international claims to developing countries by Bank for International Settlements (BIS) reporting banks declined by 5% from June to December 2011, before recovering in March 2012 to values which are, however, still below the peak of June 2011. It is also worth noting that the rate of growth of cross-border bank lending to developing countries has weakened considerably since 2008. Indeed, it has declined from an average quarterly rate of 7.5% prior to 2008 to just 1.8% since then.

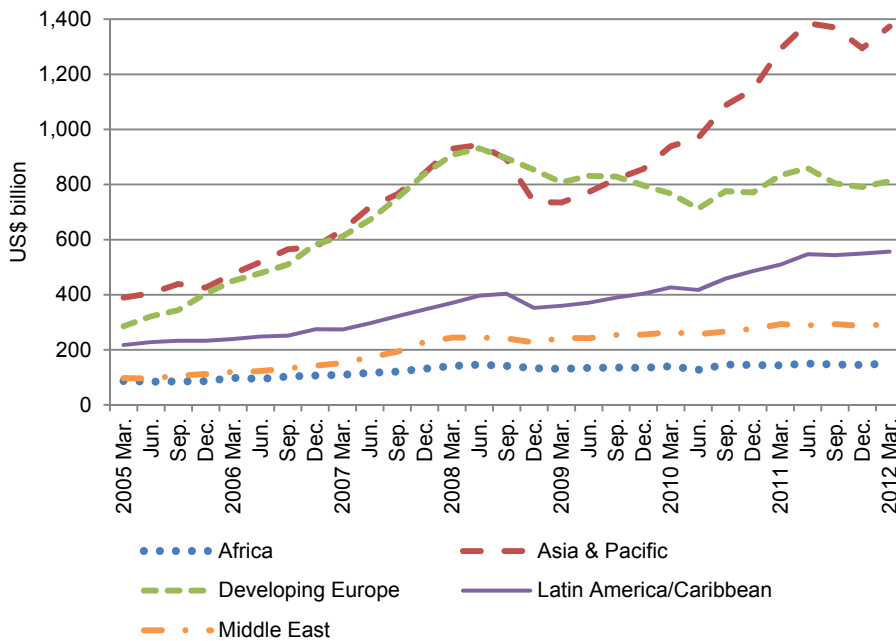
Figure 15: Cross-border bank lending to developing countries, March 2005–March 2012



Note: total international claims, immediate borrower basis.
 Source: Authors’ calculations based on BIS Consolidated Banking Statistics.

Among developing regions, between June and December 2011 the impact was the highest in developing Europe, Asia and the Pacific, and Africa, which experienced drops in total international claims of about 8%, 7% and 3% respectively (Figure 16).

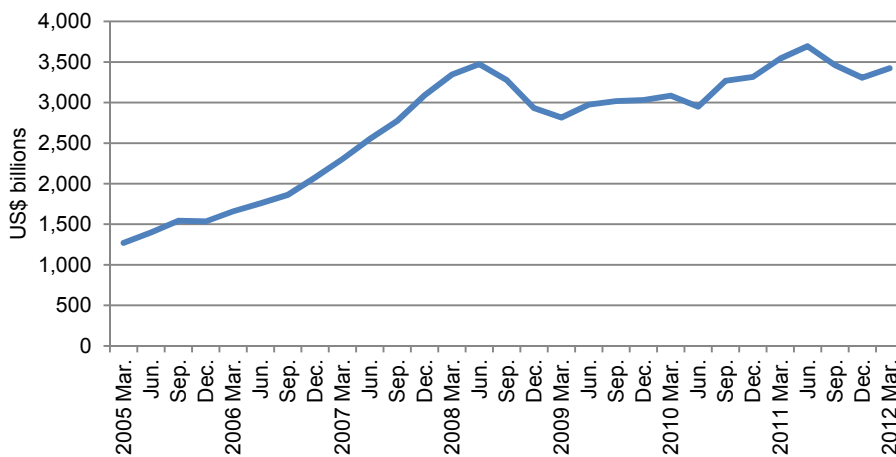
Figure 16: Cross-border bank lending to developing countries by region, March 2005–March 2012



Note: total international claims, immediate borrower basis.
 Source: Authors' calculations based on BIS Consolidated Banking Statistics.

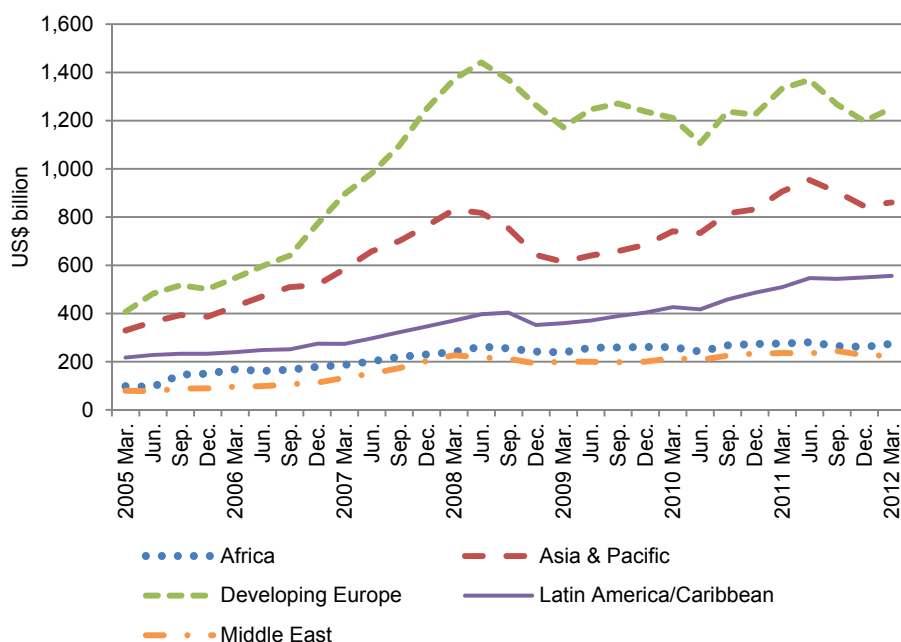
BIS data show that the liquidity squeeze has significantly restricted lending from European financial institutions to developing countries. Indeed, this declined by 11% between June and December 2011 (Figure 17). The decline was sharper in developing Europe (12%), Asia and the Pacific (11%), and Latin America and the Caribbean (10%) (Figure 18). Between June and December 2011 developing countries were also hit by important declines in cross-border bank lending from emerging markets such as India. Indeed, as shown in Figure 19, foreign claims to developing economies from Indian banks dropped by 11% over this period.

Figure 17: Cross-border bank lending to developing countries from European banks, March 2005–March 2012



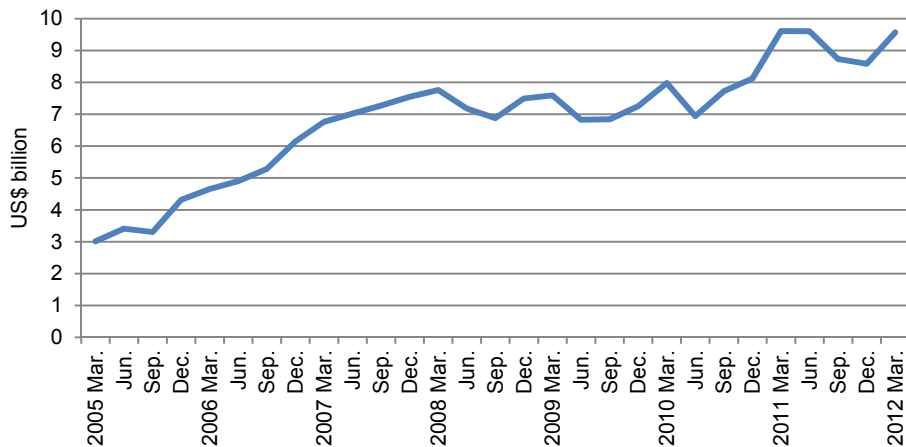
Note: consolidated foreign claims from reporting banks, immediate borrower basis.
 Source: Authors' calculations based on BIS Consolidated Banking Statistics.

Figure 18: Cross-border bank lending to developing countries from European banks by region, March 2005–March 2012



Note: consolidated foreign claims from reporting banks, immediate borrower basis.
Source: Authors' calculations based on BIS Consolidated Banking Statistics.

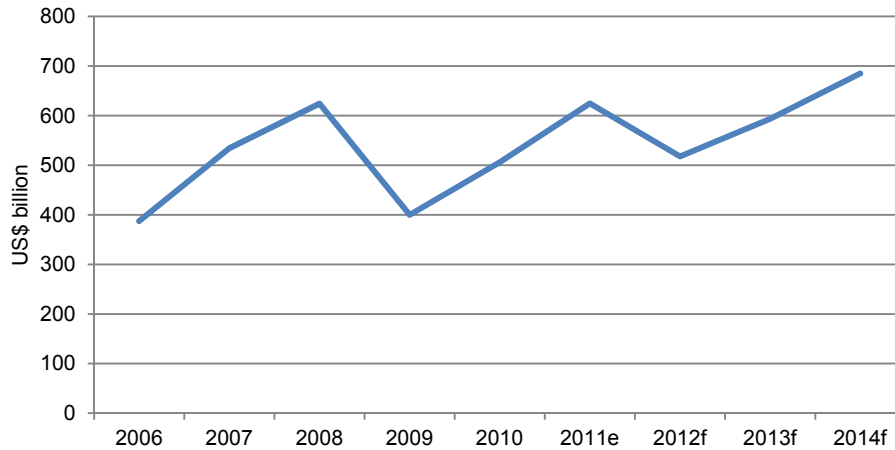
Figure 19: Cross-border bank lending to developing countries from Indian banks, March 2005–March 2012



Note: consolidated foreign claims from reporting banks, ultimate risk basis.
Source: Authors' calculations based on BIS Consolidated Banking Statistics.

According to the World Bank (2012b), FDI inflows to developing countries continued to increase in 2011, reaching a record US\$ 625 billion (Figure 20). However they are projected to decline by 17%, to US\$ 518 billion, in 2012, before recovering in 2013 and further increasing in 2014, when they are expected to reach a value of US\$ 685 billion – which is above the peak value of 2008 (Figure 20).

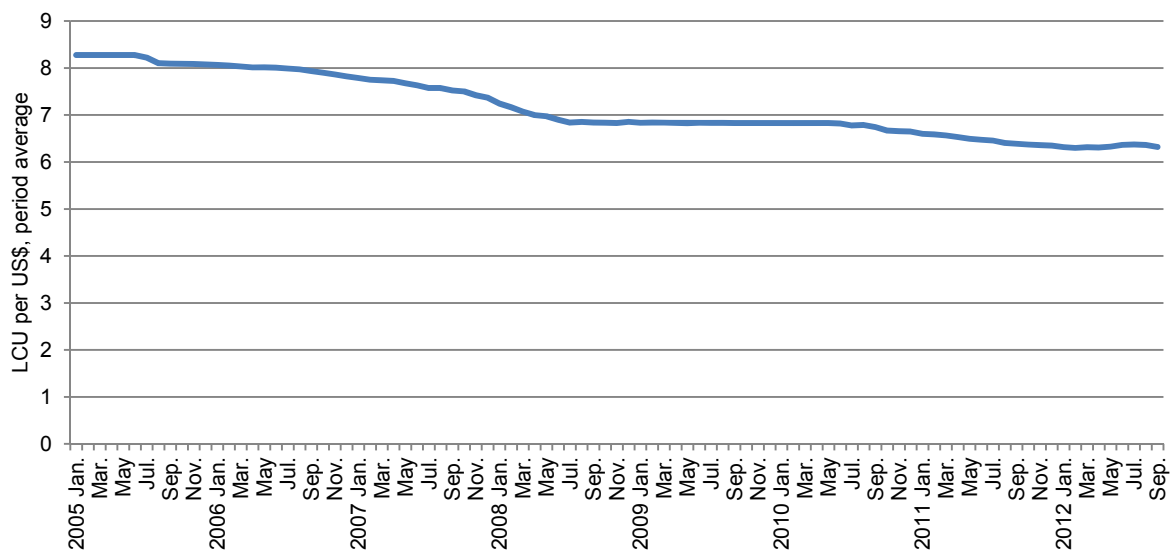
Projections on FDI inflows to developing countries by the United Nations Conference on Trade and Development (UNCTAD, 2012) are more optimistic than those of the World Bank (2012b). Indeed, after reaching a record US\$ 684 billion in 2011, FDI inflows are expected to experience moderate growth in 2012 to US\$ 670–760 billion, and then to increase further in 2013 and 2014, when they are projected to reach US\$ 755–930 billion (UNCTAD, 2012a). Note, however, that in its latest Global Investment Trends Monitor UNCTAD (2012b) estimates that FDI flows to developing countries have declined by about 5% in the first half of 2012.

Figure 20: FDI inflows to developing countries, 2006–14

Notes: e=estimate, f=forecast.

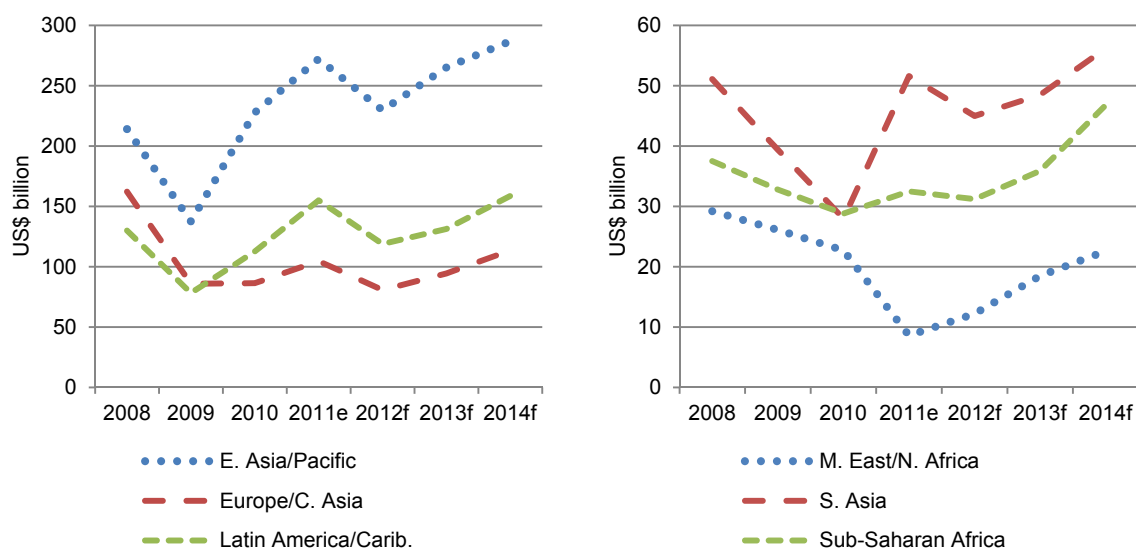
Source: Adapted from World Bank (2012a; 2012b).

On the other hand, according to the IIF (2012a) FDI inflows to emerging markets are projected to decline in 2012, mainly because of an expected sharp decline in FDI flows to China and possibly to India. In fact, the higher exchange rate (Figure 21) and rapid wage growth in China are expected to make the country a less attractive destination for FDI flows from higher-income economies. The introduction of two controversial tax measures on foreign investment in India is likely to have an adverse effect on its FDI inflows. In 2013 FDI inflows to emerging markets are expected to rebound to values close to the historical high reached in 2008.

Figure 21: China's exchange rate, January 2005–September 2012

Source: World dataBank, Global Economic Monitor dataset.

From a geographical perspective, and according to the World Bank (2012b), in 2011 all developing regions experienced an increase in FDI inflows (with the exception of the Middle East and North Africa, where FDI inflows dropped by more than 60% to US\$ 9 billion because of the political turmoil) (Figure 22). The greatest increase in FDI in 2011 was experienced by South Asia, where FDI inflows rose to US\$ 51.6 billion – largely owing to an increase in FDI flows to India, especially in the communications sector (World Bank, 2012b; IIF, 2012b). It is noteworthy that in 2011 FDI inflows continued to increase in Europe and Central Asia, notwithstanding the crisis in the euro area; and FDI inflows to Latin America reached a record US\$ 155 billion, thanks to the region's growth, high momentum and high commodity prices, among other factors (IIF, 2012b).

Figure 22: FDI inflows to developing countries by region, 2008–14

Notes: Sub-Saharan Africa, South Asia, and Middle East and North Africa on secondary axis. e=estimate, f=forecast.
Source: Adapted from World Bank (2012b).

FDI inflows to Africa as a whole (i.e. including North Africa) fell for the third consecutive year.³ According to the African Development Bank (2012a), they declined from US\$ 60 billion in 2009 to US\$ 55 billion in 2010, and further to US\$ 54 billion in 2011. While UNCTAD (2012) projects a rise in FDI inflows to Africa in 2012, the African Development Bank (2012a) expects a further decline to US\$ 53 billion over the same year.

According to the World Bank (2012b), in 2012 all developing regions (except the Middle East and North Africa) are projected to experience a contraction in FDI inflows, before recovering over the years 2013 and 2014 (Figure 22). In particular, FDI inflows to SSA are expected to decline by 4% in 2012. FDI inflows to East Asia are also expected to decline over the same year, mainly because of a contraction in FDI flows directed to China (IIF, 2012b). Indeed, while China is projected to remain the top destination for FDI among emerging economies in 2012 and 2013 (IIF, 2012a and b), recent evidence shows that FDI into China had contracted by 8.7% in July 2012 compared with July 2011, and was down 3.6% in the first seven months of 2012 (Anderlini, 2012). This trend clearly shows that foreign investors' confidence in China's outlook is declining, probably because of the worsening of its growth prospects. In a similar way, FDI inflows to South Asia are expected to decline because of the growth slow-down in India (IIF, 2012b; UNCTAD, 2012). In addition to this, there is evidence that FDI outflows from China dropped by 5% in 2011 compared to 2010, while those from India increased by 12% over the same period (UNCTAD, 2012).

According to the latest estimates released by UNCTAD (2012b), in the first half of 2012 FDI inflows to developing Asia fell by about 11%, while those directed to Latin America and the Caribbean and to Africa (with North Africa, and in particular Egypt, leading the way) increased by 8% and 5% respectively.

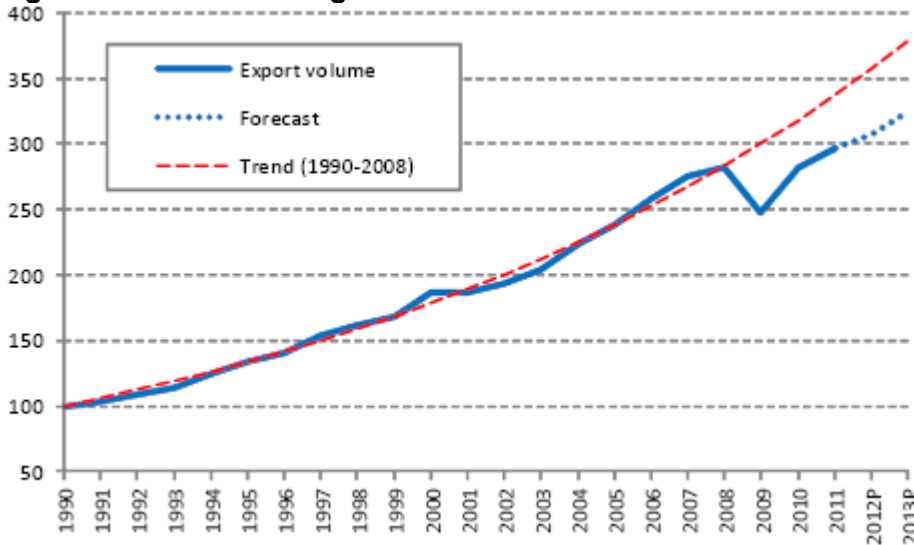
2.3 Trade volume and value trends and forecasts

A further reduction in the rate of growth of global trade is expected in 2012, in the wake of that in 2011. As a result of the revisions to global growth projections, the most recent forecast by the World Trade Organization (WTO) for growth in world merchandise trade in 2012, at 2.5%, is less

3. Notably FDI inflows to Egypt and Libya, which are the two major recipient countries in the Africa region, were negligible in 2011, while new oil- and gas-producing countries such as Nigeria and Angola emerged as major recipients of FDI (UNCTAD, 2012). Equatorial Guinea, Uganda and Ghana also benefited from high FDI inflows (*ibid.*).

than half the long-term annual average for the period 1990–2008 of 6%.⁴ Moreover, according to most recent forecasts, growth in world trade volumes is expected to remain below trend (Figure 23). Although world trade volumes are above pre-crisis levels, the rate of expansion continues to fall short of earlier levels (WTO, 2012).

Figure 23: Forecasts of global trade volumes



Source: WTO (2012).

A slow-down in European Union (EU) trade is apparent. For example, as noted by the European Commission (EC) (2012a: 20), after a steep decline during the initial crisis and a rapid recovery in 2010, euro area imports of goods and services from outside the euro area are currently increasing more slowly than exports; in the fourth quarter of 2011 total imports of both goods and services grew at over 6% on an annual basis, whilst goods imports from outside the euro area grew only by 2.2% and imports of services by 0.9%.

An increasing divergence in trade patterns is occurring between developing and developed countries and among regions. Growth in both exports and imports is projected to be higher for developing than developed countries in 2012, which to some extent reflects on-going rebalancing processes between surplus and deficit countries (WTO, 2012); this is also a normal pattern.

Depressed foreign demand and inventory adjustments have cut growth prospects in China by at least one percentage point more than anticipated last year according to Huang (2012), who also reports that growth in manufacturing output has been revised downwards, hitting a nine-month low. As a result it is likely that growth in GDP for China will be below target in 2012. Not only are there reductions in growth, there has also been a sharp decline in China's trade surplus from over 8% of GDP five years ago to around 2% last year, which suggests that macro rebalancing from external to domestic demand is taking place sooner than expected (*ibid.*).

After experiencing considerable growth in 2011 compared to 2010, some commodity imports into China have begun to grow more slowly. Analysis of China's recent trade data across product categories (see Appendix 1, Figures 3–8) suggests that demand for imported products such as wood, paper and pulp, as well as textiles and clothing, held up relatively well in 2011. The situation appears to have changed in the first half of 2012 for some product categories, though. For example, imports of wood products show a fall in of 3.6% in January–July 2012 (over the same months in 2011), and of 4.7% in the latter three months (May–July). Imports of base metals began to experience negative year-on-year growth in June 2012. In the case of imports from SSA, those within the categories of agricultural products and base metals appear to be slowing to a greater extent than those from the world as a whole (see Appendix 1). However, these products are the

4. See: http://www.wto.org/english/news_e/pres12_e/pr676_e.htm.

exceptions: growth in total imports from SSA and across all of the other product groups analysed has managed to outstrip that of imports from the world as a whole.

As discussed by the World Bank (2012b), should China not succeed in engineering a soft landing of its economy, demand for and prices of major metals and minerals could decline significantly. Because of China's considerable world market share – which exceeds 50% for global metals and 7% for oil – a severe slow-down will affect commodity exporters in SSA, their domestic demand, government account and current account balances.

It is easy to understand the role of the slow-downs in the euro zone and China for commodity exporters if we look at the copper market. Over the period 2008–10 copper experienced a 41% decrease in real price in 2009 and a 7% increase in 2010. The value of the copper exports of Zambia (the largest LIC or LMIC exporter of copper, with a net copper imports/GDP ratio of 27% in 2010⁵) increased during this period from US\$ 2 billion to more than US\$ 4.5 billion (Table 2). It is interesting to note that whereas exports to the euro zone fell from US\$ 44 million in 2008 to US\$ 31.5 million in 2010, those to China rose from US\$ 88 million to US\$ 1.2 billion, about 20% of Zambia's total copper exports. Switzerland, however, remains Zambia's most important commercial partner in the copper market.

Table 2: Zambian copper exports, 2008–10

Year	Copper real price (US\$/mt, real 2005\$)	Zambian copper exports (US\$)			
		World	Euro zone	China	Switzerland
2008	5,940.94	2,113,743,715	44,485,609	88,064,309	1,497,470,992
2009	4,710.45	2,249,855,402	26,929,075	290,070,234	1,539,290,110
2010	6,672.20	4,575,355,748	31,576,161	1,219,434,167	2,870,594,512

Sources: Export values – UN COMTRADE database (data for Harmonised System (HS) code 7403); prices – World dataBank, Global Economic Monitor dataset.

The International Copper Study Group (2012) reports that in 2013 increased copper output from new and existing mines could exceed demand by about 350,000 metric tonnes (mt), reversing the trend of the past three years. The report mentions numerous contributory factors to the decline in world demand for copper, including the world economic slow-down, EU sovereign debt issues and political disturbances in the Middle East and North Africa. In particular, demand growth in China (the main copper importer with 40% of the world demand) is anticipated to slow by 3.6% in 2012, a contraction in EU demand is expected, and no growth in demand by Japan is foreseen.

According to the EC (2012b), within the euro zone managers in the manufacturing sector have in recent months become more pessimistic about their export order books as a result of the continuing uncertainty within the euro zone and the global economy more broadly. Exporters have also been affected by volatility in exchange rates. As noted by the EC (2012b), after a few months of declining exchange rate volatility, the renewed focus on the euro area sovereign debt crisis and heightened concerns about the economic outlook affected foreign exchange markets over the second quarter of 2012; during this period the euro depreciated substantially against the US dollar. Since then it has moved in a rather narrow band.⁶ However, any potential exit of Greece from the euro zone is likely to result in heightened volatility.

These exchange rate developments have affected the availability of trade finance. For example, as discussed by the World Bank (2012b), dollar liquidity constraints negatively affected the availability and pricing of trade finance disbursed by European banks – major players in the global trade finance market – in Q4 2011. Data on flows suggest some decline in the last quarter of 2011; overall syndicated trade finance declined from a post-crisis high of 2.8% of developing country exports to a post-crisis low of 1.4% in the first quarter of 2012 (*ibid.*). The declines in availability

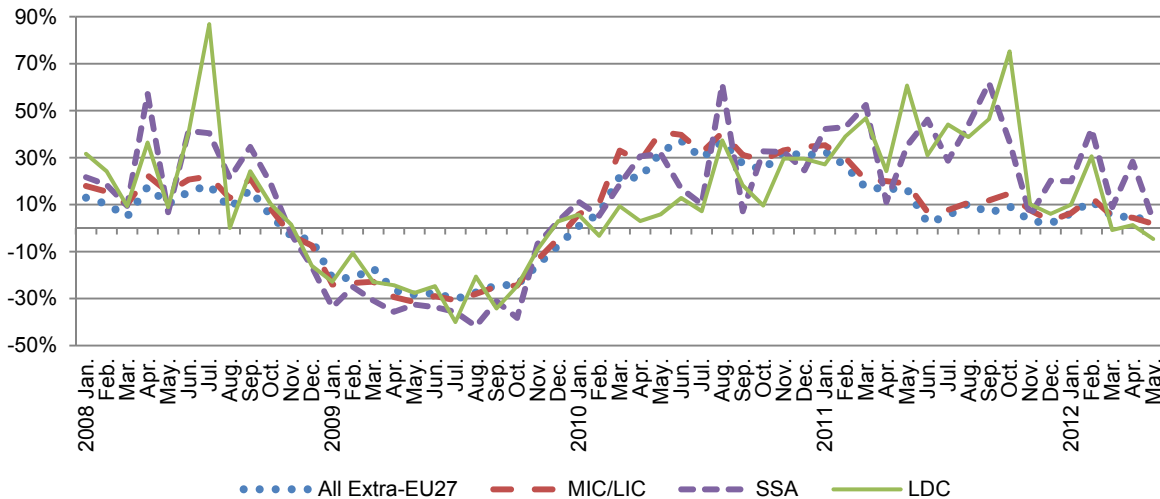
5. Authors' calculation based on export value data from the UN COMTRADE database and GDP data from the World databank World Development Indicators dataset.

6. See: http://ec.europa.eu/economy_finance/db_indicators/key_indicators/documents/key_indicators_en.pdf

and increases in cost of trade finance are likely to affect small- and medium-sized enterprises more than others,⁷ including those in developing countries.⁸

There is little difference between the severity of the decline in the monthly value of imports into the euro zone economies compared to the EU as a whole (see Figures 24 and 25): growth in the value of imports into both regions slowed during the first quarter of 2012. In both cases, imports from least developed countries (LDCs) declined in value in May 2012 (as did those into the euro zone from SSA), and little month-on-month growth was achieved by any of the other country groups shown in the figures.

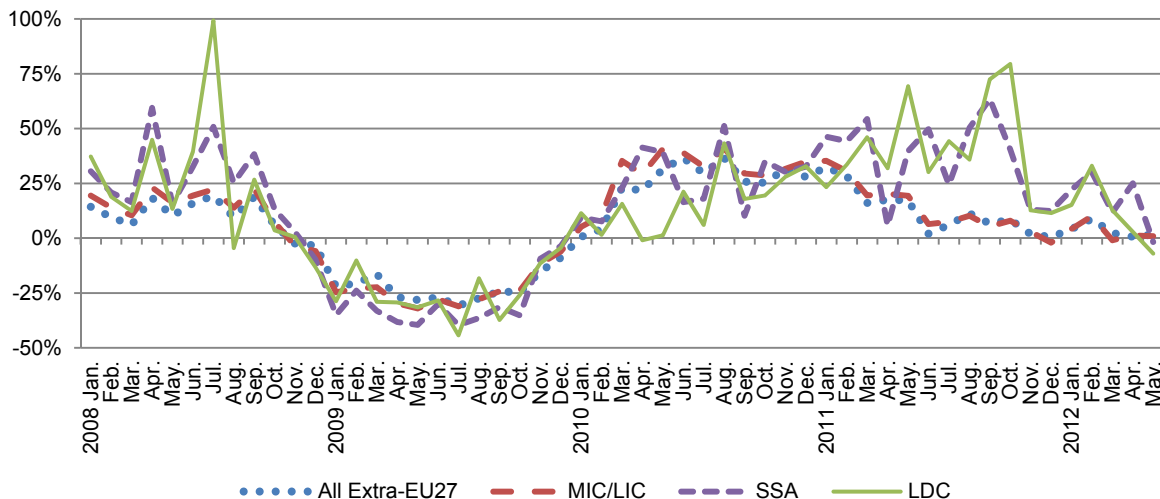
Figure 24: EU imports: monthly year-on-year change, Jan. 2007–May 2012



Note: Based on the value of monthly EU imports.

Source: Authors' calculations based on data from Eurostat COMEXT database.

Figure 25: Euro zone imports: monthly year-on-year change, Jan. 2007–May 2012



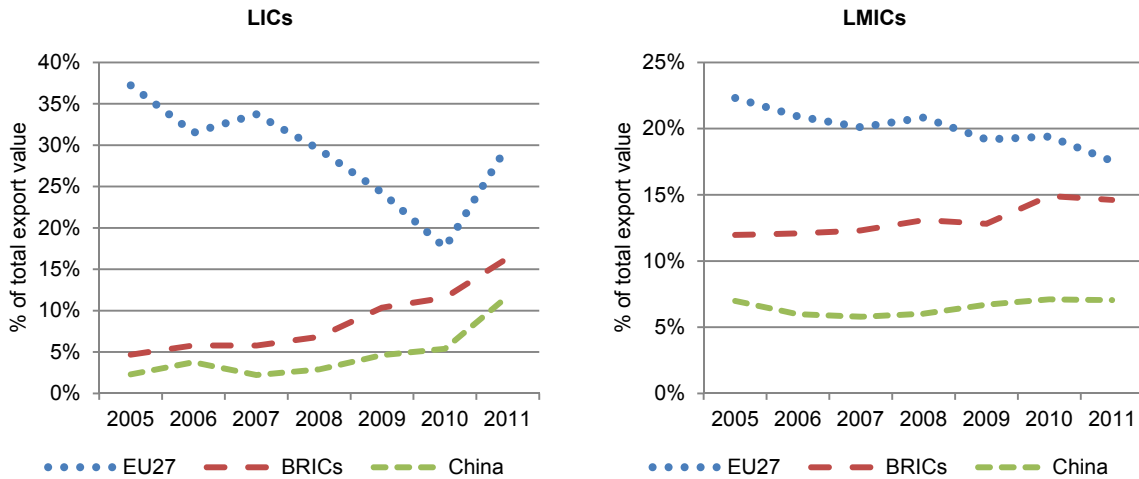
Note: Based on the value of monthly EU imports.

Source: Authors' calculations based on data from Eurostat COMEXT database.

7. World Bank (2012b) notes that this is partly because the higher risk ratings under Basel III rules make these investments less attractive than they were prior to the introduction of the new regulation.
8. According to the World Bank (2012b), banks will start operating under Basel III in 2013 (introduced as a result of the global financial crisis), with a range of provisions being gradually phased in between then and 2019; they note that these regulatory effects may result in a continued tightening of conditions, particularly since some countries have proposed more stringent capital requirements than the Basel III minimum, which may kick in earlier. As a result of these changes, the Bank is increasing its support for trade finance in LICs through the International Finance Corporation's Global Trade Finance Program, and a new programme to support commodity traders from LICs.

In terms of its importance as a market for LIC and LMIC exports, as can be seen from Figure 26 the EU remains the major trading partner for both income groups. The share (in value terms) of LIC exports to the EU is now back to pre-crisis levels according to data reported for 2011. However, it is clear that the proportion of LIC exports destined for China has increased rapidly since 2010, and the BRICs as a whole have seen a steady growth in their share of LIC exports since 2008.

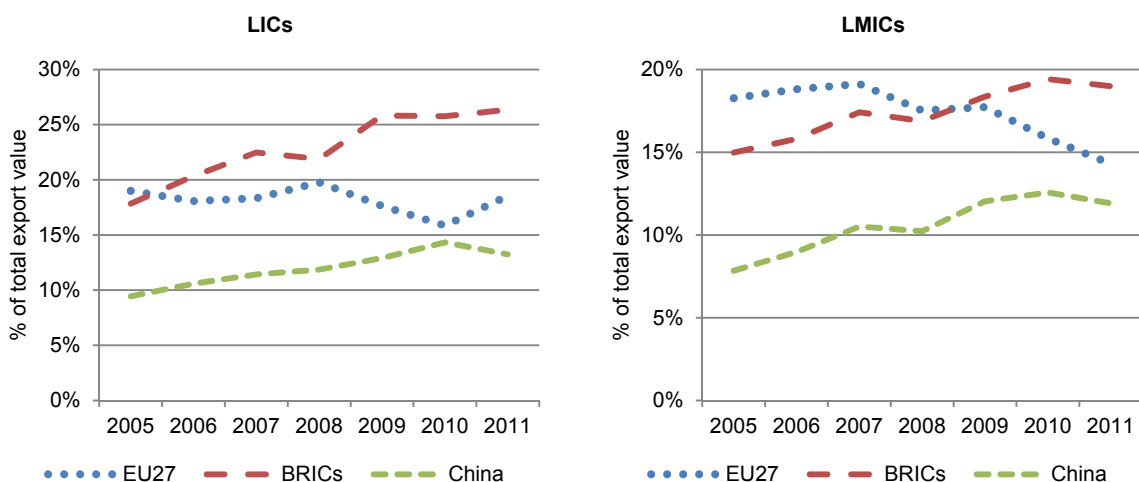
Figure 26: Share of LIC/LMIC exports destined for the EU, BRICs and China, 2005–11



Note: The number of countries included in each category, and year, varies according to data availability. For 2011 only 10 (out of 36) LICs and 21 (out of 54) LMICs have reported their trade.
 Source: Authors' calculations based on data from UN COMTRADE database.

As far as the relative importance of the EU as a source of LIC and LMIC imports is concerned, it is clear from Figure 27 that a decline is under way. In the case of LMICs this has accelerated since 2009, following the global financial crisis – during which the BRICs became a more important source of imports. Although the share of LIC imports from the EU increased in 2011 relative to 2010, it is still below pre-crisis levels (and below that of the BRICs). The data suggest that the BRICs are an increasingly important source of imports for LICs and LMICs, although in both markets the share of imports from China appears to have declined slightly in 2011 compared to 2010.⁹

Figure 27: Share of LIC/LMIC imports sourced from the EU, BRICs and China, 2005–11



Note: The number of countries included in each category, and year, varies according to data availability. For 2011 only 10 (out of 36) LICs and 21 (out of 54) LMICs have reported their trade.
 Source: Authors' calculations based on data from UN COMTRADE database.

9. The reasons for this decline may be related to the knock-on effects of the euro zone crisis on production networks emanating from China – however, further research is required to confirm this hypothesis.

There continues to be high demand for commodities, as reflected in recent price developments. However, as a result of financial contagion effects the extent to which commodity prices reflect demand and supply realities continues to be questioned. It is clear, though, that the reason the value of trade has exceeded pre-crisis levels is increases in commodity prices: the total dollar value of world merchandise exports jumped 19%, to US\$ 18.2 trillion, in 2011 – an increase nearly as great as the 22% rise in 2010, and driven in large part by higher primary commodity prices, notably oil (WTO, 2012).¹⁰

Table 3 shows that growth in non-oil commodity prices is forecast to ease in 2012 compared to 2011. This is in contrast to the price of oil, which is expected to experience a higher growth in value in 2012 compared to 2011. In comparison, growth in the unit value of manufactured exports is expected to reduce dramatically in 2012 compared to 2011. The reasons for such a sharp anticipated decline may be related to the effects of the euro zone crisis on international production networks.

Table 3: Forecasts on the global economic outlook
(percent change from previous year, except oil price)

Global conditions	2010	2011	2012e	2013f	2014f
World trade volume (goods and non-factor services)	13.0	6.1	5.3	7.0	7.7
Non-oil commodities price (US\$ terms)	22.5	20.7	-8.5	-2.2	-3.1
Oil price (US\$ per barrel) ^a	79.0	104.0	106.6	103.0	102.4
Oil price (percent change)	28.0	31.6	2.5	-3.4	-0.6
Manufactures unit export value ^b	3.3	8.9	0.9	1.2	1.5

Notes: e = estimate; f = forecast;

(a) Simple average of Dubai, Brent and West Texas Intermediate;

(b) Unit value index of manufactured exports from major economies, expressed in US\$.

Source: World Bank (2012b).

2.4 Remittance trends and forecasts

There are mixed reports about changes in remittance flows as a result of the euro zone crisis. For example, according to the African Development Bank (2012a), remittance flows to SSA grew in 2011 and are projected to continue to increase highly in 2012 (see Appendix 1, Table 1).¹¹ Overall, total remittance flows in 2011 were estimated to be back at the pre-crisis level of about US\$ 41.6 billion, an increase of 5.9% over 2010. The three top recipients – Nigeria, Egypt and Morocco – absorbed over 60% of total remittances to Africa in 2011, with inflows of US\$ 10.7 billion, US\$ 8 billion and US\$ 7.1 billion respectively.¹² The EU is a major source of remittances because of the high migrant populations in member states (see Massa et al., 2012). According to forecasts made by the World Bank (2012b) remittances to developing countries could decline by 5% or more this year because of reductions in growth in developed countries such as the EU.

West Africa is expected to be most exposed to declines in flows resulting from the economic slow-down in the EU. For example, Mohapatra et al. (2012) estimate that the future growth of such transfers will remain at half of its pre-crisis average (2000–08) of 17.3%. They expect overall

10. The value of the US dollar fell 4.6% in nominal terms against a broad basket of currencies according to data from the Federal Reserve, and 4.9% in real terms according to data from the IMF, making US goods generally less expensive in export. Nominal US dollar depreciation also would have inflated the dollar values of some international transactions (WTO, 2012).

11. Although the economic importance of flows varies across countries and regions on the continent. See: http://www.africaneconomicoutlook.org/en/outlook/financial_flows/

12. These countries have a large migrant population in more developed countries. Remittances as a share of GDP are highest for Lesotho (at 28% in 2010), followed by Gambia (11%), Senegal and Togo (10%), and Cape Verde (8%). After Tajikistan, Lesotho has largest share of remittances to GDP in the world, explained by their migrant workers in South Africa (African Development Bank, 2012a). Data from the World Bank's World Development Indicators.

remittance flows to developing countries to grow by 7.3% in 2012, 7.9% in 2013 and 8.4% in 2014, to reach US\$ 441 billion by 2014.

There are some incidences of increasing restrictiveness of employment opportunities for migrant workers. For example, Spain has introduced new policies that have made the process of hiring foreign workers more burdensome for employers, in particular new minimum salary requirements and discontinuation of an expedited immigration processing option for large businesses. These more restrictive conditions are reported to have already affected migrant workers from North Africa.¹³

2.5 Aid trends and forecasts

Overall global aid volumes have increased after the declines experienced in 2009, since the global financial crisis (see Appendix 1, Table 1). However, because of the euro zone crisis and the constraints it places on donors, growth in aid flows is expected to remain below pre-crisis levels in 2012. As highlighted by the African Development Bank (2012a), growth in total country programmable aid to Africa is expected to slow in real terms during the next three years, in contrast to the 12% real annual growth rate experienced between 2008 and 2010. Since declines in flows from traditional donors are unlikely to be reversed in the foreseeable future, other sources of finance need to be mobilised. Although there is evidence that aid flows from non-traditional donors are to some extent compensating for reductions from others, there is a need for much more detailed research.

As discussed in detail by the African Development Bank (2012a), major providers of South–South development co-operation include Brazil, China, India and South Africa.

- Brazil's total official development assistance (ODA) reached US\$ 362.2 million in 2011, most of which is channelled through multilateral funds.
- China's total ODA was US\$ 1.9 billion in 2009, which was almost four times the 2000 level. At the last Forum for China–Africa Co-operation, the Chinese government pledged US\$ 10 billion in concessional loans to African countries and US\$ 1 billion in special loans for African small and medium-sized companies.
- India's ODA to Africa is also rising: US\$ 5.4 billion in loans and US\$ 500 million in grants were pledged at the first India–Africa Forum Summit in 2008, in 2011 US\$ 5 billion of credit was offered over three years and increased development aid for Africa projects.¹⁴
- South Africa announced in 2011 the establishment of the South African Development Partnership Agency; however, development co-operation flows decreased from US\$ 112.6 million in 2009 to US\$ 108.7 million in 2010, and are essentially oriented towards countries within the Southern African Development Community.

Some EU member states have also significantly reduced their aid budgets since the beginning of the euro zone crisis. The biggest percentage cuts have been made by two of the member states worst affected by the debt crisis – Spain and Greece. The former cut its aid budget by nearly a third in 2010–11; the latter by 40%.¹⁵ The net effect of these cuts is an estimated 1.5% reduction in EU development assistance. Since the EU accounts for more than half of all ODA, these reductions will affect recipient countries and their country programming.

The World Bank (2012) notes that there remains a credible risk of a slow-down in ODA flows to SSA. Indeed, its baseline scenario assumes flat growth in ODA flows during 2012 and 2013, before a slight increase in 2014. According to its estimates, ODA flows to SSA in 2011 declined by 0.9% in real terms as a result of fiscal consolidation in high-income countries. Estimates based on

13. See Mohapatra et al. (2012).

14. See: <http://blogs.wsj.com/indiarealtime/2011/05/28/what-they-said-india-africa-summit/>

15. See: <http://m.bbc.co.uk/news/world-europe-18554986>.

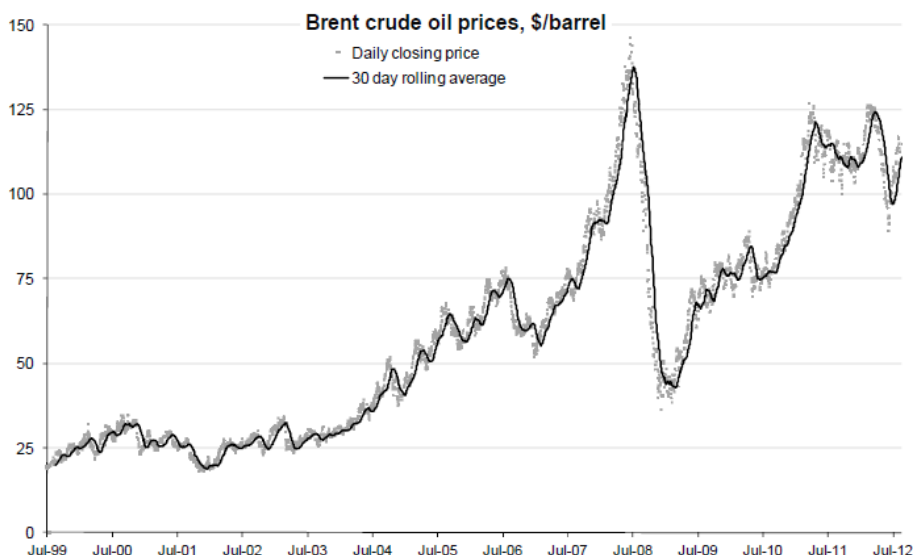
analysis of disbursements of country programmable aid (CPA) – which accounts for about 60% of total Development Assistance Committee (DAC) gross bilateral ODA – suggest that growth could decline to an average of 2% between 2011 and 2013, compared to the 5% average growth recorded during 2001–10; this implies an annual *per capita* decline of 0.2% of CPA disbursements for recipient countries (World Bank, 2012c). According to estimates made by Zealand and Howes (2012), OECD aid (excluding debt relief) in 2012 is about US\$ 114 billion, or about 0.28% of total OECD gross national income – its lowest level since 2008.

2.6 Energy trends and forecasts

Oil, gas and coal are three important sources of energy in both LICs and LMICs. According to the International Futures Statistical Database¹⁶ oil is the main fossil energy consumed in LICs (60%) and coal in LMICs (57%). Natural gas accounts for a significant proportion of fossil energy in both groups (30% in LICs and 15% in LMICs).

Since 1999 the international oil price has increased from US\$ 25 per barrel to more than US\$ 100 (Figure 28). Bolton (2012) notes that there was a consistent upward trend in prices from summer 2010 to spring 2011. Prices rose from around US\$ 75 per barrel in July and August 2010 to more than US\$ 90 in early December 2010. The Arab Spring coincided with further price rises in late January and early February, but these were modest. However, the subsequent revolt in Libya contributed to much faster price rises, to around US\$ 125 per barrel, in late April 2011. These were the highest prices since July 2008. Prices fell during much of the rest of 2011, but remained volatile in the US\$ 100–110 per barrel range at the end of the year. Cold weather across much of Europe in late January/early February 2012 and increasing tension between Iran and the West both contributed to push prices above US\$ 120 per barrel in February. Prices remained at around this level until mid-April, when poor economic news contributed to a cut in prices. Recently the price of Brent has risen, increasing by 33% from mid-June to a peak of US\$ 117.95 a barrel on Friday 14 September 2012. Saudi Arabia has offered its main customers in the US, Europe and Asia extra oil supplies through the end of the year, a sign that the world's largest exporter is worried about the impact of rising prices on the global economy.¹⁷

Figure 28. Oil price



Source: Bolton (2012).

The US Energy Information Administration in its Short-Term Energy Outlook for September 2012 (EIA, 2012a) forecasts that over the rest of 2012 Brent crude oil prices will fall from recent highs,

16. <http://www.ifs.edu>.

17. <http://www.ourbusinessnews.com/saudis-offer-extra-oil-to-control-prices>.

averaging US\$ 111 per barrel over the last four months of 2012 and US\$ 103 per barrel in 2013. This is an upward revision of its August forecast that the oil spot price would average about US\$ 103 per barrel during the second half of 2012 and US\$ 100 per barrel in 2013. The International Energy Agency (IEA, 2011a¹⁸) forecasts a price of US\$ 114 per barrel in 2015 and US\$ 212 per barrel in 2035.

EIA (2012b) points out that the possibility of a deterioration in the economic situation in EU countries poses a downside risk to global oil demand and prices. In the current Outlook, consumption in Europe is expected to fall year-on-year by 0.4 million barrels per day in 2012 and by a further 0.2 million barrels per day in 2013. The possibility of slower growth in China, which has been a key driver of increased oil demand in recent years, could also curb demand. China's weakening exports, particularly to Europe, and the slower industrial and domestic growth it has experienced in the first half of 2012 could place downward pressure on oil prices.

The political turmoil in Arab countries has been one of the most important factors driving the oil price upwards. Countries which experienced the Arab Spring had to bear a high impact in terms of GDP (Table 4).

Table 4: Arab Spring cost to GDP, 2011

Country	GDP cost (US\$ billion)
Libya	7.67
Syria	6.07
Egypt	4.27
Tunisia	2.03
Bahrain	0.39
Yemen	0.12
Total	20.56

Source: Geopolitics (2011).

Other oil producers have enjoyed benefits from the Arab Spring. Arab countries where the crisis was weathered without dramatic consequences have seen economic gains. Geopolitics (2011) reports that in Saudi Arabia the Arab spring increased public revenues by 25%, and in the United Arab Emirates the figure is 31%.

Generally energy exporters take advantage of high prices and lose from low oil prices, whereas energy importers suffer from oil price surges as they affect countries' competitiveness.

The African Economic Outlook 2012 reports that high international prices helped to moderate the slow-down of growth in Nigeria (African Development Bank, 2012b). The slow-down in 2011 was a reflection of the worsening global economy and an oil production shut-down due to lack of infrastructure. For 2012, the economy is projected to grow by 6.9% on the back of higher oil exports, but it will slow again in 2013 to 6.6%.

The United Nations (UN, 2012) reports that the economy of the Russian Federation expanded by 4.3% in 2011, supported by higher oil prices, abundant harvests, and increased fiscal spending, and is projected to grow at a similar rate in 2012. The current account surplus in 2011 reached 29.7% of GDP in Azerbaijan and exceeded 7% of GDP in Kazakhstan and Uzbekistan. This contrasts with high current account deficits in most other Commonwealth of Independent States (CIS) countries, which are net energy importers.

However we should be wary of the general understanding that energy price surges are good for oil exporters and bad for oil importers (and *vice versa*). They may also be detrimental for oil exporting countries. There is no doubt that oil price increases generate an increase in public finance resources for LICs and stimulate growth. However oil exporters could also suffer severe damage to the real economy because of their loss of competitiveness and decrease in exports. Recent studies

18. <http://english.ahram.org.eg/NewsContent/3/12/25926/Business/Economy/IEA-draft-outlook-sees--oil-in-.aspx>.

from the IMF (2012c), Cantore et al. (2012) and World Bank (2012) converge on the fact that severe oil price shocks may hamper the real economy of oil exporting economies in SSA (Table 5).

Table 5: The impact of high energy prices on developing countries

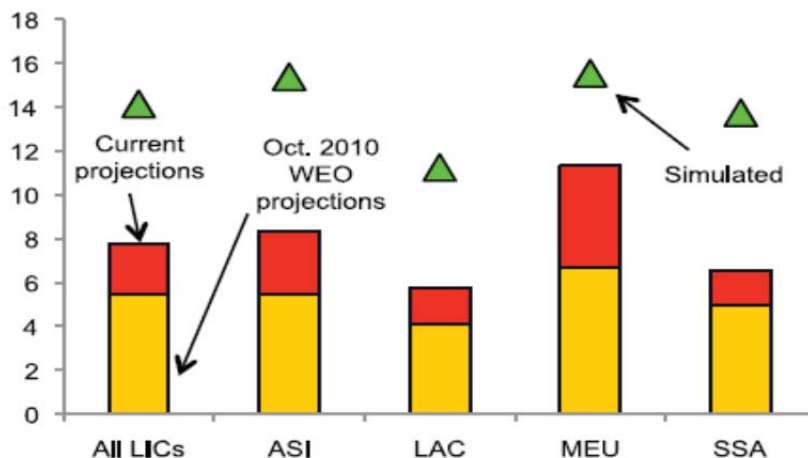
Study	Impact on real GDP
IMF Regional Economic Outlook: Sub-Saharan Africa	A 50–60% increase of oil prices generates 'large real income shocks in oil importing countries and a decline of non-oil exports in all countries'
Cantore et al. (2012)	A 100% increase in oil price generates real GDP losses in SSA countries of up to 3%. ^a
World Bank Global Economic Prospects (2012)	A US\$ 50 oil price increase generates a 0.4% real GDP reduction in SSA oil exporters

Note: (a) The range excludes some relevant SSA oil exporters such as Nigeria, which are included in another regional aggregation.
Source: Authors' elaboration on IMF (2012c), Cantore et al. (2012) and World Bank (2012).

UN (2012) reports that the US\$ 32 increase in the average oil price during 2011 implied a net transfer of US\$ 450 billion from oil-importing to oil-exporting countries. Developing countries lacking strategic reserves or fiscal buffers to compensate domestic producers and consumers, in particular, have seen high increases in inflation rates because of rising energy prices. Their growth prospects would suffer from further price increases. While inflation rates are forecast to moderate, they remain high in much of SSA. They are still well into double digits in a number of SSA countries, for example Ethiopia, Nigeria, Tanzania, and Uganda.

Interestingly, IMF (2012d) estimates that the oil price surge in 2011 had a moderate effect on inflation in developing countries and in SSA (up to 8%), well below that expected from simulations and less than the 2008 food/fuel price crisis (Figure 29). The IMF stresses that in 2011 the response of LICs to inflation was more effective than during the 2007/2008 crisis because governments were ready in implementing subsidies and/or tax decreases on energy prices (Table 6).

Figure 29: Inflationary pressure in LICs, 2011 (percent, median)



Note: ASI = Asia and the Pacific; LAC = Latin America and Caribbean; MEU = Middle East and Central Asia; SSA = sub-Saharan Africa.
Source: IMF (2012d).

Table 6: Policies to counteract inflationary pressures

Policy	2007/2008 crisis		2010/2011 crisis	
	Number of countries	Median fiscal cost (% of GDP)	Number of countries	Median fiscal cost (% of GDP)
Tax decrease	10	0.3	18	0.4
Subsidy increase	13	0.2	15	1.2

Source: IMF (2012d).

As reported by EIA (Figure 30), gas prices are decreasing. Low oil prices helped to keep gas prices low. According to Bloomberg, the recent declining trend is explained by the fact that gas is in

many cases obtained as a by-product of the oil extraction process. In 2012 gas produced as a by-product of oil drilling will represent 75% of the increase in gas production this year, helping to keep prices low.¹⁹ EIA (2012a) expects the Henry Hub natural gas spot price, which averaged US\$ 4.00 per million British thermal units (MMBtu) in 2011, to average US\$ 2.67 per MMBtu in 2012 and US\$ 3.34 per MMBtu in 2013. The recent IEA World Energy Outlook (IEA, 2012) points out that even in a very optimistic scenario ('Golden Rule') where gas production will triple by 2035 by providing a downward pressure on prices, natural gas prices will increase from 2010 US\$ 4.4 to 2010 US\$ 5.4 per MMBtu in the US, from US\$ 7.5 to US\$ 10.5 in Europe and from US\$ 11.0 to US\$ 12.4 in Japan over the period 2010–20.

Figure 30: Natural gas price, July 2010–Jan. 2012

Natural gas spot prices (Henry Hub)



Source: EIA Natural Gas Intelligence (<http://www.cattlenetwork.com/cattle-news/latest/Natural-gas-outlook-Futures-prices-trend-higher-150994155.html>).

The drop in gas prices is of concern to the governments of gas exporting countries. At the end of 2011 gas exporters met in Qatar to discuss ways to support gas prices. They were particularly worried about the consequences on gas demand deriving from the global financial crisis.²⁰

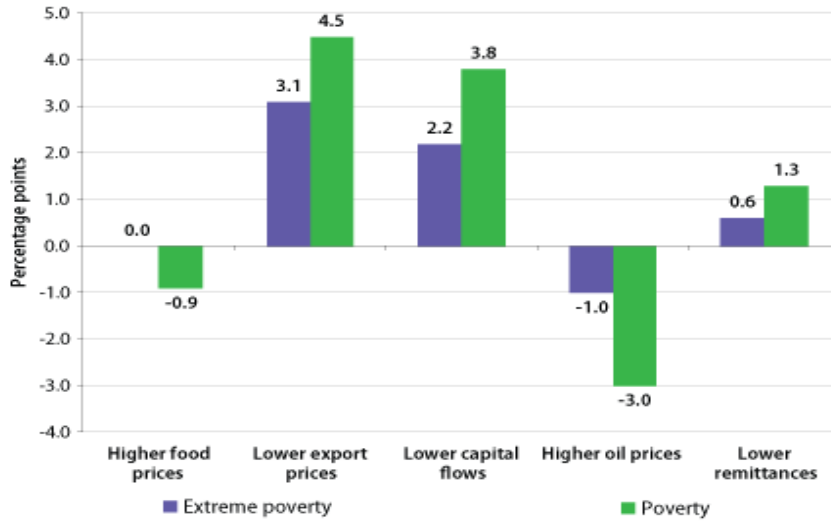
A drop in the gas price may have a negative impact on gas exports, with resultant negative social consequences. A recent report from Bacarreza and Mariscal (2012) emphasises that amongst a series of scenarios concerning low remittances, lower capital flows, high oil prices, high food prices a scenario assuming a 50% drop in the price of exports including gas may create a significant increase in poverty and extreme poverty of 4.5 and 3.1 percentage points respectively in an energy exporting country such as Bolivia (Figure 31).

The price of coal has been rising since 2009 (Figure 32), driven by a high increase in demand from China. This emphasises the conflict between the need to reduce climate change emissions, which requires a transition from fossil to renewable energy, and the constantly increasing demand for the most intensive fossil-fuel source of energy.

19. <http://www.businessweek.com/articles/2012-04-19/high-oil-prices-cut-the-cost-of-natural-gas>.

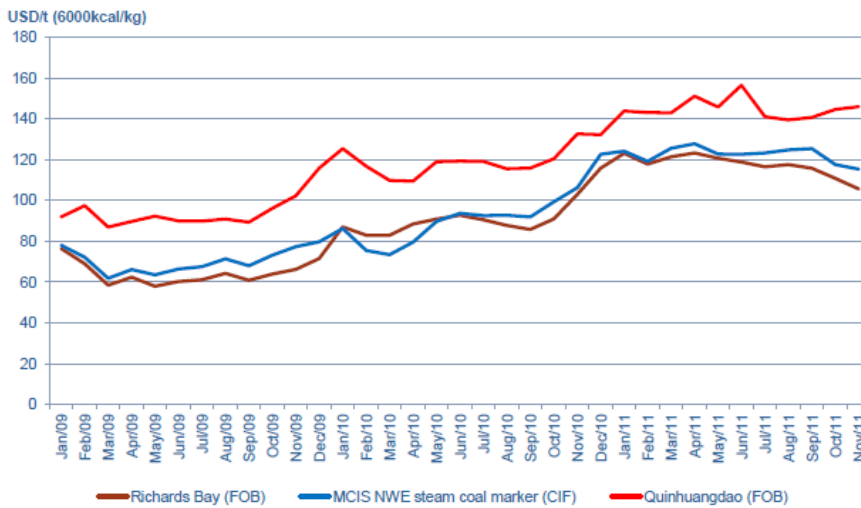
20. <http://af.reuters.com/article/commoditiesNews/idAFL5E7MA0V920111110>.

Figure 31: Poverty rates in different scenarios in Bolivia



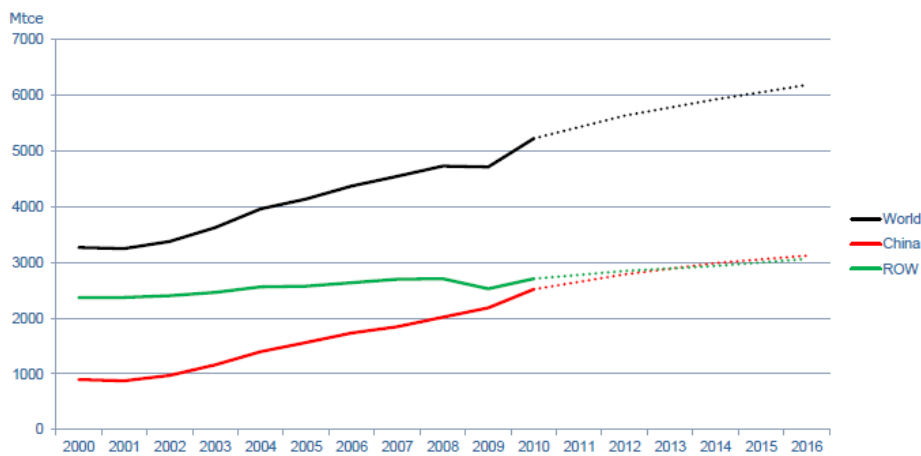
Source: Bacarreza and Mariscal (2012).

Figure 32: Monthly coal price, Jan. 2009–November 2011



Source: IEA (2011b).

Figure 33: Coal energy demand, 2000–16



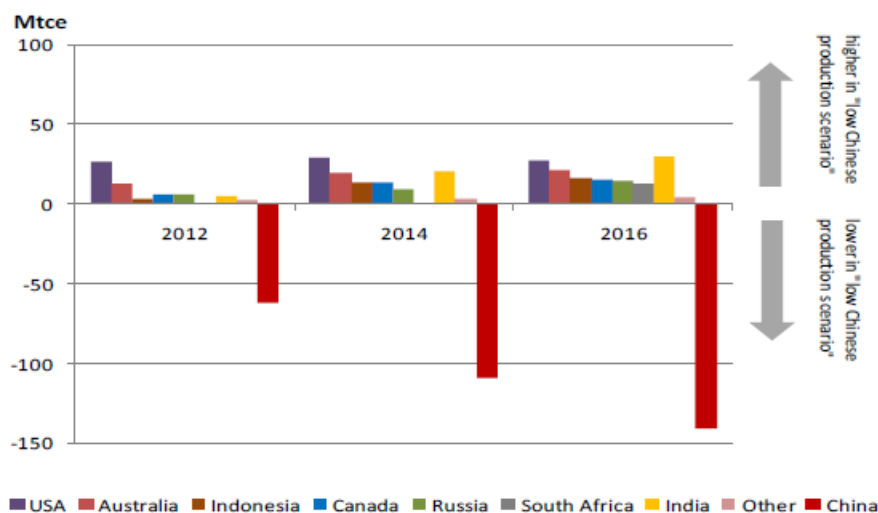
• Coal demand is expected to grow at around 600 000 tonnes a day to 2016

Source: IEA (2011b).

Henriot et al. (2012) report that the reference price for coking coal could fall from US\$ 206 per mt in the first quarter of 2012 to less than US\$ 200 per mt in 2013. The EIA (2012a) forecasts that the delivered coal price in 2012 will average US\$ 2.40 per MMBtu, and that the 2013 delivered coal price will average US\$ 2.39 per MMBtu, or about 0.5% lower than the 2012 price. It will be interesting to monitor the coal market in the medium term. The IEA (2011b) raises concerns about the global implications of China's massive appetite for coal, noting that events and decisions in China could have a very significant effect on coal prices – and thus electricity prices – around the world over the next five years.

In the coal market, the IEA (2011b) forecasts that seven players – US, Australia, Indonesia, Canada, Russia, South Africa and India – could eventually take advantage of a coal price increase by increasing their exports, whereas China will become the big world net importer (Figure 34).

Figure 34: Impact of China on global coal trade



Source: IEA (2011b).

Other LIC new players have smaller shares of world coal exports, but they are expanding their market size. Henriot et al. (2012) report that in Mozambique the annual production capacity of the recently completed Vale Moatize project and Rio Tinto's Riversdale totals 13.4 mt, of which over 10 mt is coking coal. The deliveries of coking coal from Mongolia are of crucial importance for Chinese plans to locate new steel production capacities mainly in western regions. According to HSBC, Mongolian coking coal exports to China rose 37% year-on-year to 17.5 mt in January–November 2011, and are expected to reach 28 mt this year.

2.7 Summary of trends and forecasts

Table 7 summarises the effects of the major current global shocks analysed (i.e. the euro zone crisis, China's and India's slow-downs, and energy price shocks) on economic growth, trade, private capital flows, aid and remittances. Although the magnitude of impacts is rather diverse, it appears that the current global turmoil is going to have a significant impact on the developing world, especially through reductions in demand in the EU market and to some extent in China, and through financial contagion. Oil, gas and coal prices are expected to rise in the medium to long term, even though in the short term energy prices fluctuate. The current euro area/China slow-down is generally leading to downward forecasts of energy prices, even though other factors (technology, international politics) may induce analysts to revise estimates upwards. In the oil market, tensions in the Middle East are still placing upward pressure on oil prices. Large energy price shocks generally benefit energy exporters and penalise energy importers, but recent evidence emphasises that energy exporters could also be penalised as high energy prices could affect the competitiveness of LICs.

Table 7: Summary of expected impacts of current global shocks

Macro-financial variables	World	Developing countries	SSA
GDP growth	Projected to decline from 3.8% in 2011 to 3.3% in 2012, and then to recover to 3.6% in 2013, due to growth slow-downs in euro area, China, India and Brazil in 2012, among others.	Projected to decline from 6.2% in 2011 to 5.3% in 2012, and then to recover slightly to 5.6% in 2013.	Projected to decline to 5% in 2012 and to increase to 5.7% in 2013.
Trade	Growth in global trade for 2012 is projected to be 2.5% according to most recent WTO forecasts, less than half of the previous 20-year average.	Growth in trade for developing economies is projected to be 3.5%; this is a 2.1% reduction from earlier forecasts.	According to the World Bank (2012b) the pace of deceleration of trade values for SSA has bottomed out; growth in export values is driven mainly by oil exporters.
Trade prices	Forecasts of energy prices project price decreases because of the euro area/China slow-down, but other factors (e.g. geopolitics such as tensions in Middle East, technology) may lead to an upward revision of estimates	n.a.	High food prices affect a number of countries
Private capital flows	n.a.	Expected to decline by more than 20% to US\$ 775 billion in 2012, and to recover to US\$ 953 billion in 2013. Declines in portfolio equity flows and FDI in 2012. Increase in bond flows in 2012. Weaker quarterly average growth rate of cross-border bank lending since 2008. Decline in cross-border bank lending of 5% from June to December 2011.	Net private capital flows fell by 13% in 2012 due to declines in portfolio equity flows, bonds flows, and FDI but are expected to recover in 2013. Cross border bank lending from European banks to Africa also declined by 3% between June and December 2011.
ODA	According to estimates made by Zealand and Howes (2012) OECD aid (excluding debt relief) in 2012 is about US\$ 114 billion or about 0.28% of total OECD gross national income, its lowest level since 2008. Growth in CPA is expected to decline to an average of 2% between 2011 and 2013.	n.a.	n.a.
Remittances	Remittances to developing countries could decline by 5% or more in 2012 (World Bank, 2012b).	n.a.	According to the African Development Bank (2012a) remittance flows to SSA peaked in 2011 and are projected to continue to increase highly in 2012.

Note: n.a. = information not available in the literature reviewed.
Source: Authors' elaboration on different sources.

3 Vulnerability assessment

3.1 Vulnerability to the euro zone crisis and the slow-down of growth in China and India

A sample of 57 developing countries, 20 LICs and 37 LMICs, has been selected to assess the potential vulnerability of poor countries to both the euro zone crisis and the slow-down of growth in China and India. To this end, a number of exposure and resilience indicators have been identified, since the *vulnerability* of a country to an external shock depends on its *exposure* to the shock (determined by the country's economic characteristics) as well as on its *resilience* (the ability of the country to manage the shock) (te Velde et al., 2009).

Table 8 reports the results of the vulnerability assessment. Findings show that 45% of the selected LICs are likely to be highly vulnerable to the euro zone crisis and the growth slow-down in China and India, versus 32% of LMICs. The most highly vulnerable countries appear to be Senegal, and Cape Verde. Gambia and Mozambique follow in the list of highly vulnerable countries, together with several other economies including Tajikistan, Togo, Guyana, Moldova and São Tomé and Príncipe.

Senegal is expected to be one of the countries most vulnerable to the current global macro-economic and financial shocks owing to its high dependence on trade with the euro area and India, and the fact that it relies heavily on cross-border bank lending from European economies and remittances. It may also be affected by the shock waves through a drop in the value of its currency, which is pegged to the euro. Among LMICs, Cape Verde is also highly vulnerable because of its high trade and financial linkages with European countries and high dependence on ODA. It is also likely to feel the effects of the global turmoil through depreciation of the euro and lack of adequate room for manoeuvre given its high fiscal deficit, current account deficit, and heavy debt burden which lower its resilience to external shocks.

Looking at the LIC sub-sample, Gambia and Mozambique are particularly vulnerable to the euro zone crisis and the growth slow-down in China and India, mainly because of their high exposure. Both countries have high trade linkages with the euro zone. Moreover, Gambia has a significant share of its exports directed to China and India. Gambia is also likely to be affected by declines in remittances, while Mozambique is likely to feel the effects of the shocks through declines in FDI and aid as well as through a contraction of cross-border bank lending from European countries. Tajikistan and Togo, on the other hand, appear to be at risk mainly because of their low resilience. Both have fiscal and current account deficits which are significantly greater than the recommended thresholds and their ratio of debt to GDP is beyond the levels considered manageable. In Tajikistan, the level of reserves is also below the healthy threshold of three months' worth of imports.

Next to these highly vulnerable countries, there are various LICs (e.g. Kenya, Burundi) and LMICs (e.g. Belize, Côte d'Ivoire and El Salvador) which are likely to be less exposed to the two global shocks under consideration. A common characteristic of most of these countries is that their trade linkages with emerging powers (i.e. China and India) are particularly weak. Some notable exceptions are Benin, Philippines, Sudan, Yemen, and Zambia which are highly dependent on trade with China, and Nepal and Yemen which have high trade linkages with India.

A few economies are found to have a low degree of potential vulnerability to the euro zone crisis and the growth slow-down in China and India. In some cases the main reason for this is that they are expected to be particularly well placed to cope with and respond to shock waves (i.e. they are resilient). This is the case for Bolivia and Nigeria, both of which have fiscal and current account surpluses, healthy reserves, and debt levels within manageable limits.

Table 8: Vulnerability of selected LICs and LMICs to the euro zone crisis and growth slow-down in China and India

Country	Exposure indicators									Resilience indicators				Overall degree of vulnerability
	Dependence on trade with:				FDI dependence	Dependence on cross-border bank lending from European banks	Aid dependence	Dependence on remittances	Pegged to euro (yes / no)	Fiscal balance (surplus / deficit)	Current account balance (surplus / deficit)	Foreign currency reserves	External debt burden	
	Euro zone	China	India	China and India										
LICs														
Bangladesh	high	low	medium	medium	low	medium	low	high	no	deficit	surplus	healthy	manageable	low
Benin	medium	high	medium	high	low	low	medium	medium	yes	deficit*	deficit	healthy	manageable	intermediate
Burkina Faso	medium	low	low	low	low	medium	medium	low	yes	deficit	deficit**	healthy	manageable	low
Burundi	high	low	low	low	low	low	low	high	no	deficit	deficit	healthy	manageable	intermediate
Cambodia	high	low	low	low	medium	low	medium	medium	no	deficit*	deficit	healthy	manageable	low
Ethiopia	high	high	low	high	low	low	medium	medium	no	deficit*	deficit	unhealthy	manageable	high
Gambia	high	high	high	high	medium	medium	medium	high	no	deficit	deficit	healthy	manageable	high
Guinea-Bissau	low	low	high	high	low	low	medium	medium	yes	deficit*	deficit	healthy	heavy	high
Kenya	high	low	low	low	low	high	medium	medium	no	deficit	deficit	healthy	manageable	intermediate
Kyrgyz Republic	low	low	low	medium	high	medium	medium	high	no	deficit	deficit	healthy	heavy	high
Mali	medium	low	low	low	low	Medium	medium	medium	yes	deficit*	deficit	healthy	manageable	low
Mozambique	high	medium	low	medium	high	high	high	low	no	deficit	deficit	healthy	manageable	high
Nepal	medium	low	high	high	low	low	medium	high	no	deficit*	deficit	healthy	manageable	intermediate
Niger	high	low	low	low	high	low	medium	low	yes	deficit*	deficit	healthy	manageable	high
Rwanda	high	medium	low	medium	low	medium	medium	low	no	deficit*	deficit	healthy	manageable	low
Sierra Leone	low	low	low	low	low	medium	medium	medium	no	deficit	deficit	healthy	manageable	low
Tajikistan	high	low	low	low	low	low	medium	high	no	deficit	deficit	unhealthy	heavy	high
Tanzania	high	high	medium	high	medium	high	medium	low	no	deficit	deficit	healthy	manageable	high
Togo	medium	low	medium	medium	low	high	medium	high	yes	deficit	deficit	healthy	heavy	high
Uganda	high	low	low	medium	medium	medium	medium	medium	no	deficit	deficit	healthy	manageable	low

Country	Exposure indicators									Resilience indicators				Overall degree of vulnerability
	Dependence on trade with:				FDI dependence	Dependence on cross-border bank lending from European banks	Aid dependence	Dependence on remittances	Pegged to euro (yes / no)	Fiscal balance (surplus / deficit)	Current account balance (surplus / deficit)	Foreign currency reserves	External debt burden	
	Euro zone	China	India	China and India										
LMICs														
Albania	high	medium	low	medium	medium	high	medium	high	no	deficit	deficit	healthy	manageable	high
Armenia	high	low	low	low	medium	medium	medium	high	no	deficit	deficit	healthy	heavy	high
Belize	medium	low	low	low	medium	high	low	medium	no	deficit*	deficit**	healthy	heavy	intermediate
Bolivia	medium	medium	low	medium	medium	low	medium	medium	no	surplus	surplus	healthy	manageable	low
Cameroon	high	medium	medium	high	Low	high	low	low	yes	deficit*	deficit	healthy	manageable	high
Cape Verde	high	low	low	low	medium	high	high	medium	yes	deficit	deficit	healthy	heavy	high
Côte d'Ivoire	high	low	low	low	Low	high	low	low	yes	deficit	surplus	healthy	manageable	intermediate
Egypt	high	low	medium	high	Low	high	low	medium	no	deficit	deficit**	healthy	manageable	intermediate
El Salvador	medium	low	low	low	Low	medium	low	high	no	deficit	deficit	healthy	heavy	intermediate
Fiji	low	low	low	low	medium	low	low	medium	no	deficit	deficit	healthy	manageable	low
Georgia	high	low	low	medium	medium	medium	medium	medium	no	deficit*	deficit	healthy	heavy	intermediate
Ghana	high	low	medium	medium	medium	high	medium	low	no	deficit	deficit	healthy	manageable	intermediate
Guatemala	medium	low	low	low	Low	low	low	high	no	deficit	deficit**	healthy	manageable	low
Guyana	high	low	low	low	medium	low	high	high	no	deficit*	deficit	healthy	heavy	high
Honduras	high	low	low	low	medium	medium	low	high	no	deficit	deficit	healthy	manageable	intermediate
Indonesia	medium	high	medium	high	low	medium	low	low	no	deficit*	surplus	healthy	manageable	low
Moldova	high	low	low	low	medium	high	medium	high	no	deficit*	deficit	healthy	heavy	high
Mongolia	medium	high	low	high	high	medium	medium	medium	no	surplus	deficit	healthy	manageable	low
Morocco	high	low	medium	medium	low	high	low	medium	no	deficit	deficit	healthy	manageable	intermediate
Nicaragua	medium	low	low	low	high	medium	medium	high	no	deficit*	deficit	healthy	heavy	high
Nigeria	high	low	high	high	medium	low	low	medium	no	surplus	surplus	healthy	manageable	low
Pakistan	high	medium	low	medium	low	medium	low	medium	no	deficit	surplus	healthy	manageable	low
Papua New Guinea	medium	medium	low	medium	low	medium	medium	low	no	surplus	deficit	healthy	heavy	low
Paraguay	medium	low	low	low	low	high	low	medium	no	surplus	deficit	healthy	manageable	low
Philippines	high	high	low	high	low	medium	low	high	no	deficit	surplus	healthy	manageable	intermediate
Samoa	low	low	low	low	low	high	medium	high	no	deficit	deficit	healthy	heavy	high
São Tomé and Príncipe	high	low	low	low	medium	high	high	low	no	deficit	deficit	healthy	heavy	high
Senegal	high	low	high	high	low	high	medium	high	yes	deficit	deficit	healthy	manageable	high
Sri Lanka	high	low	medium	medium	low	medium	low	medium	no	deficit	deficit**	healthy	manageable	low
Sudan	low	high	low	high	low	low	low	medium	no	deficit	deficit	unhealthy	manageable	intermediate
Swaziland	high	low	low	low	low	low	low	medium	no	deficit	deficit	healthy	manageable	low
Syria	high	low	low	low	low	low	low	medium	no	deficit	deficit	healthy	manageable	low
Tonga	low	low	low	low	low	low	high	high	no	deficit	deficit	healthy	manageable	intermediate

Country	Exposure indicators									Resilience indicators				Overall degree of vulnerability
	Dependence on trade with:				FDI dependence	Dependence on cross-border bank lending from European banks	Aid dependence	Dependence on remittances	Pegged to euro (yes / no)	Fiscal balance (surplus / deficit)	Current account balance (surplus / deficit)	Foreign currency reserves	External debt burden	
Euro zone	China	India	China and India											
Ukraine	high	medium	medium	medium	medium	high	low	medium	no	deficit	deficit	healthy	heavy	high
Vietnam	high	high	low	high	medium	medium	low	medium	no	deficit	deficit	unhealthy	manageable	high
Yemen	medium	high	high	high	low	medium	low	medium	no	deficit	deficit	healthy	manageable	intermediate
Zambia	low	high	low	high	high	high	medium	low	no	deficit	surplus	healthy	manageable	intermediate

Notes:

Country selection made on the basis of data availability. Data used are those of the latest year available.

Exposure indicators:

Dependence on trade with euro zone: exports to euro zone/total exports to world (%).

Dependence on trade with China: exports to China/total exports to world (%).

Dependence on trade with India: exports to India/total exports to world (%).

Dependence on trade with China and India: exports to China and India/total exports to world (%).

FDI dependence: total FDI inflows/GDP (%).

Dependence on cross-border bank lending from European banks: foreign claims from European banks/GDP (%).

Aid dependence: total DAC countries' aid commitments/GDP (%).

Dependence on remittances: total remittance inflows/GDP (%).

Pegged to euro: only countries pegged at a fixed rate shown as Yes.

Key: Low <3%, Medium >=3%—<10%, High =>10%.

Resilience indicators:

Fiscal balance: fiscal balance/GDP (%).

Current account balance: current account balance/GDP (%).

External debt burden: external debt/GDP (%).

Key: * equal to or above the -2% threshold recommended to maintain a sustainable fiscal balance.

** equal to or above the -3% threshold generally accepted as a healthy equilibrium.

Healthy >=three months of imports, Unhealthy <three months of imports.

Manageable <=50%, Heavy >50%.

Overall degree of vulnerability:

Key: High – 5 to 7 of the selected indicators signal significant exposure/low resilience (denoted by entries in red in the indicator columns); Intermediate – 4 indicators signal significant exposure/low resilience; Low – 0 to 3 indicators signal significant exposure/low resilience.

To avoid double counting, dependence on trade with China and India was not considered when calculating the degree of vulnerability.

Source: Authors' elaboration on different sources.

Finally, it is worth noting that overall most countries are likely to feel the effects of the global shocks under consideration because of their high trade (both LICs and LMICs) and financial (mainly LMICs) linkages with European economies. Remittances are likely to be the third most important transmission channel, followed by trade linkages with China and, to a lesser extent (and mainly in the case of LMICs), India. The high fiscal and current account deficits of almost all the countries are likely to constrain significantly their ability to cope with the shocks, although reserves are healthy and debt levels within manageable limits in the majority of the cases.

3.2 Vulnerability to energy price shocks

We analyse the vulnerability of a group of 41 countries (14 LICs and 27 LMICs) to energy price shocks (defined as energy price increases) by using a number of energy-specific exposure and resilience indicators.²¹ The set of countries is different from that used in Section 3.1 because of data availability. The findings of our analysis can be summarised as follows:

- none of the countries is rated as invulnerable (0) – vulnerability ratings for all fall within the range 1–7;
- 20 countries (about 50% of those included in our sample) display a high degree of vulnerability – 9 LICs (64% of our LIC sample) and 11 LMICs (41% of the LMIC sample).

The sample countries are in general ones exposed to energy shocks due to net energy imports. Only 17% of them are net oil exporters (Cameroon, Congo Rep., Côte d'Ivoire, Ghana, Nigeria, Syria and Yemen), 10% net coal exporters (Indonesia, Mongolia, Mozambique and Viet Nam) and 24% net gas exporters (Bolivia, Congo Rep., Ghana, Honduras, Indonesia, Mozambique, Nigeria, Tanzania, Yemen and Zambia). On average the percentage of renewables in total energy use is quite low (about 10%, with a few exceptions such as Paraguay's 99%), and increased only very slowly over the period 1999–2009 (by an average 0.22 percentage points, with a peak of 11 percentage points for El Salvador). The dependence of the countries included in our sample on energy imports is relatively large (on average about 25%). In about 40% of the countries import dependence increased over the period 1999–2009 (with Benin representing the extreme case with a c. 20 percentage point increase).

In the context of our sample, four countries – Benin, Cambodia, Guatemala and Sri Lanka – emerge as particularly vulnerable: all have a high degree of exposure to the oil, gas and coal markets, a percentage of renewable energy in total energy consumption below the average (with a decline over the period 1999–2009), and a high dependence on imported energy (with an increase over the period 1999–2009). Among energy exporters, only Tanzania (a net exporter of gas) is vulnerable to energy price shocks, because of its exposure in the oil and coal markets and poor performance in resilience indicators (Table 9).

We should also note that the analysis would be different were we to consider vulnerability to declines rather than increases in energy prices. For example, energy exporting countries with a low exposure to high energy prices may be highly exposed to declines in energy prices if they present a net exports position. This is the case of countries such as Nigeria, Congo Rep., Ghana, Yemen and Bolivia included in our sample, which show a rate of dependence on energy exports in the range 10%–40% (Table 10).

21. See Appendix 2 for a more detailed explanation of the methodology employed.

Table 9: Vulnerability of selected LICs and LMICs to energy price shocks

Country	Exposure indicators			Resilience indicators				Overall degree of vulnerability
	% oil net imports/GDP	% coal net imports/GDP	% gas net imports/GDP	Alternative energy share in total energy consumption	Trend of alternative energy share in total energy consumption 1999–2009	Dependence on energy imports	Trend in dependence on energy imports	
LICs								
Bangladesh	high	high	high	red	negative	independent	positive	high
Benin	high	high	high	red	negative	dependent	negative	high
Cambodia	high	high	high	red	negative	dependent	negative	high
Eritrea	high	high	high	red	negative	independent	positive	high
Ethiopia	high	high	high	red	negative	independent	negative	high
Kenya	high	high	high	red	positive	dependent	negative	high
Kyrgyz Rep.	high	high	high	green	negative	dependent	negative	high
Mozambique	high	low	low	green	positive	independent	positive	low
Nepal	high	high	high	red	positive	independent	positive	intermediate
Tajikistan	high	high	high	green	negative	dependent	positive	high
Tanzania	high	high	low	red	negative	independent	negative	high
Togo	high	low	high	red	negative	independent	positive	intermediate
Yemen	low	high	low	red	negative	independent	positive	low
Zimbabwe	high	high	high	red	positive	independent	positive	intermediate
LMICs								
Albania	high	high	high	green	positive	dependent	positive	intermediate
Armenia	high	high	high	green	negative	dependent	negative	high
Bolivia	high	high	low	red	negative	independent	positive	intermediate
Cameroon	low	high	high	red	positive	independent	positive	low
Congo Rep.	low	high	low	red	positive	independent	positive	low
Côte d'Ivoire	low	high	high	red	negative	independent	positive	intermediate
Egypt	high	high	high	red	negative	independent	positive	high
El Salvador	high	high	high	green	positive	dependent	positive	intermediate
Georgia	high	high	high	green	positive	dependent	negative	high
Ghana	low	high	low	red	positive	independent	positive	low
Guatemala	high	high	high	red	negative	dependent	negative	high
Honduras	high	high	low	red	negative	dependent	negative	high
Indonesia	high	low	low	red	positive	independent	positive	low
Moldova	high	high	high	red	negative	dependent	positive	high
Mongolia	high	low	high	red	negative	independent	positive	intermediate
Morocco	high	high	high	red	positive	dependent	negative	high
Nicaragua	high	high	high	red	positive	dependent	negative	high
Nigeria	low	high	low	red	negative	independent	positive	low
Pakistan	high	high	high	red	positive	independent	positive	intermediate
Paraguay	high	high	high	green	negative	independent	positive	intermediate
Philippines	high	high	high	green	negative	dependent	positive	high
Senegal	high	high	high	red	positive	dependent	negative	high
Sri Lanka	high	high	high	red	negative	dependent	negative	high
Syria	low	high	high	red	negative	independent	positive	intermediate
Ukraine	high	low	high	red	positive	independent	positive	low
Viet Nam	high	low	high	red	positive	independent	positive	low
Zambia	high	high	low	green	positive	independent	negative	low

Source: Authors' elaboration on different sources.

Table 10. Dependence on energy exports

Country	Energy exports/GDP ratio
Nigeria	38%
Congo Republic	35%
Ghana	19%
Yemen	18%
Bolivia	17%

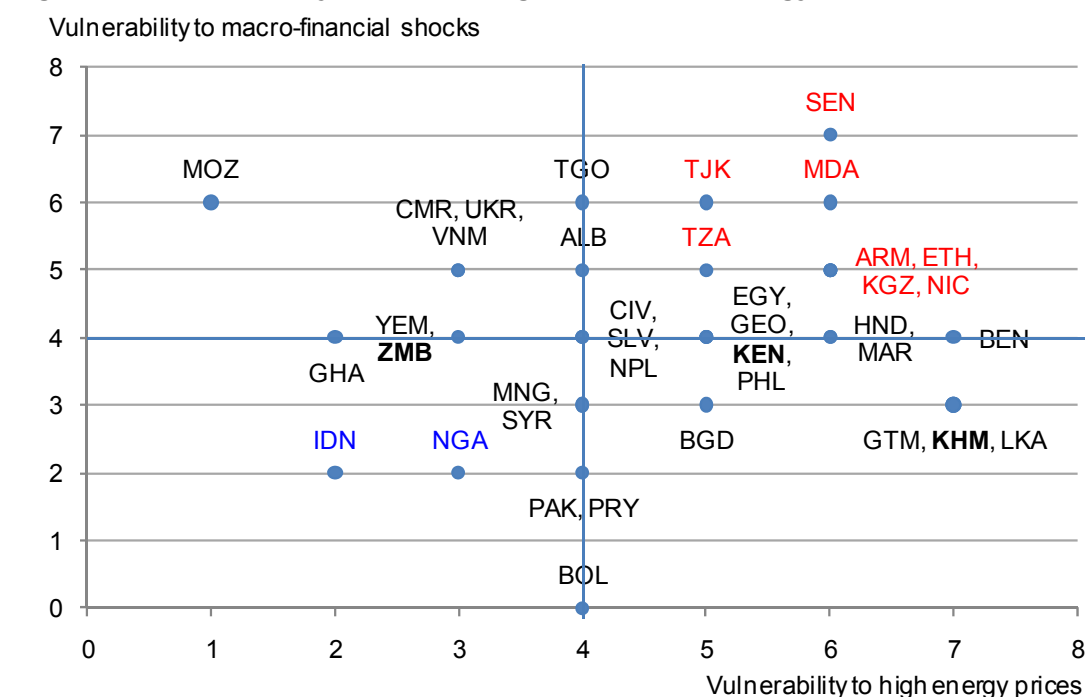
Sources: Authors' calculations on data from UN COMTRADE database (export values) and World dataBank, World Development Indicators dataset (GDP).

3.3 Summary of vulnerability assessment

On the basis of the information gathered in Sections 3.1 and 3.2 we assess the vulnerability of a selected sample of countries to both macro-financial and energy price shocks. Because of lack of data availability this analysis is limited to 38 countries (12 LICs and 26 LMICs).

We find that eight countries out of the 38 (about 21%) show a high degree of vulnerability to both energy and macro-financial shocks (Figure 35). Three of these are in SSA (Ethiopia, Senegal and Tanzania), four in Central Asia (Armenia, Kyrgyz Republic, Moldova and Tajikistan), and one in Central America (Nicaragua). Only two countries, Indonesia and Nigeria, show low vulnerability to both energy price and macro-financial shocks.

Figure 35: Vulnerability of developing countries to energy and macro-financial shocks



Key:

ALB	Albania	GHA	Ghana	MNG	Mongolia	SYR	Syria
ARM	Armenia	GTM	Guatemala	MOZ	Mozambique	TGO	Togo
BEN	Benin	HND	Honduras	NGA	Nigeria	TJK	Tajikistan
BGD	Bangladesh	IDN	Indonesia	NIC	Nicaragua	TZA	Tanzania
BOL	Bolivia	KEN	Kenya	NPL	Nepal	UKR	Ukraine
CIV	Côte d'Ivoire	KGZ	Kyrgyz Rep.	PAK	Pakistan	VNM	Viet Nam
CMR	Cameroon	KHM	Cambodia	PHL	Philippines	YEM	Yemen
EGY	Egypt	LKA	Sri Lanka	PRY	Paraguay	ZMB	Zambia
ETH	Ethiopia	MAR	Morocco	SEN	Senegal		
GEO	Georgia	MDA	Moldova	SLV	El Salvador		

Highly vulnerable countries in red; countries with low vulnerability in blue; case study countries in bold.

Source: Authors' elaboration on Tables 8 and 9.

Four of the countries found to be highly vulnerable are LICs (33% of the LICs in the sample), and four LMICs (15% of the LMICs in the sample). Higher levels of income seem to reduce the probability that a country is highly vulnerable to both macro-financial and energy price shocks.

A common characteristic of those countries found to be highly vulnerable to both macro-financial and energy price shocks is that they are net energy importers (oil, coal and gas), and thus vulnerable to increases in energy prices. On the macro-financial side, all these countries have fiscal and current account deficits. Moreover, three (Ethiopia, Senegal and Tanzania) appear to be highly exposed to a China/India growth slow-down.

During macro-financial and energy price shocks countries vulnerable to both types of shock are expected to perform worse in terms of growth than other countries. Preliminary evidence from the global financial/energy/food crises in 2008–9 (Table 11) suggests that the average percentage

point reduction in the growth rate of GDP in constant prices over the period 2008–9 in the group of countries identified in this study as highly vulnerable to both macro-financial and energy shocks was more than double (at an average 6.5 percentage points) that in the countries identified as having intermediate levels of vulnerability (at an average 3 percentage points). And for Nigeria and Indonesia, identified as having low vulnerability to both these types of shock, the average reduction was only 0.2 percentage points. Of the eight countries highly vulnerable to both types of shock, all experienced a reduction in GDP growth rate between 2008 and 2009, whereas almost 25% of all the remaining countries in the sample experienced an increase over the same period.

Table 11: Growth rates of LICs/LMICs during the global financial/energy/food crises in 2008–9

	GDP growth rate (constant prices) in 2008	Average GDP growth rate in 2008	GDP growth rate (constant prices) in 2009	Average GDP growth rate in 2009	Difference between average GDP growth rates in 2009 and 2008
Countries highly vulnerable to both macro-financial and energy price shocks					
Armenia	6.94		-14.15		
Ethiopia	11.18		10.04		
Kyrgyz Republic	7.56		2.90		
Moldova	7.80	6.91	-6.00	0.41	-6.50
Nicaragua	2.75		-1.47		
Senegal	3.68		2.06		
Tajikistan	7.90		3.90		
Tanzania	7.43		6.02		
Countries with intermediate vulnerability to macro-financial and energy price shocks					
Albania	7.53		3.31		
Bangladesh	5.95		5.91		
Benin	5.01		2.66		
Bolivia	6.14		3.35		
Cambodia	6.69		0.08		
Cameroon	2.55		1.97		
Côte d'Ivoire	2.32		3.75		
Egypt	7.15		4.67		
El Salvador	1.27		-3.13		
Georgia	2.31		-3.77		
Ghana	8.43		3.99		
Guatemala	3.28		0.52		
Honduras	4.11		-2.13		
Kenya	1.52	4.88	2.73	1.82	-3.06
Mongolia	8.90		-1.26		
Morocco	5.58		4.94		
Mozambique	6.83		6.33		
Nepal	6.10		4.53		
Pakistan	3.68		1.72		
Paraguay	6.35		-3.96		
Philippines	4.15		1.14		
Sri Lanka	5.95		3.53		
Syria	4.47		5.91		
Togo	2.37		3.50		
Ukraine	2.30		-14.80		
Vietnam	6.31		5.32		
Yemen	3.64		3.86		
Zambia	5.68		6.40		
Countries with low vulnerability to macro-financial and energy price shocks					
Indonesia	6.01	6.00	4.62	5.79	-0.21
Nigeria	5.98		6.96		

Source: IMF World Economic Outlook database.

Armenia, the country in our sample which experienced the greatest reduction in GDP growth over the period 2008–9 and is highly vulnerable to multiple shocks according to our analysis, was

severely affected by the global financial crisis in 2008 through drops in investment, exports, and remittances (especially in the construction sector). A drop in international metals prices and a downturn in the Russian economy also contributed to a rapid worsening of economic and financial conditions in the country in 2008. Moreover, Armenia depends on gas imports from Russia, and these were significantly discounted until 2009. Thereafter the country suffered an increase in the import price from \$110 to \$154 per thousand cubic meters in April 2009 (and a further increase to \$180 in April 2010).²² Ersado (2012) reports that the gas price hike also had serious consequences in respect of household poverty. Indeed, it resulted in a significant increase in energy expenditure, with a disproportionately higher impact on poor and vulnerable households.

22. <http://www.state.gov/r/pa/ei/bgn/5275.htm>.

4 Case studies

In this section, we describe the *actual* effects of the euro zone crisis, the growth slow-down in China and India and energy price shocks in three countries: Cambodia, Kenya, and Zambia. These countries have been selected to include a heterogeneous group of economies with differing degrees of vulnerability to the current global shocks as identified in Section 3 of this report. The country case studies were written mainly on the basis of in-country research work by Hem (2012), Mwege (2012), and Cheelo et al. (2012) which was commissioned by the Overseas Development Institute. Table 13, at the end of the section, summarises the impacts of the three shocks considered through the different transmission mechanisms: trade, private capital flows, aid, remittances and energy prices.

4.1 Cambodia case study

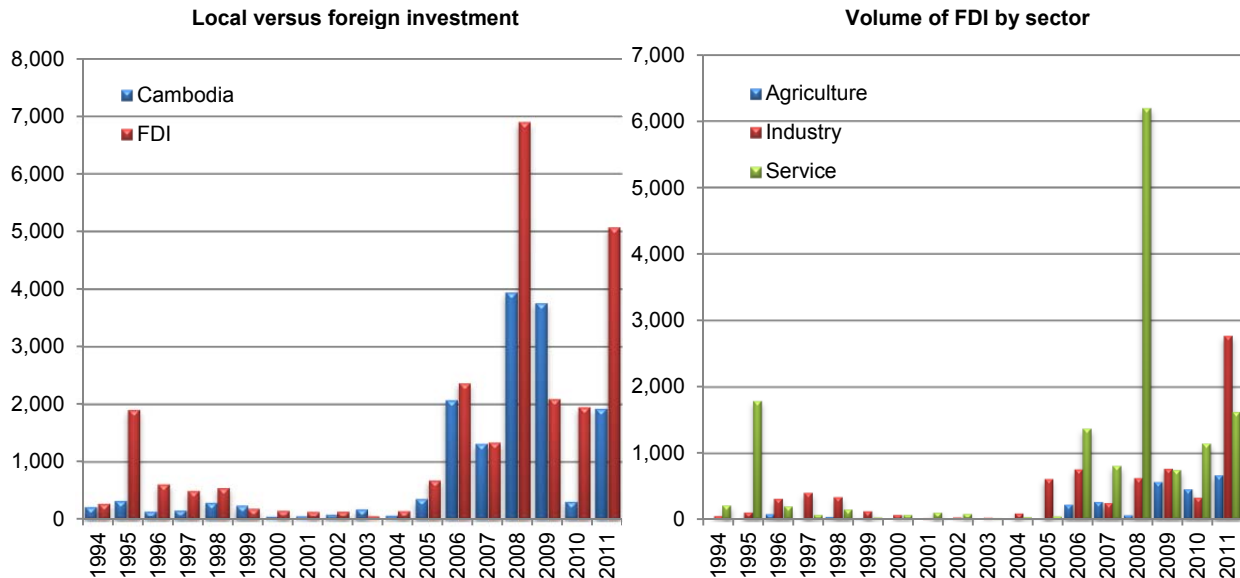
Section 3 shows that Cambodia has low overall vulnerability to macro-financial crises (although it has a high dependence on trade with the euro zone) but is highly vulnerable to energy crises.

The euro zone accounts for about 12% of Cambodia's exports, but China and India combined for only about 1.5%. Hem (2012) reports that if Cambodian exports to the EU declined by 10% this would cost between 1.0 and 1.2 percentage points of the country's GDP.

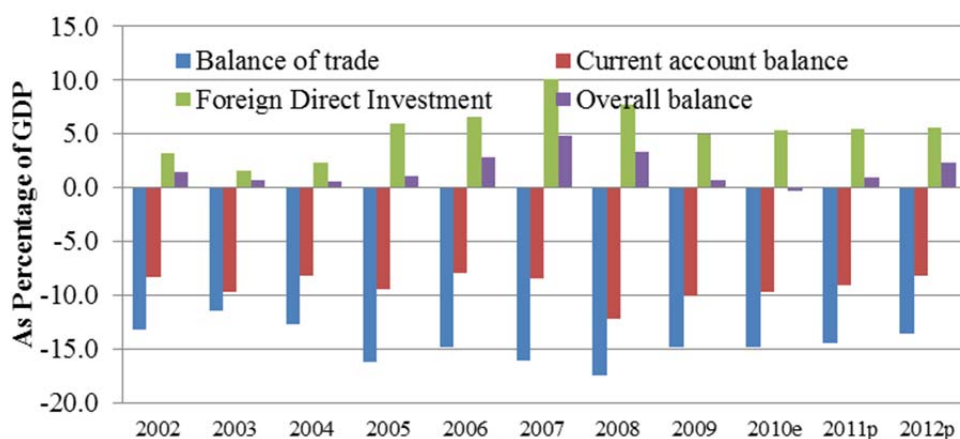
Cambodia mainly exports garments and rice to the US and EU. The EU imports around 75.5% of Cambodian rice exports and around 25% of garment exports.

The vulnerability of exports to EU is embedded in a context of weaknesses in the Cambodian economy. Hem (2012) reports that FDI is still lower than domestic investment (Figure 36) and that the country's trade balance and current account are negative (Figure 37).

Figure 36: Cambodia: investment flow (US\$ million)



Source: Hem (2012).

Figure 37: Cambodia: balance of trade and current account balance

Source: Hem (2012).

Despite its exposure to the European economy, our analysis shows that Cambodia has low vulnerability to macro-financial crises as the country has little exposure to China and India and, in terms of resilience, performs poorly only in relation to the current account and fiscal balance. The recent negative trend in aid flows (Table 12) could, however, signal the importance for policy makers of reducing the country's dependence on aid in order to lessen its exposure to external shocks.

Table 12: Cambodia: ODA received, 2002–12 (US\$ million)

Year	ODA	ODA from non-governmental organisations	Total
2002	530.9	45.568	576.5
2003	539.5	47.238	586.7
2004	555.4	49.449	604.8
2005	610	44.719	654.7
2006	713.2	50.162	763.4
2007	777.5	77.736	855.2
2008	955.6	104.915	1,061
2009	989.5	103.282	1,093
2010	1086	112.424	1,198
2011	744.7	n.a.	744.7
2012p	488.1	n.a.	488.1

Sources: Hem (2012) and Council for the Development of Cambodia (CDC).

As shown in Table 9 (Section 3.2), however, Cambodia is highly vulnerable to energy price shocks. Net oil, coal and gas imports accounted for 2.82%, 0.11% and 0.15% of GDP respectively in 2010, the share of renewable energy in total energy consumption was only 0.08%, and the country depended on imports for 30% of its energy needs. Hem (2012) reports that a 10% increase in inflation would lead to a 2.3% increase in poverty. Despite Cambodian government efforts to attract investment in the oil and gas sectors, to date there are not sufficient locally produced petroleum products to meet the growing local demand,

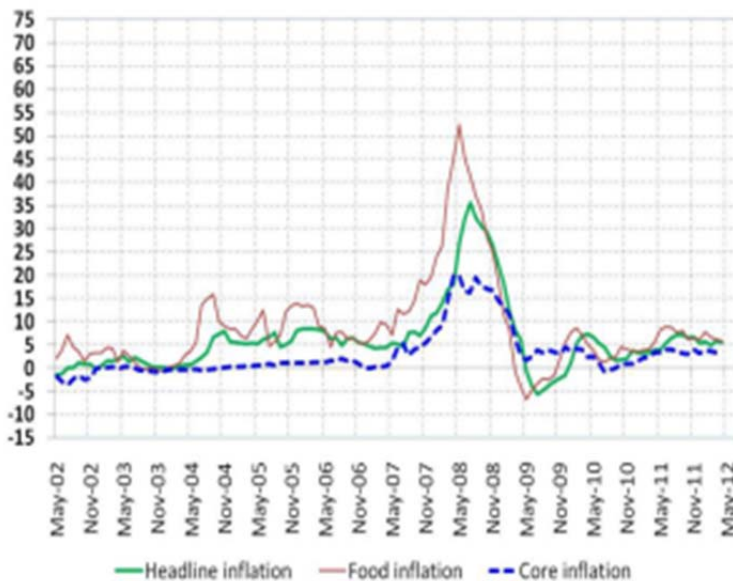
In 2011 Cambodia was also affected by a climate change shock. In September and October 2011 the country experienced one of the worst floods since 2000 (FAO, 2012): heavy monsoon rains and the consequent overflowing of the Mekong and Tonle Sap rivers resulted in widespread flooding, affecting over 1.5 million people, displacing 214,000 and causing the loss of 247 lives. The floods also had a significant impact on the agricultural sector, damaging over 400,000 hectares of paddy fields, as well as transport and agricultural infrastructure, including irrigation systems.

At least 60,000 households in the 18 flood-affected provinces, or roughly 25% of households in those provinces, were made food insecure in the immediate and short term as a result of the floods. Many of these, particularly the poorest, will require additional food and non-food assistance.

Cambodia responded effectively to these extreme events. Favourable rainfall in non-flooded areas throughout the country, increased use of fertiliser and use of improved seeds contributed to a rise in yield levels. In spite of the flood damage, the total paddy harvest for the 2011/12 agricultural year is estimated at a record level of 8.78 million tonnes of paddy (equivalent to 5.62 million tonnes of milled rice), 6.4% higher than the previous year's bumper output.

The Cambodian government responded to the oil price shocks in 2008 with electricity consumption subsidies, a fixed tax on petroleum imports and administrative measures aimed at reviewing the activities of fuel distributors to prevent crises. However, its energy policy now is different. The government has recently decided to cut subsidies for households consuming more than 200 KW/h).²³ Moreover, at the beginning of 2011 the fixed price tax on petroleum imports was replaced by an *ad valorem* tax. Improvements in the standard of living and an increasing number of middle-class Cambodians in Phnom Penh were factors in the government's decision to stop the subsidy and increase the tax rate on imports for electricity users. The reduction of the energy price subsidy was also possible because the Arab Spring oil price surges in 2011 did have an effect on Cambodian inflation comparable to that experienced during the 2007–8 global food/energy/financial crisis (Figure 38).

Figure 38: Annual inflation rate in Cambodia.



Source: World Bank (2011).

Interventions to weather the global financial crisis of 2008–9 included stimuli through tax exemption (US\$ 539 million in 2008), current government expenditure growth of 15% (US\$ 159 million) and government capital expenditure growth of 13% (US\$ 86 million). Any potential impact of an economic slow-down in the US and EU, the two largest markets for Cambodia's key garment and textile exports, is not yet apparent: merchandise exports in 2011 jumped by 36%, with exports of garments and textiles up 32% to reach US\$ 4 billion.²⁴ In the first six months of 2012 Cambodia's garment and textile exports totalled US\$ 2.1 billion, up 9% from US\$ 1.93 billion in the same period last year.²⁵

23. <http://www.phnompenhpost.com/index.php/2012070657247/Business/govt-to-cut-power-subsidies.html>.

24. <http://siteresources.worldbank.org/INTEAPHALFYEARLYUPDATE/Resources/550192-1337701176079/eap-update-may-2012-country-sections.pdf>.

25. http://www.chinadaily.com.cn/xinhua/2012-07-23/content_6511883.html

4.2 Kenya case study

Kenya faces not only adverse external conditions but also on-going governance reforms and a general election in the first quarter of 2013. Continuing uncertainty since the crises of 2008, as well as volatility in the global economy, commodity and financial markets, means that formidable policy challenges remain. As the data presented and discussed by Mwega (2012) show, fluctuations in key macro-economic indicators such as inflation and exchange rates have been severe, and driven largely by the external environment.

The effects of high oil prices have been passed through almost immediately. The rate of inflation reached a high of almost 20% in November 2011, as a result of high food prices, a spike in international oil prices and a weakening of the Kenyan shilling against major currencies. Since then, owing both to declining international prices and a rather aggressive monetary policy intended to reduce inflationary pressure and stabilise the Kenyan shilling, it has subsided, and remains within target at around 6%. As a result of concerns that price declines do not feed through to consumers as promptly as price increases, an Energy Commission was established in 2010 so as to monitor prices and ensure that declines as well as increases in global oil prices are passed on. However, this will do little to lessen the burden of the higher oil prices which are projected for the next few years.

At the macro level, the economy remains imbalanced and vulnerable to external shocks because of the growing gap between imports and exports (World Bank, 2012d). The shortfall between export revenue and the cost of imports has meant that Kenya's current account deficit has increased substantially, reaching more than 10% of GDP in 2011. This is because of limited growth in Kenya's export value and considerable increases in Kenya's import bill as a result of high food and fuel prices. Whilst growth in intra-regional trade has held up well,²⁶ there has been an almost 10% decline in the volume and value of Kenya's major exports to extra-regional markets: in the first six months of 2012 horticulture exports declined to US\$ 338.7 million from US\$ 368.5 million in the same period in 2011, attributed to lower demand, particularly for fruit and vegetables, because of the euro zone debt crisis.

Demand for traditional commodities remains rather uncertain. For example, the Coffee Board of Kenya has predicted increased production in 2012, buoyed by improved earnings in 2011. However, uncertainty reigns because of large fluctuations in prices. In the first six months of 2012 the value of coffee exports increased by some 37% (to US\$ 152.85 million). The value of tea exports, on the other hand, declined by around 3% (to US\$ 562.22 million in the first six months of 2012).

The regulation of prices in the domestic market, rather than other policy measures such as subsidies or tax relief, remains the central means through which the government attempts to address continued volatility in oil prices. This is because the current administration remains committed to the budget for 2012–13 and its borrowing targets; a budget deficit of not more than 5% of GDP is likely to be achieved, since although revenue targets are unlikely to be met government expenditures have been less than anticipated. As a result of ongoing IMF programmes to address persistent and high current budget deficits, notably since the global financial crisis, there is a perception that there is limited room for manoeuvre on the fiscal side which instead means that monetary policy is the central policy tool to mitigate the adverse impact of external market conditions on domestic.

Concerns over dramatic exchange rate developments led to the establishment of a parliamentary select committee in November 2011 to inquire into and investigate fully the causes of the drastic decline of the Kenyan shilling against foreign currencies that occurred in the final quarter of 2011 and to make recommendations on the way forward.²⁷ During the first four months of 2012 the

26. Given the significance of Kenyan exports to Uganda and Tanzania, any cutback in aid in these countries could have second round effects on Kenya through reductions in demand.

27. See http://marsgroupkenya.org/pdfs/2012/02/Report_2011_Kenya_Exchange_Rate_FINAL_MONDAY_printed.pdf

shilling appreciated against the US dollar (to 82.9 from 101.3), the UK pound (to 131.2 from 159.4) and the euro (to 109.6 from 138.9), which represents a nominal appreciation of about 18% against these major currencies since October 2011 (World Bank, 2012d).

The exchange rate continues to remain flexible, although interventions are made to dampen speculative activity to the extent possible.²⁸ These include managing short-term capital inflows through, for example, increasing regulation of the market for foreign currency swaps. Discussion within policy circles includes the potential use of an early warning mechanism which would put in place thresholds or trigger values which could better guide interventions by the central bank. The World Bank (2012d) notes that, going forward, any reduction in interest rates needs to be gradual, so as to maintain macro-economic stability and not endanger external financial inflows which help to stabilise the exchange rate.²⁹

Other, more targeted, interventions within the realm of finance have been made in relation to the Kenyan diaspora so as to increase foreign exchange reserves through the purchase of government bonds. Increased uncertainty in global financial markets has created perverse incentives and raised the returns for short- relative to long-term investments. In order to address these asymmetries, the government will attempt to boost long-term investment within the economy through the creation of longer-term bonds. On the whole FDI flows have been fairly resilient since the start of the euro zone crisis, increasing from US\$ 95.6 million in 2008 to US\$ 335.2 million in 2011 (Mwega, 2012).

Despite the effects of the euro zone crisis and the resultant slow-down in emerging economies, and consequent effects on trade and investment, growth remains high. Most recent estimates by the World Bank (2012d) project a growth rate of 5% in 2012, up from 4.3% in 2011. The assumptions that underlie this projection include the effective management of the new constitution and general election, reductions in existing macro-economic distortions and resilience to external shocks.³⁰ In its most recent Economic Update for Kenya (titled 'Walking on a Tightrope') the World Bank (2012d) notes that Kenya's economy is stabilising (driven by an increase in interest rates and reduction in fiscal deficit towards the end of 2011) but still vulnerable. However, it warns that the current account deficit has reached new record levels and could exceed 15% of GDP in 2012.

There is a lack of recent data on poverty estimations for Kenya. Figures quoted by the World Bank (2012d) are based on analysis of data from the Integrated Household Budget Survey 2005/6, the result of which indicates that national absolute poverty declined from 52.3% in 1997 to 46.1% in 2005/6. These are the most recent data available. What is clear is that formidable pressure remains on the government to act to relieve the burden of increases in the cost of living on the general public, notably public sector workers: teachers, university lecturers and doctors. Recent strikes highlight the challenges faced by the current administration (and which will presumably be faced by the next) in relation to the constraints that the external financing environment is placing on its scope to intervene on the fiscal policy side.³¹

28. Considerable foreign exchange was sold to stop speculation in 2011. Other efforts are under way so as to improve information on short-term capital flows and reduce errors and omissions in the balance of payments.

29. A financial stability committee has been established within the last two years which now collects information on stability indicators; improvements in bank regulations are also under discussion, given the implications of, for example, Basel III regulations. The government is also seeking to improve the collection of balance of payments statistics, including FDI and types of short-term capital inflow.

30. The economy grew by an estimated 4.3% in 2011, lower than the 5.6% in 2010, and still considerably less than the pre-global financial crisis levels of around 7%.

31. In most recent announcements the IMF has asked the government to stick to fiscal discipline in the face of spending pressures as opposed to borrowing. According to the IMF projections, the net public debt in relation to GDP will decline from 44.6% this year to 43.8% next year. See: <http://www.nation.co.ke/business/news/Cut+spending+IMF+team+tells+Kenya/-/1006/1517418/-/22oej7/-/index.html>.

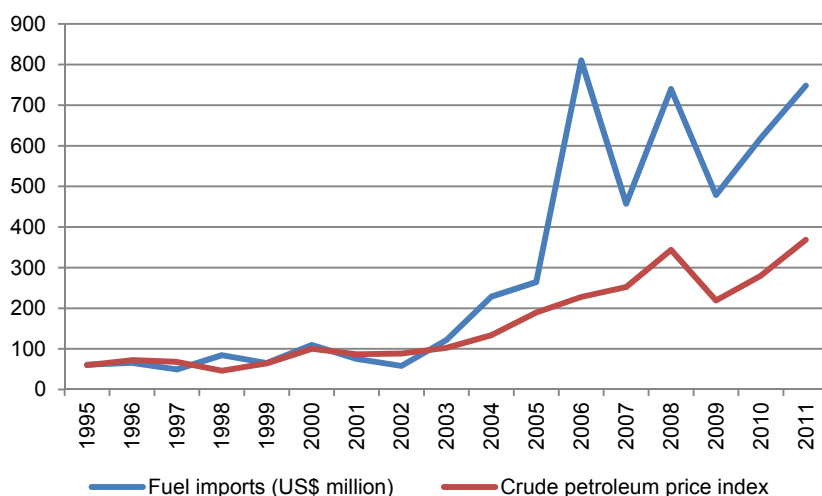
4.3 Zambia case study

Zambia is highly vulnerable to China's growth slow-down, but much less so to the euro zone crisis (see also Table 8, Section 3.1). This is because it has high trade and financial linkages with China. Indeed, China is the second-largest market for copper exports which are key for Zambia, a country with rather limited diversification of exports, and is also the third-largest source of imports (mainly manufactured products and intermediate inputs such as machinery parts and vehicles), after South Africa and Democratic Republic of Congo.³² Moreover, subsidiaries of Chinese banks dominate the banking sector in the country, together with subsidiaries of foreign banks from South Africa, the United Kingdom and the Netherlands. China is also a key source of FDI in the mining sector and has provided significant amounts of ODA for the building of schools, health centres and stadiums.

On the other hand, the economic and financial relationships between Zambia and the euro area are much weaker. European countries (especially Belgium and the Netherlands) import mainly non-traditional products from Zambia (e.g. copper wires and electric cables, and cotton lint), but the amounts of such flows are insignificant. Moreover, while European countries are important investors in the mining sector (e.g. France, Switzerland, the United Kingdom and the Netherlands), most of these countries are not members of the euro zone. The European engagement with Zambia through financial intermediaries and stock markets is also negligible: claims on Zambia by EU banks (in particular Germany and France) are insignificant, and participation of investors from Europe in the Lusaka Stock Exchange is limited. Furthermore, countries of the euro zone are not major donors to Zambia, unlike the United Kingdom, Sweden, Denmark, the US, and Japan.

Zambia appears to be vulnerable not only to China's growth slow-down, but also to energy price shocks. Indeed, the country is increasingly reliant on fuel (mainly petroleum) imports for its energy needs. As is evident from Figure 39, fuel imports increased significantly between the mid-1990s and 2011 – from US\$ 61 million in 1995 to US\$ 748 million (7.4% of the total import bill) in 2011. Although this is partly owing to crude oil price increases, it is also attributable to the increased demand for fuel in copper production and the sustained growth experienced by the country over the period (Cheelo et al., 2012). Major increases in the prices of energy are therefore likely to have a significant impact on the economy through higher costs in both production and consumption. However our analysis shows that despite Zambia's degree of exposure to oil price shocks, its performance against the gas and coal market exposure and resilience indicators analysed is better than that of other LICs and LMICs (see Table 9, Section 3.2), and for this reason Zambia is not included in the group of countries which are highly vulnerable to energy price shocks.

Figure 39: Zambia: fuel imports and crude petroleum index, 1995–2011

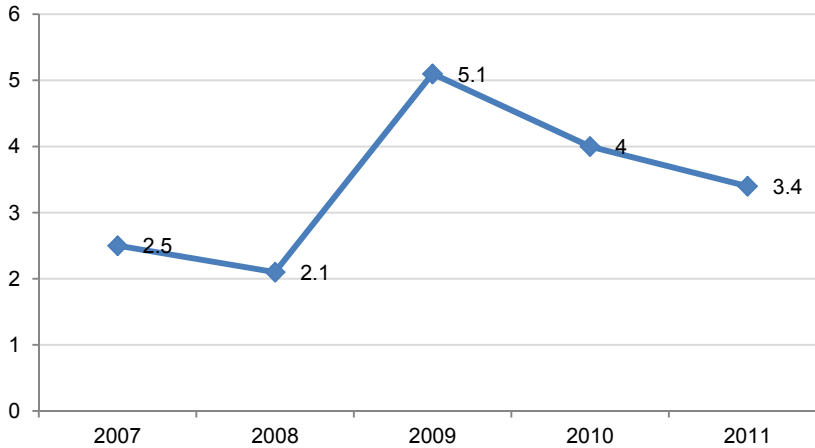


Source: Adapted from Cheelo et al. (2012).

32. According to data reported by Zambia to the UN's COMTRADE database.

Notwithstanding its high degree of vulnerability, Zambia has so far weathered the current global turmoil relatively well. This may be partly because the country still has good economic buffers to respond to external shocks: the current account position is comfortable, thanks to high export earnings because of high copper prices; reserves are healthy, although after the 2008–9 global financial crisis they have started to fall (getting closer to the three months of imports threshold) (Figure 40); the debt burden is manageable (below the 50% threshold); and the fiscal budget deficit has been restricted to 3% of GDP (slightly above the 2% threshold) (Table 8; Cheelo et al., 2012).

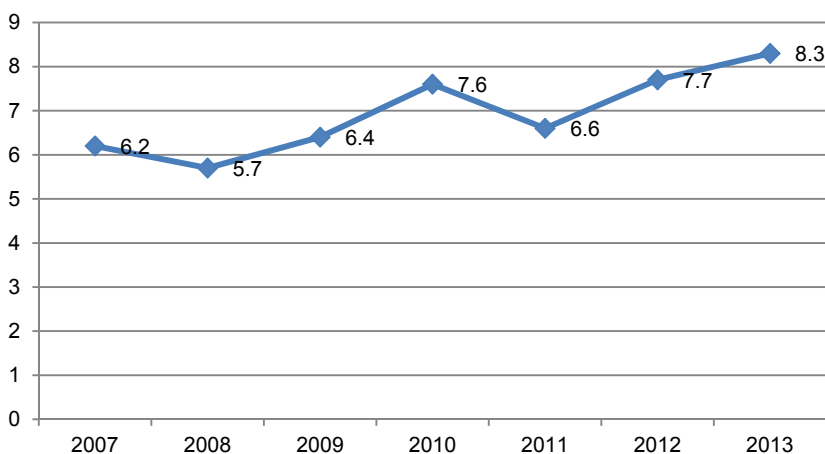
Figure 40: Zambia: reserves (months of imports), 2007–11



Source: Cheelo et al. (2012).

As a result the country has experienced sustained growth in recent years, and medium-term prospects are positive, with economic growth projected to be 7.7% in 2012 and 8.3% in 2013 (Figure 41). However, Figure 41 also shows that both the 2008–9 global financial crisis and the most recent global turmoil due to the euro zone crisis and China's growth slow-down have taken their toll on Zambia's growth, which declined from 6.2% in 2007 to 5.7% in 2008 and then, having rebounded to 7.6% in 2010, declined again to 6.6% in 2011.

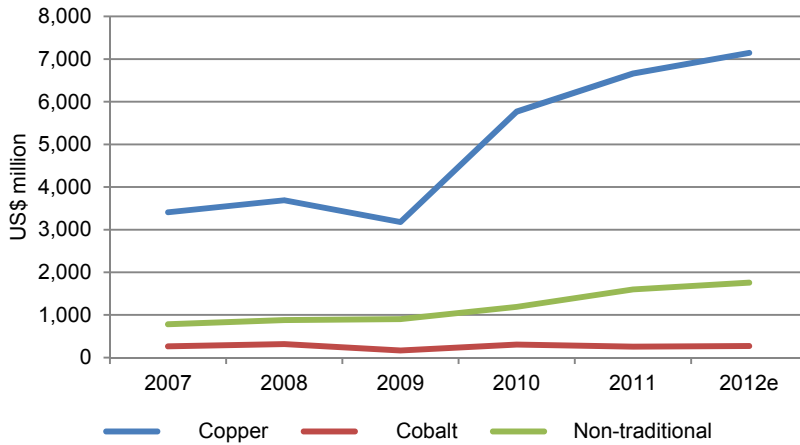
Figure 41: Zambia: real GDP growth (%), 2007–13



Source: Cheelo et al. (2012).

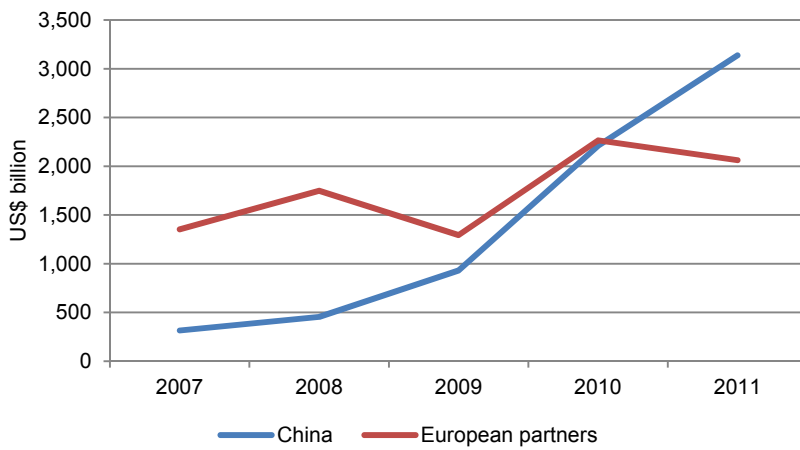
The impact of the euro zone crisis and China's growth slow-down started to become apparent in 2011 and is expected to continue in 2012. The value of copper exports increased, but at a slower pace in 2011 (and in estimates for 2012) than in 2009 (Figure 42). The value of exports to European partners declined in 2011, while those to China increased but at a much lower rate (42%) than in the previous year (137%) (Figure 43).

Figure 42: Zambia: metal and non-traditional exports, 2007–12



Note: e=estimated.
Source: Cheelo et al. (2012).

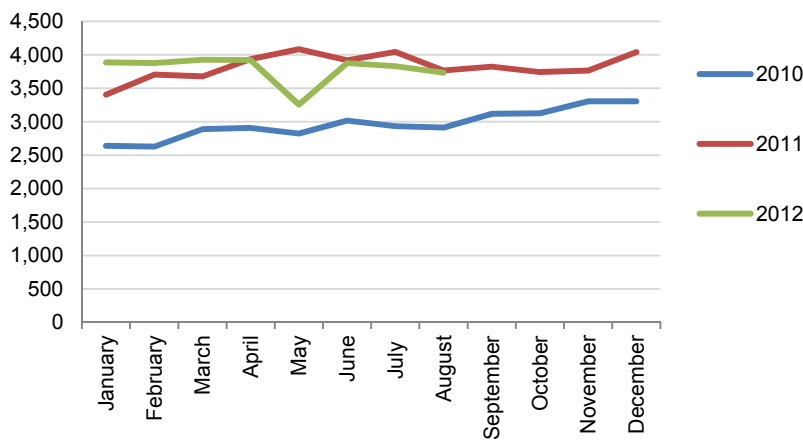
Figure 43: Zambia: total exports to European partners and China, 2007–11



Source: Adapted from Cheelo et al. (2012).

Shifts in investor market sentiment because of the euro zone crisis led the Lusaka Stock Exchange All Share Index to drop significantly in May 2012 (Figure 44).

Figure 44: Zambia: Lusaka Stock Exchange All Share Index



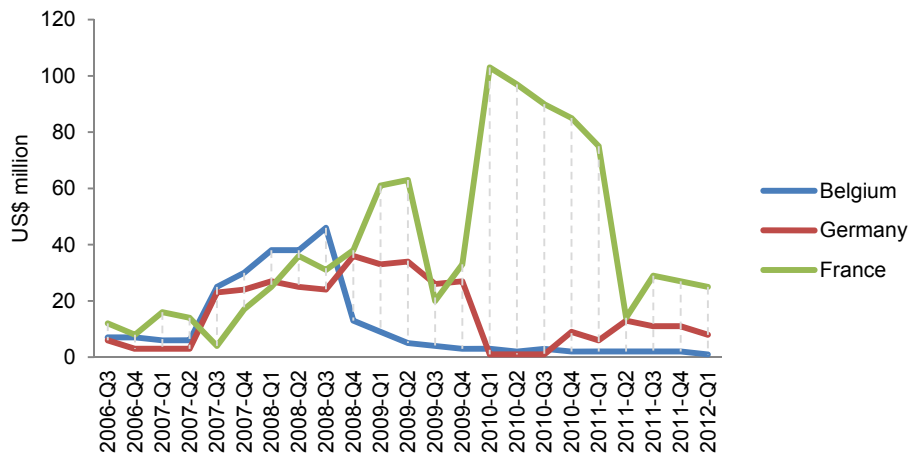
Source: Cheelo et al. (2012).

Since July 2011 foreign portfolio equity flows and foreign investment in government securities have experienced a downward trend, but Cheelo et al. (2012) highlight that this is likely to be owing to

political uncertainty because of the new government rather than the euro zone crisis and BRIC slow-down. It is noteworthy that, the global shocks notwithstanding, Zambia successfully issued its first US\$ 750 million sovereign bond in September 2012, to be used for economic development and growth promoting projects (e.g. health and education projects, road development, and the hydro power project which is important to reduce the country's vulnerability to energy shocks).³³ This confirms the fact that bond flows have tended to be more resilient than portfolio equity flows to the recent global shocks (see Section 2).

As shown in Figure 45, cross-border bank lending from the main euro zone banks declined in the second half of 2011, although this is unlikely to have any major impact on the economy since the amounts involved are relatively insignificant. Cheelo et al. (2012) also report that investment pledges from China directed mainly to the mining, manufacturing and construction sectors have also reduced in value in 2011 compared to 2010.

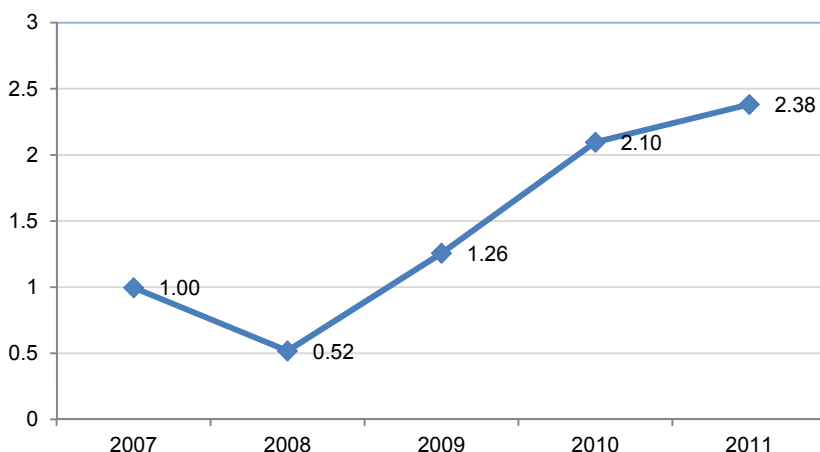
Figure 45: Zambia: cross-border bank lending from EU banks



Source: Adapted from Cheelo et al. (2012).

Aid flows to Zambia as a share of GDP continued to increase in 2011 but at a slower pace (Figure 46). Remittance inflows are likely to be affected indirectly through reduced worker remittances to Zambia from South Africa, which is much more exposed to global shocks (*ibid.*).

Figure 46. Zambia: ODA as a % of GDP, 2007–11



Source: Cheelo et al. (2012).

Although the impact of the current global shocks has so far been relatively limited, a further slow-down in China's growth may have a significant impact on Zambia's economy, with severe

33. <http://www.daily-mail.co.zm/?p=14289>.

implications for poverty – especially in the rural areas, where about 78% of the population live below the poverty line compared to 28% in urban areas (*ibid.*).

In order to build resilience against external economic shocks, the government of Zambia has promoted a prudent fiscal and monetary policy and supported a flexible market-determined exchange rate policy (*ibid.*). Nevertheless, in order to reduce extreme poverty, an active social policy aiming at protecting social expenditure and enhancing social protection systems is needed (*ibid.*).

Table 13: Summary of shocks' impact on the case study countries

Area of impact	Cambodia	Kenya	Zambia
Trade	Effects of US/euro zone crisis are not yet fully apparent. Good export performance in 2011 and 2012.	Mixed performance across major exports – aggregate exports have increased since 2008 to date. Horticultural exports have declined on an annual basis since 2011. The value of coffee and tourism exports has increased since 2009.	Copper exports increased at a slower pace in 2011 and 2012 (in estimates) than in 2009. Exports to European markets declined in 2011. Exports to China increased, but at a much lower rate in 2011.
Finance	Negative current account and trade balances. Increase of FDI from US\$ 2 billion to US\$ 5 billion over 2009–11, but domestic investments still weak.	Although net capital flows increased in 2010 they have declined in 2011 and 2012.	The Lusaka Stock Exchange All Share Index dropped significantly in May 2012. Since July 2011, foreign portfolio equity flows and foreign investment in government securities has declined but mainly due to political uncertainty in the country. Cross-border bank lending from the main euro zone banks (Germany, France) collapsed in the second half of 2011. Investment pledges from China in the mining, manufacturing and construction sectors declined in 2011.
Exchange rate	Cambodia has been able to keep the exchange rate at a controllable level against the US dollar.	Dramatic exchange rate depreciation against major currencies (US, Euro Sterling) in 2011.	n.a.
ODA	More than 50% reduction in ODA over 2010–12.	ODA flows from the EU have decreased since 2007.	Aid flows as a share of GDP increased at a slower pace in 2011.
Remittance	Increase from US\$ 321 million in 2010 to US\$ 354 million in 2011	Growth in remittances on an annual basis since 2010 to date.	Indirect effects through reduced worker remittances to Zambia from South Africa.
Energy prices	High exposure and vulnerability to energy prices.	Almost immediate pass-through effects of high oil prices; oil typically accounts for 20-25% of the national import bill and 6-11% of GDP	High vulnerability due to increasing reliance on fuel imports for the country's energy needs.

Note: n.a. = information not available.

Source: Authors' elaboration on different sources.

5 Policy analysis

This section discusses policy implications. We will address whether developing countries should be concerned about the multitude of external shocks that they are facing (sub-section 5.1), how countries are expected to respond (sub-section 5.2), how they are actually responding (sub-section 5.3), whether anything needs to change (sub-section 5.4) and how the international community might help (sub-section 5.5).

5.1 Should developing countries be concerned?

Developing countries are faced with a series of international macro-economic shocks. Is this a cause for concern, and if so to what degree? The shocks that are faced by LICs have traditionally been mostly domestic in nature. For example, Raddatz (2007) finds that external shocks can explain only a small fraction of the output variance of a typical LIC. The majority of shocks experienced by developing countries are of domestic origin – and in the past have often derived from weak macro-policy discipline. However, by comparing external and internal shocks as sources of macro-economic fluctuations in African countries in the periods 1963–1989 and 1990–2003, Raddatz (2008) shows an increase in the relative importance of external shocks as sources of output instability in the last 15 years. He argues that this is the result of two factors: (i) a decline in the variance of internal shocks, and (ii) an increase in the vulnerability of output to external shocks. Indeed, global economic shocks are becoming relatively more important. For example, in Kenya fluctuations in inflation and exchange rates have been severe, and driven largely by the external environment (Mwega, 2012). IMF (2012a) suggests that shocks such as spikes in global uncertainty have also become more frequent, while others such as domestic banking crises and credit booms have become less so. That LICs have become more open (trade, investment and remittances have grown as a percentage of income in nearly all economies) and that global shocks have become more frequent, and that the effects of (short-term) shocks can be devastating on growth and development outcomes (Winters et al., 2010), suggests *prima facie* that developing countries should indeed be very concerned.

A further reason to be concerned is the newness of some of the current shocks: in the past we examined the effects of developed country shocks on LICs, now there are also shocks arising in the emerging powers with which LICs are increasingly engaged (see te Velde, 2010). A more sudden slow-down in China than is currently predicted would hit confidence everywhere. A further worry is that the use of buffers (such as reserves and fiscal space) by many countries to address the effects of the 2008–9 crisis will have led to a deterioration in their fiscal and external balances. The IMF Regional Economic Outlook for SSA (IMF, 2012e) argues that room for manoeuvre to address shocks has declined a little. SSA government debt (as a percentage of GDP) declined in the 2000s to 28.9 in 2008, but has since risen to 33.1, a rise prevalent especially in the African MICs. SSA government deficits excluding grants (including grants) average -4.3 (-3.2) in the last four years to 2012, but 0.8 (2.4) in the four years up to 2008, although the deficits in African LICs have remained high and constant throughout.

A final reason to be concerned is that cyclical changes in trade and commodity prices appear to have stimulated recent growth in many LICs which leads to concerns that this may not be sustainable.

However, these concerns need some major qualifications. First, most developing countries, including the poorest, are still growing, and faster than developed countries. While growth in Europe has turned negative, growth in SSA has been remarkably resilient given the large external shocks. SSA real GDP grew at 5.3% in each of 2010 and 2011. It is also expected to grow at this rate from 2012–13. SSA 's gross fixed capital formation (as a percentage of GDP) was 1.5 percentage points higher in the past five years than in the previous five years. The step up has been remarkable especially in low-income and fragile countries. The current turmoil has cut global incomes by some 2 percentage points (2012 compared to 2011) across regions

Second, we need to keep shocks in perspective. The present combined global shock seems smaller than the 2008 global economic crisis, which cut income growth by some 5 percentage points (although we do not have perfect information on the future magnitude of the effects from the current shocks). So even if exports amount to some 30% of GDP (the average for SSA), the current slow-down may cut growth by a maximum of 1% (in accounting terms) or a fifth of expected growth in SSA.

Third, the underlying strength of LICs is in general still high. It is true that buffers (reserves, fiscal deficit) deteriorated in 2008–9, but they are still better now than one or two decades ago. Better policies have created more fiscal space and a slightly more diversified economy (in economic and trade structures and the composition of capital flows) in this decade than previously. In fact some countries have done really well and transformed structurally and hence become more resilient.

For example (see IMF, 2012e), Burkina Faso has succeeded in raising average agricultural productivity levels in recent years through good agricultural policy. Tanzania has succeeded in developing its manufacturing sector; processed food, beverages, and tobacco products, followed by manufacturing of furniture and other wood products, helped by structural reforms. Reductions in tariffs and non-tariff barriers, market deregulation and privatisation, and large public investments in infrastructure, including in the energy sector, fostered rapid productivity growth. Namibia has successfully diversified away from non-renewable natural resources; According to the IMF, this was achieved through key interventions including the development of export processing zones, industrial parks, small- and medium-sized enterprise development programmes, and active promotion and marketing of Namibia's investment opportunities to potential foreign investors. These policies facilitated an increase of 5 percentage points in the manufacturing sector's contribution to total exports, reaching 20% by 2006. As it well known, Mauritius and Kenya are good examples of countries that have developed a successful service sector which helped them to withstand the previous crisis (te Velde, 2010).

Fourth, the varied nature of shocks, economic structures and transmission mechanisms means that different effects are experienced in different countries. Section 4 shows that the vulnerability of different countries confronted with a similar exogenous shock varies markedly; for example, Cambodia was affected much more than Zambia when the EU and US slowed down in 2008–9. This paper and IMF's World Economic Outlook of October 2012 have examined a slow-down of China. The most heavily exposed emerging market economies are those within the Asian regional supply chain, such as Korea, Malaysia, and Taiwan China. Among commodity exporters, the impact is largest on mineral ore exporters with relatively less diversified economic structures and higher concentrations of exports to China. We expect much larger effects on Zambia and Chile than on Brazil or Indonesia. The big lesson is that not all countries are vulnerable to all shocks.

In Section 3 we scored vulnerability to both energy price and macro-financial shocks, although the case studies indicate that these measures are only partial indicators of countries' actual vulnerability. Eight countries (four LICs and four LMICs) out of the 38 in our sample (about 21%) show high vulnerability to both energy and macro-financial shocks: Ethiopia, Senegal and Tanzania, Armenia, Moldova, Kyrgyz Republic and Tajikistan, and Nicaragua. The list of countries that would be highly vulnerable to all shocks would narrow were more shocks (e.g. food prices) considered. When there is a series of shocks, some *effects of shocks* cancel each other out. For example, a macro-economic slow-down and high oil and food prices will hit the most open economies which are net food and oil importers, but for economies which are net food and oil exporters the net effects may be more neutral.

Finally, many shocks are interdependent and some (in addition to their effects) cancel each other out. For example, a sustained slow-down in both developed and emerging powers would be unlikely to be accompanied by sustained high commodity prices. The commodity boom in the years to 2007 was attributed to high demand/growth in emerging powers, so a slow-down in China and India should eventually lead to lower commodity prices (depending also, of course, on other circumstances such as geopolitical and supply conditions). High oil prices would cut growth which would cut demand for oil, lowering its price.

5.2 How are countries expected to respond?

Faced with a greater level of exposure to shocks, small and vulnerable countries need to have a strategy to deal with uncertainty as they become more resilient. In general, there are five ways in which governments can address uncertainty:

1. by reducing uncertainty and the occurrence of shocks at global level;
2. by reducing country-level *exposure* to a global shock;
3. by macro-economic management (inflation management, insuring against a crisis and improving resilience);
4. by improving social protection (coping with a crisis through social resilience);
5. by growth and productivity enhancement policies, including diversification (escaping from a crisis).

Policy options 1–2 reduce exposure, whilst policy options 3–5 increase resilience. We consider the importance of each of these policy responses in turn.

The first option, reducing global uncertainty, is normally not a practical possibility for LICs as they lack the influence to do so, although it would be in their own interest if they too demanded, e.g., financial sector, budgetary and structural reforms in the euro zone or more energy efficiency globally. Natural disasters with large economic consequences, such as hurricanes or drought, will be even more difficult to influence, if not impossible.

National governments do, however, have the possibility to reduce country-level exposure, for example by reducing global financial links to crisis-affected countries (although this may be expensive in terms of forgone finance in good times, so not a sustainable option), or by diversifying the economy so that commodity-specific shocks can have fewer direct effects in relative terms. Diversification has its advantages and disadvantages. Among the advantages is that a portfolio diversification strategy reduces the risks of commodity-specific shocks (e.g. Uganda's intra-regional exports have held up much better than those to developed countries directly affected by the global financial crisis; Mauritius's information and communication technology export revenues have held up better than those from tourism). But it might also be costly to diversify and defy comparative advantage, and too much diversification might mean it is not possible to reap economics of scale or scope in production, or to learn by doing through specialisation. Countries therefore need targeted diversification into the right products, and more discussion needs to go into identifying what this might mean (see, for example, Lin et al., 2011).

Macro-economic management is a major issue frequently highlighted. We have already discussed in Section 3 how countries have been able to contain or conceal inflationary pressures better during the current shocks through lower tax or subsidies. Further, high external reserves and low government debt enable a countercyclical stimulus. During the global economic crisis of 2008–9 Mauritius and St Lucia were hit by similar shocks. Mauritius, which had established an improved fiscal position over a number of years, was able to introduce a countercyclical growth-enhancing stimulus; St Lucia was not able to do so. Over recent years the IMF has relaxed its rules on deficit financing in times of crises.

While building up external and fiscal reserves is a means of self-insurance, not all countries decide not to do this because of populist demands. It can also be expensive: resources used to build up reserves cannot also be used for growth-enhancing spending on, for example, infrastructure or skills enhancement. An alternative is to buy in insurance from international markets for a risk premium. The Caribbean Catastrophe Risk Insurance Facility works on this basis, providing liquidity finance recovery from shocks after a crisis has hit. Donors can help the poorest and most vulnerable further through the availability of shock financing.

Social protection can be an important response for small and vulnerable countries as a coping strategy. At best, such policies can help to protect critical investment in growth assets (e.g. livestock, or education of children) that may protect long-run development. At worst, though, social protection provides an expensive short-term boost that can prove a drag on future growth. When

targeted well, social protection and macro-economic measures will protect future growth; but when targeted poorly, such measures simply add to the problems. This means that we need to have a very good and active knowledge of what are the binding constraints to growth. This leads us to the final option to deal with uncertainty.

An important and seemingly unavoidable response to uncertainty is for a country to absorb the shock but to introduce appropriate growth and productivity measures to lessen its effects. It is difficult to be prepared for all possible types of uncertainty *ex ante*, but the ability to innovate and increase the efficiency with which scarce resources are used at the time of the shock might help countries to deal most effectively with uncertainty (hence the policy and institutional component of building resilience). If, for example, there is a sustained period of high oil prices, investment in energy efficiency and renewable energy provision will see higher rate of returns. If preference erosion in commodities provides new uncertainty for previously protected African, Caribbean and Pacific exporters, cost reduction in sugar production and diversification into other activities will be associated with greater returns. The construction of flood-, earthquake- and hurricane-resistant buildings will help in withstanding some natural shocks. Sustainable food consumption, efficient food storage and waste reduction are always important for development, but they will have an even greater return when food prices are high or volatile. The ability to break into new product markets is a key component of an innovation strategy when traditional European markets are retracting. Moreover, a diversified economy will reduce the exposure of a country and may enhance export revenues and hence strengthen reserves.

Targeted innovation and efficiency enhancements will therefore be core elements in countries' strategies to deal with uncertainty. How can countries achieve this? Generally, the process of innovation, technical change and productivity enhancement is littered with market, co-ordination and governance failures. States and businesses cannot deal with this in isolation, but need to work in consultation with each other to remove the most binding constraints to innovation and share risks. This requires high-quality skills and effective institutional arrangements such as well organised private sector associations and a responsive civil service with a certain level of embedded autonomy from elite capture that can plan ahead in the general interest of the country. Mauritius, Singapore and Dubai are examples of countries that have continued to innovate in the face of shocks and uncertainty – and there are other examples. We do not need to assume that such countries will remain exceptions. A changed mindset that can address market, co-ordination and governance failures in the process of innovation and efficiency improvement should be part of any strategy to cope with uncertainty.

5.3 How are countries responding to crises?

We now discuss briefly country-level responses on the basis of the case studies conducted.

The major growth sectors in Cambodia, such as garments, tourism and rice exports, tend to be more exposed to a euro zone than a China/India crisis. Although Cambodia was one of the major sufferers in the 2008–9 global financial crisis (consistent with our vulnerability index), it has rebounded well because (a) garment exports recovered quickly and (b) agricultural output held up well. So even though Cambodia's exports are concentrated in only a few sectors, there has been at least some diversification which was not lost during the crisis. Agricultural productivity also increased. Cambodia responded to the crisis with a number of countercyclical macro-economic measures and it reduced tax and subsidies on energy, concealing the energy price rises. So there appear to be no major long-term macro-economic effects of the 2008–9 shock.

Kenya has been hit by a variety of external shocks with immediate pass-through of energy prices to the domestic economy. Growth remains high nonetheless, but macro-economic balances are under pressure (especially the current account, but also the fiscal balance, although the long-term debt sustainability framework is not under major threat), and Kenya needed an IMF programme. So although Kenya is still enjoying growth, recent external crises are beginning to make their mark (e.g. on horticulture exports, for which Europe is the main market, and by way of declining tourist arrivals and remittances that have ceased to increase). Kenya's response has been expansionary

in terms of the size of the budget deficit, and in addition the budget was largely pro-growth (and included a removal of excise duties on kerosene and import duties on maize and rice) with infrastructure spending increasing by one-third and greater reliance on external financing of deficit (Mwega, 2012).

Zambia weathered the global financial crisis of 2008-9 quite well. This is because it is not particularly vulnerable to a slow-down in the euro zone. It is, however, more exposed to a slow-down in China and India, and this is worrying for the future. In addition, the value of its fuel imports has increased rapidly. While the current account and debt burden are manageable at present, it remains to be seen to what extent Zambia is able to sustain growth in the face of a China/India slow-down.

5.4 What needs to change?

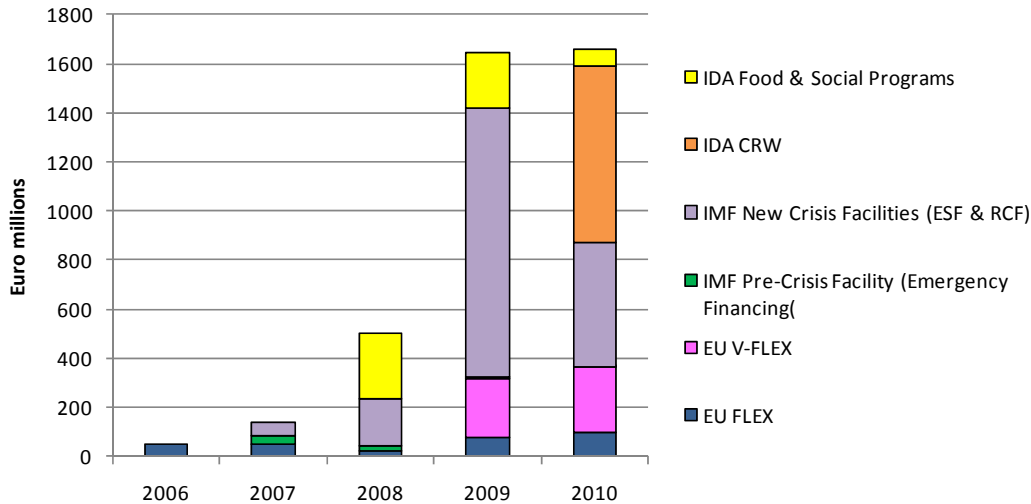
Overall, we find that developing countries are doing quite well at present in withstanding shocks. They are responding appropriately (although some better than others). Hence the main challenge in our view does not lie in the cyclical response, as policies and institutions in this area are improving. The challenge, we think, is two-fold.

First, countries need to monitor external shocks more than was the case in the past. Our case studies point to three areas where this can be useful. The Cambodia case suggests that shocks can be short term and that countries can rebound quickly, so countries should avoid introducing panic measures at each shock. The Kenya case confirms the importance of external shocks in shaping economic policies, pointing to the loss of buffers to respond to future shocks which needs to be addressed in the medium term. The Zambia case suggests that while Zambia maintained a healthy growth rate during the global financial crisis, it is far from guaranteed that this will continue if China and India are slowing down (a new type of shock). All in all, it is increasingly important to monitor global shocks and their possible effects.

The second challenge is related to the appropriate policy responses. What seems to be lacking in the country narratives and supplementary evidence is an appreciation that appropriate growth policies, and especially those that raise productivity, are probably the most efficient response at this moment when some shocks (the euro zone crisis) are taking longer to resolve than expected. A country can lose a few percentage points on incomes in a one-off shock, but this is counteracted by small long-term productivity increases. Appropriate crisis responses include the ability to become more efficient at producing. Obviously, raising productivity is a key objective irrespective of shocks, but our message is more subtle. Targeted efforts to raise productivity when it matters are crucial (e.g. Zambia needs to raise energy efficiency, given its high import bill). It emphasises the importance of an old debate: how do we know which productivity and growth measures to undertake at what point. And poor countries are still much less productive than developed countries.

5.5 How can the donor community help?

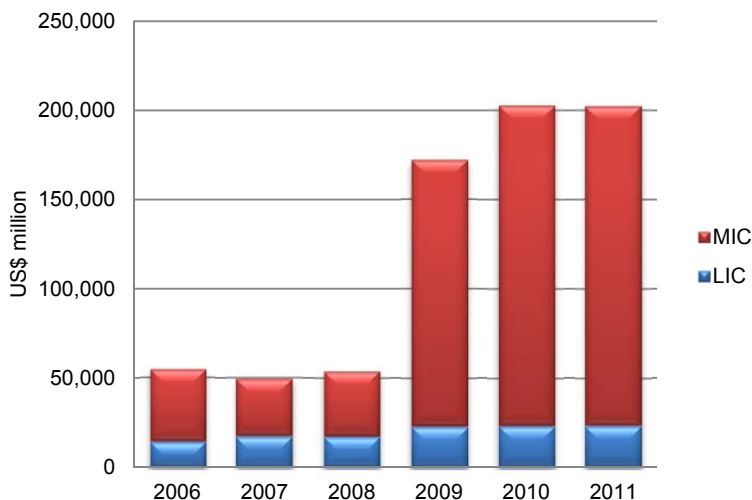
Donors can help in various ways. They need to make sure that those countries that are highly vulnerable to the current crises remain solvent and have their balance of payments deficits reduced. As shown in te Velde et al. (2011), shock facilities responded rapidly and at scale in 2009–10 to the global financial crisis that unfolded in 2008–9, see Figure 47.

Figure 47: Shock financing, by international financial institution and crisis facility, 2006–10

Note: Includes all African, Caribbean and Pacific countries.

Source: Authors' elaboration on different sources.

International financial institutions (IFIs) have responded, although the share of LICs is low (Figure 48). A key lesson in Griffith-Jones and Gottschalk (2012) and te Velde et al (2011) is to ensure that both appropriate lending facilities and sufficient resources are in place before crises and other major shocks hit, and that shock facilities can be disbursed quickly, implying low conditionality and forward looking triggers.

Figure 48: Total IFI lending to LICs/MICs, 2006–11

Note: Commitments approved by IFIs in financial year for LICs and MICs, as classified by the World Bank.

Source: Griffith-Jones and Gottschalk (2012).

Shock facilities have helped individual countries (see for example the country experiences in Table 14).

But are these actions by shock facilities under threat? The IMF has recently had to revalue its gold reserves, to help secure its ability to engage in concessional lending after 2014. But we also think that other shock facilities (beyond the IMF) in particular need to move further into enhancing targeted productivity increases as a resilience-building strategy. This could apply to the World Bank's crisis response window as well as to a revamped shock architecture at the EC. It is not yet certain how much finance will be available in the new European Development Fund over 2014–20 for shock financing. Apart from safeguarding the level of financing, there also needs to be enhanced co-ordination and coherence amongst shock facilities, as argued in te Velde et al. (2011).

In addition, the IMF and equivalent institutions could also be encouraged to improve and intensify the monitoring of the effects of external shocks on developing countries and especially LICs.

Table 14: The effects of shock absorber schemes on government spending: country examples

Country	Government spending as % of GDP	Government investment as % of GDP	Narrative provided by official documents
Benin	Relatively large shock facility payments in 2008 allowed government spending (% of GDP) to be relatively higher.	Relatively large shock facility payments in 2008 allowed government investment (% of GDP) to be relatively higher.	To mobilise additional resources aiming at covering the financing gap resulting from the fiscal response to mitigate the impact of these shocks, Benin strengthened the partnerships with development partners, including World Bank, EU, and other multilateral donors, to keep spending plans.
Burundi	Payments allowed an increase for government spending, e.g. in 2008 and 2009 allowed it to increase further and stay at high levels.	Payments in 2008 and 2009 allowed investment to increase further, whilst investment fell back in years without payments (2005, 2006).	Mitigation of the impact of higher food and oil prices on the poor by enhancing social safety nets. The budgetary impact of these policy responses (estimated at about 3% of GDP) was fully financed by donors.
Congo, Dem. Rep.	Government spending as percentage of GDP at higher level owing to higher payments in 2008 and 2009.	Investment boosted especially in 2008 and 2009.	The government envisaged a domestic fiscal deficit of 1½% of GDP; to limit the financing gap to the equivalent of ½% of GDP, which would be covered by support in 2010 from shock facilities.
Mauritius	Government consumption (as percentage of GDP) increased in 2009 when shock payments were actually disbursed.	No direct relationship between shock facilities and investment.	In 2009 Vulnerability-FLEX (the EC's new shock facility) payments aimed to maintain levels of public spending in priority areas, including in the social sectors, without jeopardising macro-economic stability.

Source: te Velde et al. (2011).

6 Conclusions

This Shockwatch Bulletin has addressed four main issues:

1. to review the global macro-economic and financial situation and outlook by assessing and comparing existing publications and secondary data;
2. to assess the degree of vulnerability of a selected sample of developing countries to the three current major global shocks (the euro zone crisis, China's and India's growth slow-down, energy price shocks);
3. to examine in detail three case studies (Cambodia, Kenya and Zambia), and report how these countries have been affected by the recent shocks and how they have responded; and
4. to synthesise findings and make suggestions for appropriate policy responses.

From the literature reviewed it emerges that the global outlook is generally pessimistic, with international organisations such as the IMF predicting a reduction in world output growth from 5.1% in 2010 to 3.3% in 2012. A rapid growth slow-down is projected in the euro area in 2012, and emerging economies are also slowing down. Indeed, according to the latest forecasts released by the IMF, China's and India's growth is projected to decline to 7.8% and 4.9% respectively from values above 10% in 2010.

The impact of the euro zone crisis and China/India slow-down on developing countries is expected to be serious. According to the IMF, growth in developing countries is projected to decline from 6.2% in 2011 to 5.3% in 2012. Net private capital flows to developing economies are expected to decline by more than 20%, from US\$ 989 billion in 2011 to US\$ 775 billion in 2012. Growth in world merchandise trade is projected to be 2.5% in 2012, less than half the 6% long-term annual average for the period 1990–2008. Remittances to developing countries could decline by 5% or more this year because of reductions in growth in developed countries such as the EU, whereas growth in aid flows is expected to remain below pre-crisis levels in 2012. The euro zone crisis and the slow-down in China and India are also exerting downward pressure on energy prices. Forecasts agree that in the short term the global slow-down will reduce energy prices. Indeed, oil prices are forecast to be at a value of US\$ 111 per barrel at the end of 2012, which is well below the peak reached during the Arab Spring. Lower energy prices will generate gains to energy importers as they will be able to purchase inputs at lower costs, but losses to energy exporters. Nevertheless, a few studies point out that some geopolitical factors, such as tensions in the Middle East, and resource scarcity may continue to exert an upward pressure on energy prices in the medium/long term.

This Bulletin also assesses the degree of vulnerability of a selected sample of LICs and LMICs to the euro zone crisis, China's and India's growth slow-down and energy price increases. In order to do this, we have looked at a series of exposure indicators (describing to what extent countries are likely to be affected by a specific shock) and resilience indicators (representing the ability of countries to cope with the different shocks). Our results show that LICs are more vulnerable than LMICs to macro-financial and energy price shocks. Indeed, 45% of the LICs analysed are highly vulnerable to macro-financial shocks versus 32% of LMICs, and 64% of LICs versus 41% of LMICs appear to be highly vulnerable to high energy price shocks. To some extent this finding confirms that the poorest countries are more vulnerable to a variety of shocks.

Eight countries (21% of all countries included in the sample) are found to be highly vulnerable to both macro-financial and energy price shocks. Three of these are in SSA (Ethiopia, Senegal and Tanzania), four in Central Asia (Armenia, Kyrgyz Republic, Moldova and Tajikistan), and one in Central America (Nicaragua). Only two countries, Indonesia and Nigeria, show low vulnerability to both energy price and macro-financial shocks. Among the countries identified as highly vulnerable, three (Ethiopia, Senegal and Tanzania) appear to be highly exposed to a China/India growth slow-down. It is also interesting to note that countries found to be vulnerable to both macro-financial and energy price shocks are also those which on average experienced the highest levels of GDP reduction during the 2008–9 global financial/energy/food crises.

The three country case studies show that the actual impacts of the euro zone crisis and China/India slow-down are becoming increasingly visible and larger, with more expected. In Zambia, exports to European markets decreased in 2011 and those to China increased but at a much lower rate. Zambia's copper exports have also increased at a slower pace in both 2011 and 2012 (in estimates) than in 2009. In 2011 and 2012 Kenya experienced declines in net capital flows as well as an almost 10% drop in the volume and value of its major exports (horticulture exports) to extra-regional markets. In Cambodia, aid flows declined by more than 50% between 2010 and 2012.

The case studies also suggest that governments in lower-income countries are working to improve their resilience against external shocks. The government of Zambia, for example, has promoted a prudent fiscal and monetary policy and supported a flexible market-determined exchange rate policy. In Kenya, the country's policy environment has improved, as shown by its 2012 World Bank Country Policies and Institutional Assessment rating of 3.8 – which is above the African average of 3.2. The government has implemented a fiscal policy to strike a balance between growth support and fiscal consolidation. Various indicators also show that the Kenyan debt is sustainable in the medium to long term. The government of Cambodia was quick in implementing a series of fiscal stimuli to tackle the 2008–9 global financial crisis.

Generally speaking, LICs are doing fairly well at present in withstanding shocks, although some better than others. Section 5 highlights reasons for greater concern about international economic shocks, but also reasons to qualify those concerns. LICs have become more open, shocks have become more frequent, and their effects weaken growth and long-term development outcomes. The links between LICs and emerging powers have increased and hence a slow-down in the latter now affects the former, which have not yet recovered fully from the effects of the 2008–9 crisis.

At the same time, there is a very significant change in growth prospects in LICs, especially those in Africa. Developing countries, including the poorest, are still growing, and faster than developed countries, and so far the impact of the crises is low although measurable although the worst is yet to come. Better policies have created more room for manoeuvre and a slightly more diversified economy (in economic and trade structures and the composition of capital flows) in this decade, and we have highlighted a number of African countries that have diversified successfully. Natural resource wealth is leading to ample financial resources, and it is now more likely than a few decades ago that LICs can use this wealth for productive purposes, although far from guaranteed. Moreover, the varied nature of shocks, with some cancelling each other out, economic structures and transmission mechanism means that different effects have very different effects in different countries. So only a few countries are highly vulnerable to all current shocks.

We finally discuss possible implications for donors wanting to help LICs withstand crises. Shock facilities worked well during the 2008–9 global economic crisis, but the volume and speed of donor responses need to be guaranteed after 2014 (by the IMF, which recently announced gold sales to finance the subsidy element of IMF loans; the EC, which still needs to define a successor for Vulnerability-FLEX; and the World Bank, where discussion on the Crisis Response Window in the International Development Association has just begun). We also argue that given the more frequent incidence of global shocks and the growing openness of LICs, it is increasingly important to monitor the effects. In many cases there is no need to panic, but in others shock facilities can help to protect essential spending with long-term productivity effects.

In light of this, we suggest that both LICs and donors continue to focus on increasing productivity, and in a targeted way so as to ensure that LICs can deal with the most recent shocks with productivity measures where they matter most.

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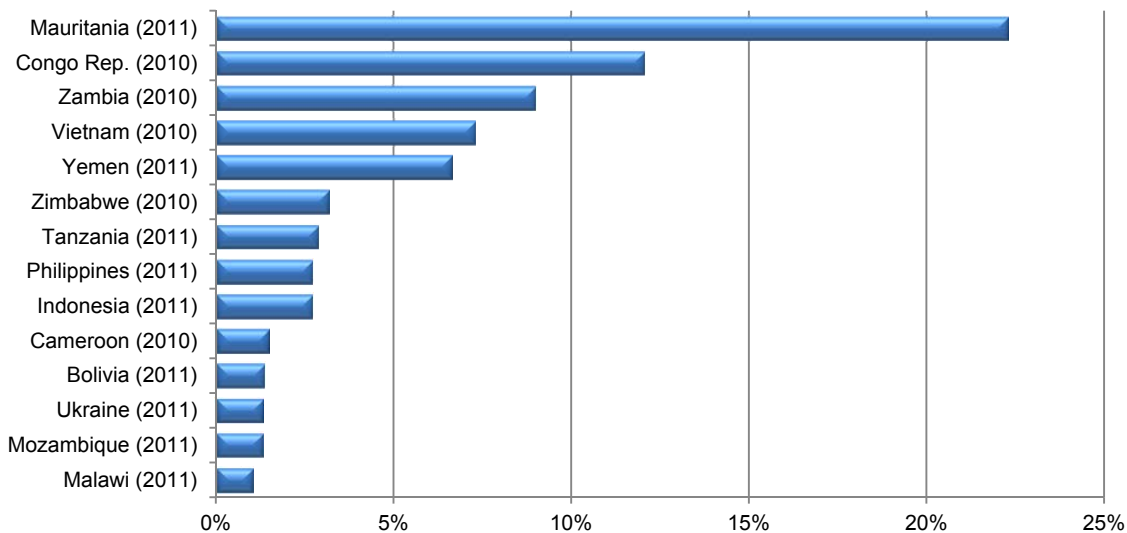
Appendix 1: Statistical appendix

Table 1: Summary of external financial flows and tax receipts in Africa, 2008–12

Flows (real US\$ billion)	2008	2009	2010	2011	2012
1. ODA, net total, all donors	45.2	47.8	47.9	48.4	48.9
2. Portfolio investments	-27	-2.1	12.2	7.7	16.2
3. FDI inward	73.4	60.2	55	54.4	53.1
4. Remittances	41.5	37.7	39.3	41.6	45
5. Tax revenues	457.3	341.3	416.3
Total External flows (1+2+3+4)	133.1	143.5	154.4	152.2	163.2
North Africa	33.5	23.7	37.5	27.6	31.6
West Africa	33.6	37.6	37.7	42.4	45.2
Central Africa	4.6	7	9.5	8.4	8.6
East Africa	24.5	25.2	23.4	26.1	26.7
Southern Africa	31.9	44.2	41.2	39.1	45.9

Source: African Development Bank (2012).

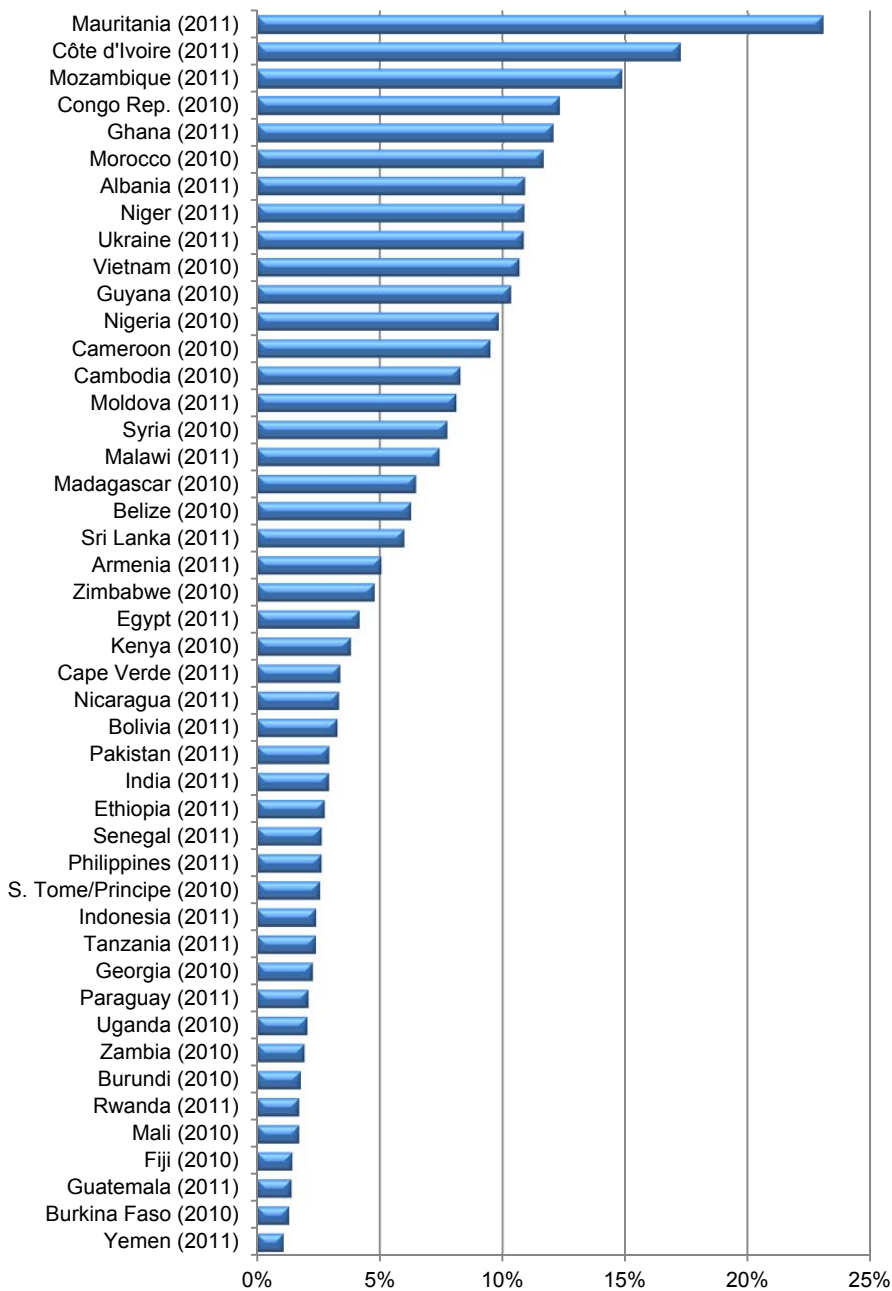
Figure 1: Value of exports to China as a share of GDP, 2010 or 2011



Note: Only LICs/LMICs (for which data are available) whose exports to China accounted for 1% or more of GDP shown.

Source: Authors' calculations on data from UN COMTRADE database (export values, for latest year available) and World dataBank, World Development Indicators dataset (GDP for same year).

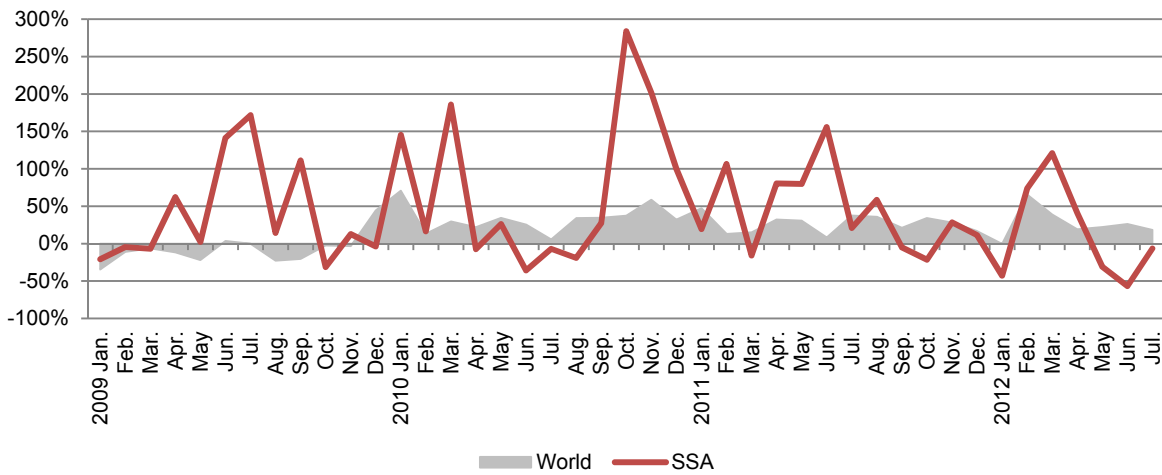
Figure 2: Value of exports to EU as a share of GDP, 2010 or 2011



Note: Only LICs/LMICs (for which data are available) whose exports to the EU accounted for 1% or more of GDP shown.

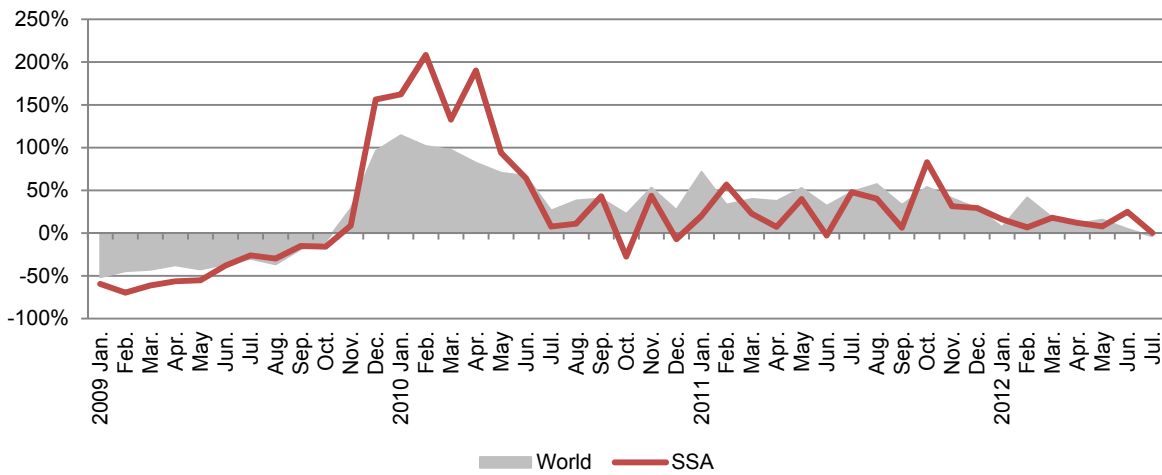
Source: Authors' calculations on data from UN COMTRADE database (export values, for latest year available) and World dataBank, World Development Indicators dataset (GDP for same year).

Figure 3: Year-on-year change in Chinese imports of agricultural products (HS chapters 1–24)



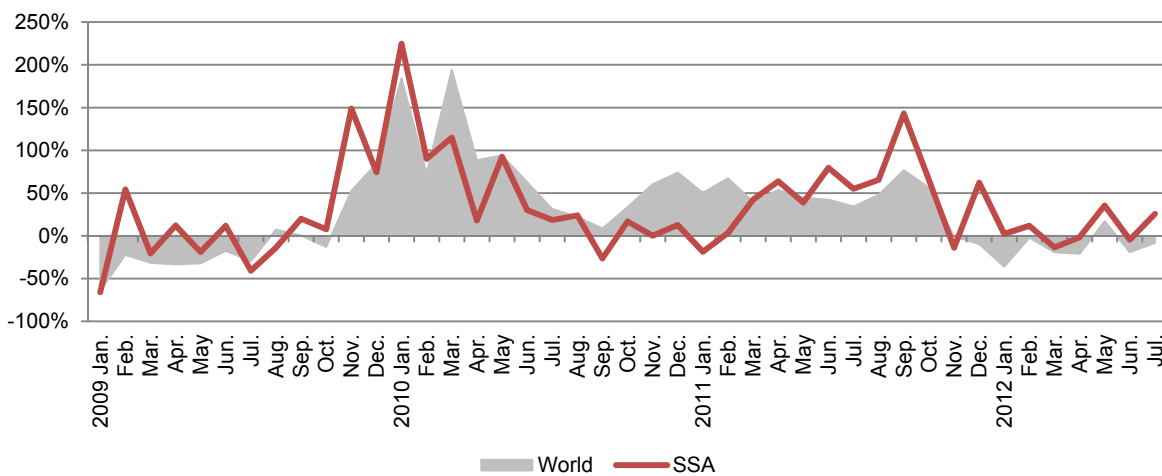
Source: Authors' calculations on data from ITC Trade Map.

Figure 4: Year-on-year change in Chinese imports of mineral products (HS chapters 25–27)



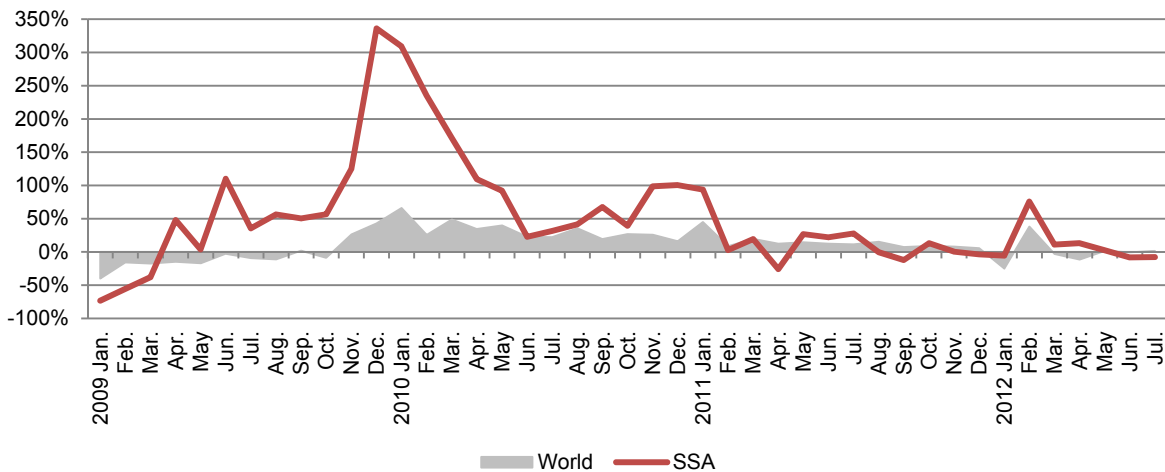
Source: Authors' calculations on data from ITC Trade Map.

Figure 5: Year-on-year change in Chinese imports of precious/semi-precious stones and metals (HS chapter 71)



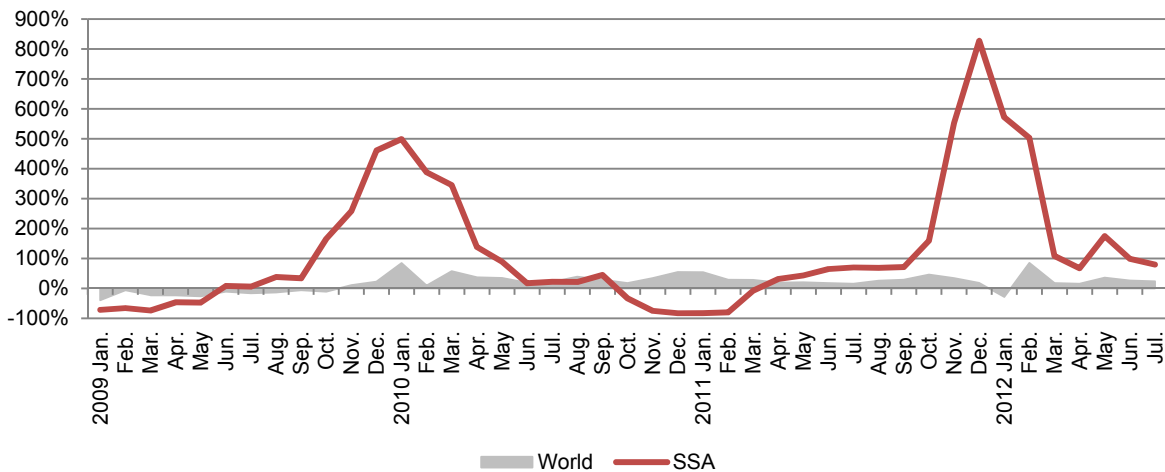
Source: Authors' calculations on data from ITC Trade Map.

Figure 6: Year-on-year change in Chinese imports of base metals and articles (HS chapters 72–82)



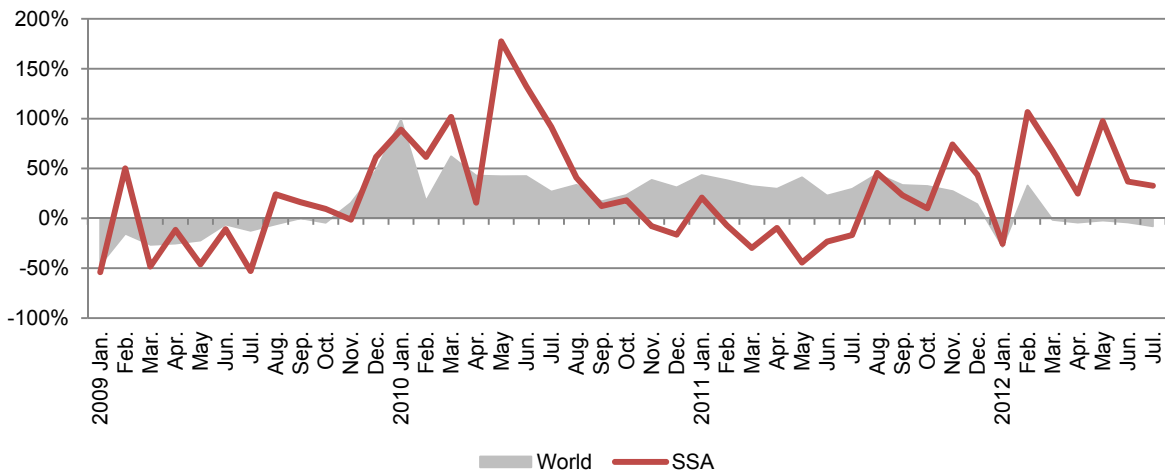
Source: Authors' calculations on data from ITC Trade Map.

Figure 7: Year-on-year change in Chinese imports of textiles and clothing (HS chapters 50–63)



Source: Authors' calculations on data from ITC Trade Map.

Figure 8: Year-on-year change in Chinese imports of wood and articles, pulp, paper etc. (HS chapters 44–49)



Source: Authors' calculations on data from ITC Trade Map.

Appendix 2: Methodology for the analysis of vulnerability to energy price shocks

As in Massa et al. (2012), we adopt exposure and resilience indicators to assess the vulnerability of the LICs and LMICs included in our sample. As an indicator of exposure, we use the net import/GDP ratio of oil, gas and coal (Bacon and Kojima, 2008).³⁴

Resilience represents the capability of a country to cope with energy price shocks. Kojima (2009) mentions many policies to achieve this: diversification strategies, hedging, assistance from energy exporters through regional agreements, strategic reserves, and subsidies.

Given data restrictions for an extensive analysis on resilience to energy price increases, we choose those indicators representing the capability of a country to diversify into non-fossil-fuel energy sources. To assess diversification we use the percentage of green sources of energy (solar, wind, geothermal, hydropower, biofuels) in total energy use (using the latest – 2009 – data available from the World Bank’s World Development Indicators) and the trend in this percentage during the period 1999–2009, expressed as the difference between the percentage in 2009 and that in 1999. The share of green energy and the improvement in the ‘greening’ of the energy mix over time represent the progress of a country in using alternative sources of energy which strengthen resilience to fossil-fuel energy price shocks.

Another important element determining a country’s resilience is its degree of dependence on the purchase of energy on the international market (World Bank, 2012b). Dependence on energy imports is expressed as a percentage of energy imports in total energy consumption³⁵ (again, using data from the World Development Indicators) and the trend in dependence over the period 1999–2009.

For each of the exposure/resilience indicators we calculate the average for the sample of 41 countries (listed in Section 3.2, Table 9). In our subsequent analysis, a country with:

- a positive net import/GDP ratio in oil, coal and gas (‘high’)
- an alternative energy share below the average (‘red’) and a percentage point increase in alternative energy share smaller than the sample average (‘negative’)
- a dependence on international imports above the average (‘dependent’) and a percentage point increase of the dependence rate above the sample average (‘negative’)³⁶

would be rated as highly vulnerable to energy price increases.

The overall degree of vulnerability of a country is established within a range 0–7, according to how it scores compared to the sample average on each of the exposure/resilience indicators. A country which scored better than average on all the indicators would have a 0 vulnerability rating; one which scored worse than average on all would have a rating of 7.

We calculate an average vulnerability rating of 4.5. Countries with a rating of 4 are included in the category ‘intermediate vulnerability’; those with a rating in the range 5–7 are included in the category ‘high vulnerability’; and those with a rating in the range 0–3 are included in the group ‘low vulnerability’.

34. This indicator is used by Bacon and Kojima (2008) for oil. For this Bulletin it is used to analyse vulnerability to oil, gas and coal prices. Bacon and Kojima describe the net imports/GDP ratio as a vulnerability indicator, but in the context of our analysis – where vulnerability is assessed on exposure and resilience – the net imports/GDP indicator is more suitable to describe exposure. Resilience to energy price shocks is captured by the capability to diversify.

35. For energy exporters the percentage of net energy imports in total energy use is negative. Negative values of energy exporters are reported in our analysis as 0, as we focus on vulnerability to high oil prices and on the capability of countries to benefit from high oil prices.

36. For countries with a negative percentage of imports in energy use (energy exporters) we do not consider the decrease of exports over the period 1999–2009 as a decrease in resilience to high oil prices.

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ISBN 978 1 907288 93 7
Working Paper (Print) ISSN 1759 2909
ODI Working Papers (Online) ISSN 1759 2917



This Working Paper has been funded by UK aid from the UK Government, however the views expressed do not necessarily reflect the UK Government's official policies.