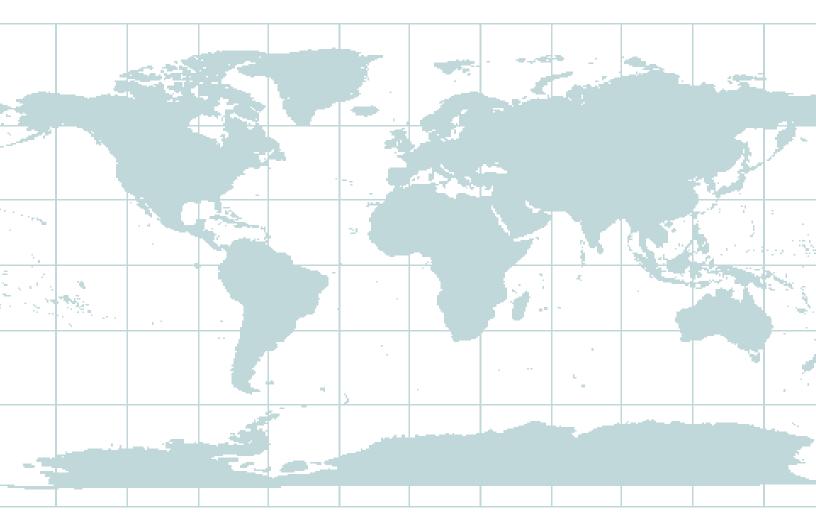
Poecember 2009

PRE-RELEASE

World Economic Situation and Prospects 2010

Global outlook





This report is a joint product of the United Nations Department of Economic and Social Affairs (DESA), the United Nations Conference on Trade and Development (UNCTAD) and the five United Nations regional commissions (Economic Commission for Africa (ECA), Economic Commission for Europe (ECE), Economic Commission for Latin America and the Caribbean (ECLAC), Economic and Social Commission for Asia and the Pacific (ESCAP) and Economic and Social Commission for Western Asia (ESCWA)).

Pre-Release

This is a pre-release of Chapter I of the World Economic Situation and Prospects 2010, issued on 2 December 2009 in New York. The full report, including regional overviews and a detailed analysis of trends in global trade and finance will be available from the second full week of January 2010

For further information, please see http://www.un.org/esa/policy or contact:

Mr. Rob Vos
Director
Development Policy and Analysis Division
Department of Economic and Social Affairs
Room DC2-2020
United Nations,
New York, NY 10017, USA
Phone: +1-212-9634838

Fax: +1-212-9631061 Email: vos@un.org

Contents

I	Global outlook						
	Macroeconomic prospects for the world economy						
	Growth prospects						
	Outlook for employment, inflation and global poverty						
	International economic conditions for developing countries and the economies in transition						
	International finance						
	International trade						
	Policy responses						
	Financial sector rescue measures						
	Monetary policy						
	Fiscal policy						
	Have the policies worked?						
	Uncertainties and risks						
	Risk of an early retreat from stimulus measures						
	Risks of widening global imbalances and dollar decline						
	Policy challenges						
	Sustainable global rebalancing						
	Strengthening policy coordination						
	Reforming the global reserve system						
	Appendix						
	Appendix tables						
	Boxes						
1	Main assumptions for the baseline forecast						
2	Prospects for the least developed countries						
	Figures						
1	World economic growth, 2004–2010						
2	Daily yield spreads on emerging market bonds, January 2005–October 2009						
3	Bank lending to the private sector in emerging markets, December 2007–June 2009						
4	Index of world trade volume and industrial production, January 2007–August 2009						
5	Gross domestic product growth under the Global Policy Model scenario simulations, 2005–2015						
. 6	Current-account balances, 2004–2010						
. 7	Net international investment position of the United States, 1976–2009						
. 8	Exchange-rate indices for the United States, January 2002–October 2009						

Tables

l. 1	Growth of world output 2004-2010	4
l. 2	Frequency of high and low growth of per capita output 2007-2010	6
l. 3	Estimated impact of the crisis on extreme poverty, 2009	11
l. 4	Fiscal stimulus to address the global financial and economic crisis	20

Chapter I Global Outlook

Macroeconomic prospects for the world economy

The world economic situation has been improving since the second quarter of 2009. Global equity markets have rebounded and risk premiums on lending have fallen. International trade and global industrial production have also been recovering noticeably, with an increasing number of countries registering positive quarterly growth of gross domestic product (GDP). The economic revival has been driven in no small part by the effects of the massive policy stimuli injected worldwide since late 2008. It also reflects strong cyclical inventory adjustment.

This is an important turnaround after the free fall in world trade, industrial production, asset prices and global credit availability which threatened to push the global economy into the abyss of a new great depression in early 2009. Yet, the recovery is uneven and conditions for sustained growth remain fragile. Credit conditions are still tight in major developed economies, where many major financial institutions need to continue the process of deleveraging and cleansing their balance sheets. The rebound in domestic demand remains tentative at best in many economies and is far from self-sustaining. High unemployment rates and the large output gap in most countries, along with a number of other factors, such as the possibility of a further spread of pandemic influenza A (H1N1) that could hurt economic activity, continue to pose challenges for policymakers worldwide. In addition, the global macroeconomic imbalances, which were part of the problem in the first instance, could widen again to form a source of renewed financial instability.

In the outlook, global economic recovery is expected to remain sluggish, unemployment rates will stay high and inflation will remain low. Developing countries, especially those in Asia, are expected to show the strongest recovery in 2010. Nonetheless, growth is expected to remain well below potential and the pre-crisis levels of performance in the developing world. As a consequence, it will take more time and greater efforts to make up for the significant setbacks in the progress towards poverty reduction and the fight against hunger, as well as the other Millennium Development Goals (MDGs). The crisis has impacted severely on low-income countries and the most vulnerable. Even given the signs of economic recovery, many are still facing declines in household incomes, rising unemployment, and the effects of dwindling government revenue on social services. Where these adverse impacts cannot be countered because of weak social safety nets and lack of fiscal space to protect social spending and promote job creation, there is a high risk of long-lasting setbacks in human development.

While necessary, the fiscal and monetary stimulus policies undertaken to counteract the crisis have at the same time become a source of concern. Some Governments fear that the rapid build-up of public debt could affect economic growth in the longer run and are calling for an exit of the policy stimuli. However, as global demand is still weak, a premature withdrawal of those measures could abort the incipient recovery. Going forward, the most pressing policy challenges over the near term include maintaining the momentum of economic recovery through economic stimulus measures and rebalancing

The global economy is recovering with the support of massive fiscal stimuli ...

... but the recovery is uneven and conditions for sustained growth remain fragile

In 2010, global growth will remain below potential and unemployment will stay high

The most pressing policy challenges include maintaining the momentum towards recovery and rebalancing global growth

global growth towards a more sustainable path so as to avoid a re-emergence of the global imbalances, while, at the same time, facilitating high growth, especially for developing countries, and addressing the climate change challenge. Achieving all this may require even farther-reaching and unprecedented internationally concerted actions than those that have already been undertaken by the international community since October 2008.

Growth prospects

Mild growth is forecast for 2010

The rebound was built around three factors

Japan and developing Asia are leading the rebound

Consumer and investment demand in developed economies remain subdued

After a sharp and synchronized global downturn—indeed the only contraction since the Second World War—the world economy is improving. An increasing number of economies showed positive growth in the second quarter of 2009, and momentum towards recovery continued to build in the third quarter. Nonetheless, because of the steep downturn at the beginning of the year, world gross product (WGP) is estimated to fall by 2.2 per cent for 2009. Premised on the assumption of a continued supportive policy stance worldwide (box I.1), a mild growth of 2.4 per cent is forecast in the baseline scenario for 2010 (table I.1 and figure I.1). According to this scenario, the level of world economic activity will be 7 per cent below where it might have been had pre-crisis growth continued.

In most countries, the economic rebound has been built around three factors in particular. The first of these consists of the massive, and to some extent concerted, policy actions taken by the major economies, which effectively arrested a further erosion of confidence worldwide (for further discussion, see the section on policy responses below). The second relates to a change in the global inventory cycle. The early stages of the recession were characterized by panic-driven shedding of inventories accompanied by cutbacks in industrial production. Following some stabilization of financial markets and improvement in consumer and business confidence, companies started to resume production and restock inventories. This explains much of the rebound in global trade and industrial production. The third factor relates to the international repercussion effects of the first two.

Consistent with this pattern, the strongest declines in export volumes and industrial production indices were seen among major manufacturing exporters, especially those in Asia. Following the turn in the inventory cycle, Japan and developing Asia are also leading the rebound in trade and production. The recovery in industrial production, in turn, has allowed for renewed growth in the demand for primary commodities and a rebound in world commodity prices. However, the pace of recovery is still rather uneven across countries. Furthermore, in so far as it is not also based on a resumption of growth in private investment and consumption, recovery may not be lasting.

In developed economies, consumer and investment demand remain subdued as a result of the continued rise in unemployment rates, the wealth losses incurred during the crisis and the desire of households and firms to rebuild balance sheets. Domestic demand is further constrained by continued tightness in credit supplies, despite more stable conditions in financial markets. Another important factor is that the impetus from the stimulus measures and the turn in the inventory cycle are expected to diminish over time. The economy of the United States of America is expected to grow by 2.1 per cent in 2010, following an estimated downturn of 2.5 per cent in 2009. Recovery in both the European Union (EU) and Japan is projected to be much weaker, reaching GDP growth of no more than 0.5 and 0.9 per cent, respectively, in 2010. At this pace of recovery, the major developed economies are not expected to provide a strong impetus to global growth in the near term.

Box I.1

Main assumptions for the baseline forecast

The forecast presented in the text is based on the United Nations Global Forecasting Framework (GFF) in conjunction with Project LINK, a network of institutions and researchers supported by the Department of Economic and Social Affairs of the United Nations. It is informed by provisional individual country forecasts submitted by country experts, which are adjusted based on harmonized global assumptions and the imposition of global consistency rules (especially those of trade flows, by both volume and value) provided by the GFF. The main global assumptions are discussed below. The baseline forecast does not include any specific assumption about the international coordination of macroeconomic policies. It is also assumed that except for these assumptions there are no other exogenous shocks to the global economy. For alternative scenarios to the baseline, see the sections in the main text on risks and uncertainties and on policy challenges.

Monetary policy

Given the complex structure of the monetary policy measures adopted by major economies during the global recession, the assumptions regarding policy interest rates are indicative only of the nature of the policy stance in the outlook. The United States Federal Reserve (Fed) is assumed to hold its main policy interest rate, the federal funds rate, at its current range of 0.0-0.25 per cent until the end of the third quarter of 2010, after which it embarks upon a slow process of policy normalization, with an increase of 50 basis points during the last quarter. The European Central Bank (ECB) is also assumed to hold its main policy rate, the interest rate on its main refinancing operations, at the current level of 1.00 per cent through the third quarter of 2010, and then raise it by 50 basis points in the fourth quarter. The Bank of Japan (BOJ) is assumed to hold its policy rate, the target Uncollateralized Overnight Call Rate, at its current 0.10 per cent until the end of 2010.

During the forecast period, the central banks in the major economies will continue to rely on adjusting the unconventional measures that are already in place to manage liquidity in their economies, and it is assumed they will initiate a gradual withdrawal of some of these measures in the second half of 2010 (see chapter IV for details at the country level).

Fiscal policy

Fiscal assumptions are made at the country level by the LINK country experts, but they typically reflect currently announced packages and are assumed to be fully implemented. In the current situation, automatic stabilizers are assumed to operate unconstrained, except in those countries experiencing severe financial distress (see chapter IV for details at the country level).

Exchange-rate movements

The United States dollar appreciated against the euro to about \$1.25 in the first quarter of 2009, but has since depreciated significantly, averaging \$1.43 per euro in the third quarter and hovering around \$1.48 or higher since late September. The dollar also saw a rebound against the Japanese yen in the first quarter of 2009, but has similarly lost ground since. It averaged ¥94 per dollar in the third quarter and was close to ¥91 in September 2009. In the outlook, it is assumed that the dollar, while experiencing significant volatility, will stay in a trading range centred at \$1.44 against the euro and close to ¥90 per dollar through 2010.

Oil and other commodity prices

Brent oil prices are expected to average about \$61 per barrel in 2009 and to rise on average to \$72 for the year 2010, for reasons explained in chapter II. For non-oil commodity prices, detailed assumptions at the individual commodity level are made for a large group of commodities, based on individual market conditions and reflecting other global assumptions. The weighted dollar price index of these non-oil commodities is estimated to have fallen by 18.4 per cent in 2009 and is assumed to increase by a further 4.6 per cent in 2010.

Table I.1 Growth of world output, 2004–2010

									om United forecast of 2009 c
	2004	2005	2006	2007	2008	2009a	2010 b	2009	2010
World output ^d	4.0	3.5	4.0	3.9	1.9	-2.2	2.4	0.4	0.8
of which:									
Developed economies	3.0	2.5	2.8	2.6	0.5	-3.5	1.3	0.4	0.7
Euro zone	2.2	1.7	3.0	2.7	0.7	-4.1	0.4	-0.4	0.5
Japan	2.7	1.9	2.0	2.3	-0.7	-5.6	0.9	1.5	-0.6
United Kingdom	3.0	2.2	2.9	2.6	0.6	-4.5	0.6	-0.8	0.8
United States	3.6	3.1	2.7	2.1	0.4	-2.5	2.1	1.0	1.1
Economies in transition	7.7	6.5	8.0	8.4	5.5	-6.5	1.6	-0.6	0.2
Russian Federation	7.2	6.4	7.7	8.1	5.6	-7.0	1.5	-0.2	0.0
Developing economies	7.3	6.7	7.3	7.6	5.4	1.9	5.3	0.5	1.0
Africa	6.5	5.9	5.9	6.0	4.9	1.6	4.3	0.7	0.3
Nigeria	10.6	5.4	6.2	7.0	6.0	1.9	5.0	2.4	0.3
South Africa	4.9	5.0	5.3	5.1	3.1	-2.2	3.1	-0.4	0.0
East and South Asia	7.8	7.7	8.6	9.3	6.3	4.3	6.4	1.1	0.8
China	10.1	10.4	11.6	13.0	9.0	8.1	8.8	0.5	0.6
India	8.3	9.3	9.7	9.1	7.3	5.9	6.5	0.9	0.2
Western Asia	8.7	6.9	6.1	5.0	4.6	-1.0	3.6	-0.3	0.7
Israel	5.0	5.1	5.2	5.4	4.1	0.1	2.0	1.0	1.2
Turkey	9.4	8.4	6.9	4.5	1.1	-4.9	2.2	-0.4	1.0
Latin America and the Caribbean	5.8	4.6	5.5	5.6	4.1	-2.1	3.4	-0.2	1.7
Brazil	5.7	3.2	4.0	5.7	5.2	0.0	4.5	0.6	2.0
Mexico	4.0	3.2	4.8	3.2	1.3	-7.1	3.0	-2.3	1.8
of which:									
Least developed countries	8.2	7.8	7.9	8.5	7.2	3.3	5.3	0.6	0.7
Memorandun items:									
World trade	11.0	7.8	9.3	6.7	2.9	-12.5	5.4	-1.4	1.8
World output growth with PPP- based weights	4.9	4.4	5.0	5.0	3.0	-1.0	3.2	0.0	0.5

Source: UN/DESA.

- a Partly estimated.
- **b** Forecasts, based in part on Project LINK.
- c See World Economic Situation and Prospects: Update as of mid-2009, available at http://www.un.org/esa/policy/wess/wesp2009files/wesp09update.pdf.
- **d** Calculated as a weighted average of individual country growth rates of gross domestic product (GDP), where weights are based on GDP in 2005 prices and exchange rates.

A stronger recovery is expected in the developing countries

Output growth in the developing countries, in contrast, is expected to recover at a faster pace and to reach 5.3 per cent in 2010, up from 1.9 per cent in 2009, but will remain well below the pre-crisis pace of more than 7 per cent per annum. Some developing economies have rebounded earlier than other countries. Fiscal stimulus and resumption of trade in manufactures lifted economies in Asia, in particular. Economies in transition are

Global Outlook

5

expected to see a significant turnaround from the decline of their combined GDP by 6.5 per cent in 2009. Growth in 2010 is projected to be positive but, at 1.6 per cent, signals a very weak recovery at best.





Indicates the confidence interval at two standard deviations from historical forecast errors.

Source: UN/DESA.

- a Partly estimated.
- **b** United Nations forecast.

Conditions for international trade and finance will remain challenging

Output growth in most developing countries and economies in transition remains strongly dependent upon movements in international trade, commodity prices and capital flows. Conditions in this regard have improved as part of the global recovery, but a further rebound will be strongly dependent upon the strength of the recovery in the developed countries. In the outlook, conditions for international trade and finance will remain challenging. This will affect the low-income countries in particular: while country-specific conditions differ markedly, the global crisis has undermined investments and, hence, the growth potential of their economies. Many of the least developed countries (LDCs) are expected to see a much slower economic performance in the years ahead compared with the robust growth they witnessed in the years before the crisis (box I.2).

Despite some rebound in the second half of 2009, most countries incurred welfare losses measured for the year as a whole. Of 160 countries for which data are available, 107 countries registered a decline in per capita income during 2009. These include most developed and about 60 developing countries (table I.2). In 2010, the number of developing countries with negative per capita income growth is expected to drop to 10, but at the same time only 21 developing countries are expected to achieve growth rates of 3 per cent or more (which is sometimes deemed to be the minimum rate needed to ensure substantial poverty reduction). In 2007, there were 68 developing countries with welfare increases above that threshold. In sub-Saharan Africa, this number has dropped from 23 in 2007 to 5 in 2009, and in 2010 no more than 7 countries in the region are expected to see per capita growth of more than 3 per cent.

Table I.2 Frequency of high and low growth of per capita output, 2007–2010

	Number of countries monitored	Decline in GDP per capita			Growth of GDP per capita exceeding 3 per cent				
		2007	2008	2009 a	2010 b	2007	2008	2009 a	2010 b
		Number of countries							
World	160	11	30	107	25	106	75	14	24
of which:									
Developed economies	35	0	15	34	15	20	6	0	0
Economies in transition	18	0	0	13	0	18	16	2	3
Developing countries	107	11	15	60	10	68	53	12	21
of which:									
Africa	51	9	9	23	7	27	22	6	8
East Asia	13	1	3	8	1	12	5	3	5
South Asia	6	0	0	1	0	5	5	2	3
Western Asia	13	1	1	9	0	7	8	1	2
Latin America and the Caribbean	24	0	2	19	2	17	13	0	3
Memorandum items:									
Commonwealth of Independent States	12	0	0	8	0	12	11	2	3
Least developed countries	39	6	7	17	6	20	17	4	6
Sub-Saharan Africa c	44	9	9	20	7	23	18	5	7
Landlocked developing countries	25	3	2	9	0	15	15	5	6
Small island developing States	17	1	4	10	2	12	9	0	0
	Share d	Percentage of world population							
Developed economies	15.3	0.0	10.3	14.8	2.7	2.6	1.2	0.0	0.0
Economies in transition	4.7	0.0	0.0	3.9	0.0	4.7	4.4	0.5	0.6
Developing countries	80.0	1.6	3.0	21.9	1.3	72.1	63.6	47.1	53.0
of which:									
Africa	14.3	1.2	1.3	6.5	0.6	10.6	8.2	2.1	2.8
East Asia	29.9	0.0	0.4	4.0	0.0	29.9	26.2	25.1	26.2
South Asia	24.3	0.0	0.0	1.2	0.0	24.6	24.3	21.1	21.7
Western Asia	3.0	0.4	1.1	2.4	0.0	1.5	0.8	0.1	0.5
Latin America and the Caribbean	8.5	0.0	0.2	8.0	0.6	6.3	5.2	0.0	3.4
Memorandum items:									
Commonwealth of Independent States	4.3	0.0	0.0	3.6	0.0	4.3	4.1	0.5	0.6
Least developed countries	11.1	0.6	0.7	3.0	0.6	8.4	7.7	3.8	4.9
Sub-Saharan Africa c	8.9	1.2	1.3	3.4	0.6	6.3	5.3	1.6	2.7
Landlocked developing countries	5.1	0.6	0.3	0.9	0.0	3.4	3.7	2.1	2.4
Small island developing States	0.8	0.0	0.3	0.3	0.0	0.6	0.5	0.0	0.0

 $\textbf{Source:} \ \mathsf{UN/DESA}, including \ \mathsf{population} \ \mathsf{estimates} \ \mathsf{and} \ \mathsf{projections} \ \mathsf{from} \ \mathit{WorldPopulationProspects:} \ \mathit{The 2008 Revision}.$

- **a** Partly estimated.
- **b** Forecast, based in part on Project LINK.
- c Excluding Nigeria and South Africa.
- **d** Percentage of world population for 2005.

Global Outlook

Box I.2

Prospects for the least developed countries^a

Most economies in the group of the least developed countries (LDCs) experienced a marked slowdown in 2009 as a result of the global financial and economic crisis. Weighted average growth for the LDCs is estimated to be 3.3 per cent in 2009, following five consecutive years of growth above 7 per cent. For the same period, 17 LDCs registered a decline in per capita gross domestic product (GDP) and only 4 recorded a growth of 3 per cent or higher in per capita GDP, the minimum rate for achieving a meaningful reduction in poverty.

While the financial sectors in the LDCs were not directly affected by the global financial turmoil, most economies suffered from lower export demand and reduced foreign direct investment inflows. As illustrated in the figure below, oil- and mineral-exporting LDCs registered the sharpest economic downturn in 2009 as they suffered a double blow from worsening terms of trade and falling trade volumes. For instance, growth in Angola and Equatorial Guinea declined from an average of more than 16 per cent during 2004-2008 to 0.2 per cent and -3.4 per cent, respectively in 2009. In comparison, countries specialized in agricultural exports faced a less severe slowdown, with Liberia, Malawi and Uganda registering above-average growth.

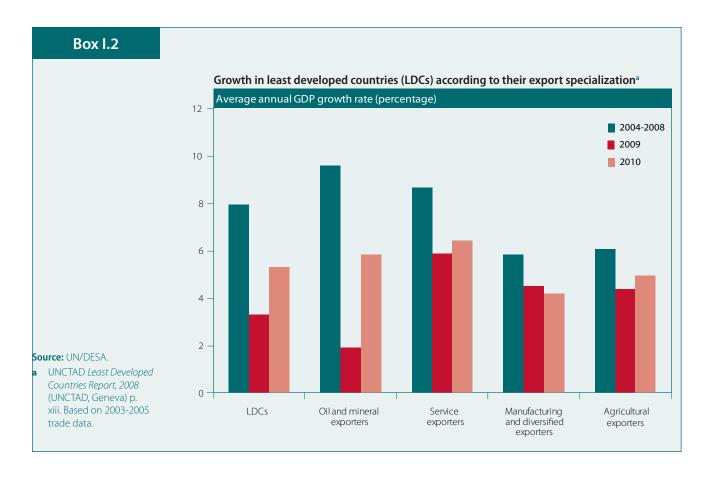
Several LDCs in East and Southern Africa continued to be among the best performers in 2009, partly owing to successful macroeconomic reforms, improved governance and increased public expenditures, especially on infrastructure. The good macroeconomic performance contrasts with persistent food insecurity. Prolonged droughts have led to severe food shortages and widespread hunger in the countries in the Horn of Africa and East Africa. By contrast, most poor-performing countries, such as Haiti, Madagascar and Somalia, continued to experience political instability and fragile security conditions.

Despite the worsening external economic environment in general, a continued strong inflow of workers' remittances helped some LDCs sustain domestic demand, for example, in Bangladesh (the most populous country in the group), Nepal and Rwanda. In Bangladesh, remittances offset a significant decline in total aid disbursements, which fell by more than 40 per cent during the first eights months of 2009 compared with the same period a year earlier. Preliminary data suggest that official development assistance (ODA) flows to African LDCs may have increased moderately in 2009. However, there are concerns that flows may be lower in the coming years as many donor countries may curtail their aid budgets as a consequence of the crisis.

As food and oil prices dropped sharply in the second half of 2008, inflationary pressures in the LDCs began to abate. Average inflation in the LDCs declined from 3.5 per cent in 2008 to 8.8 per cent in 2009, and is forecast at 8.1 per cent in 2010. Food price inflation, however, remained elevated in many countries as lower international prices were only partially passed through to local markets and weak harvests constrained domestic supply, particularly in East Africa. Moreover, several Governments have phased out food subsidies that had been introduced to cushion the effects of escalating international prices.

In the outlook for 2010, average growth in the LDCs is expected to recover, but to remain considerably below the levels achieved in the years prior to the crisis. Driven by a rebound in oil and mineral exports, the group is forecast to grow by 5.3 per cent in 2010. Yet, the uncertainties regarding the strength of the recovery in developed and major developing economies pose significant downside risks for the LDCs. Continued slow growth in LDCs may aggravate the already deteriorating fiscal balances and the rising public debt. In addition, infrastructural deficiencies, low levels of human capital, political instability and domestic conflict continue to hamper economic development. Furthermore, natural disasters, unpredictable weather conditions and the effects of climate change continue to pose severe threats to most LDCs. Although several post-conflict African countries, such as Angola and Liberia, have benefited from improved political stability and security in recent years, drug trafficking in West Africa constitutes an increasing menace to governance, capacity-building and promotion of the rule of law.

While the group of least developed countries (LDCs) includes 49 economies, this box covers only the 39 members for which macroeconomic data are available. For a more detailed definition of the LDCs, see http://www.un.org/esa/policy/devplan/profile/index. html.



Outlook for employment, inflation and global poverty

Unemployment rates are continuing to rise

The continued weakness of the world economy is manifest in the continued increase in unemployment. Through the end of 2009, the recovery will have been "jobless". Unemployment rates are expected to continue to rise well into 2010.

The number of unemployed has more than doubled in the United States since the beginning of the recession in December 2007. Those out of work totalled 15.7 million in October 2009, bringing the unemployment rate to 10.2 per cent, the highest in 26 years. The unemployment rates in the euro area are also estimated to have increased by more than 2 percentage points in 2009, with the largest increase in Ireland and Spain, by 12.5 and 9.5 percentage points, respectively. These figures would be even higher if they were to include discouraged workers, who are unemployed but not currently looking for work because they believe no jobs are available for them.

Unemployment rates in transition economies and developing countries have also moved higher, in particular in the Commonwealth of Independent States (CIS) and Central and South-eastern Europe, where the number of unemployed increased by as much as 35 per cent in 2009.

In developing countries, while most job losses are in the export sectors, the greater concern lies in the stark increase in vulnerable employment and working poverty. In East and South Asia, vulnerable employment affects about 70 per cent of the workforce

Developing countries are seeing increases in vulnerable employment and working poverty

Vulnerable employment as defined by the International Labour Office refers to own-account workers and contributing family workers who, in developing countries, are less likely to have formal work arrangements.

and the scarce timely data suggest that this share has increased significantly. According to the International Labour Organization (ILO), informal employment has increased significantly in Indonesia and Thailand, for instance.² In Indonesia, the number of casual workers in non-agricultural sectors increased by about 7.3 per cent between February 2008 and February 2009, more than five times the rate of growth of formal sector wage earners. In Thailand, first quarter 2009 figures indicate that wage employment was stagnant, while the number of informal sector self-employed and family workers increased by 3.2 per cent. This suggests a significant increase in the number of workers with poor-quality jobs.

In sub-Saharan Africa, an important share of the region's labour force is engaged in subsistence agriculture and other low-productivity economic activities. The share of working poor (that is to say, those earning less than \$1.25 per day in purchasing power parity (PPP)) is expected to increase to about 64 per cent in 2009, up from 59 per cent in 2007. In Latin America and the Caribbean, the rate of unemployment increased on average to 8.5 per cent in the first quarter of 2009 compared to 7.9 per cent in the first quarter of 2008, implying that over one million more workers could not find a job.

The impact of the financial crisis on labour conditions is expected to aggravate social gaps in employment opportunities, in particular for women, who are more often involved in temporary employment and jobs in export-oriented manufacturing industries in developing countries. Worldwide, unemployment among youth (those aged between 16 and 24 years) is expected to increase from a rate of 12.2 per cent in 2008 to about 14 per cent in 2009 on average. The rate of youth unemployment in the EU has increased by 4 percentage points in the past year, reaching 19.7 per cent, and in the United States it went up by 5 percentage points, reaching 18 per cent in 2009. In developed and developing countries alike, an increasing number of new college graduates continue to face enormous difficulties in finding a job.

Labour markets will remain weak in the outlook. The experience of previous recessions shows that employment recovery typically lags output growth by a significant margin. During the last two recessions in the United States (in 1991 and 2001), for instance, output started to recover after eight months, while it took 30 and 48 months, respectively, before unemployment rates were back to pre-crisis levels. Recovery from the present crisis has only just begun and large output gaps remain characteristic of the situation in most major economies. This will slow new hiring until output growth has become more robust. In the countries of the euro zone, the drop in average hours worked has been faster than the increase in the number of unemployed, as—with government support—many workers have been allowed to keep their jobs while being forced into part-time employment. Firms are more likely to increase the working hours of current workers than to hire new ones.

Labour market conditions in developing countries are expected to remain difficult in the outlook for three main reasons. First, most of the 47 million new workers who enter labour markets worldwide each year will be searching for jobs in developing countries. In Asia alone, for instance, an estimated 51 million additional jobs will need to be created to absorb that region's growing labour force during 2010 and 2011.

Second, as in developed countries, employment creation in developing countries is expected to lag output recovery. Following the Asian financial crisis of 1997-1998,

Social gaps in employment opportunities are widening

Labour markets will remain weak in 2010

See International Labour Office, "Protecting people, promoting jobs. A survey of country employment and social protection policy responses to the global economic crisis", Report to the G20 Leaders Summit, Pittsburgh, 24-25 September 2009, available at https://webdev.ilo.org/public/libdoc/jobcrisis/download/protecting_people_promoting_jobs.pdf.

for instance, employment growth significantly lagged output growth by three years. However, the fiscal stimulus packages implemented by some developing countries could limit the retardation effect somewhat this time around. In several Asian countries, new public spending on infrastructure is creating a substantial amount of new jobs in the construction sector.³ Nonetheless, during the present crisis, most jobs in developing Asia were shed in export-oriented manufacturing sectors where the rehiring of workers is expected to remain slow as long as the recovery is driven mainly by the turn in the inventory cycle.

Third, the shift to informal sector jobs during the crisis will likely be long-lasting for many workers. This adds considerable pressure on earnings for those in vulnerable employment and will keep the level of working poverty high, especially in rural areas where job opportunities are already scarce. In addition, on top of vulnerable employment, as social protection coverage is relatively limited, working poverty levels will increase. This will be difficult to reverse, as observed in previous crises.

Worldwide, inflation rates have fallen. The majority of countries have experienced significantly lower inflation rates (disinflation) in 2009, while a growing number of economies, mainly developed countries and a few emerging economies in Asia, actually experienced deflation as general price indices fell. The continued increase in unemployment rates and large output gaps suggest that inflation is likely to remain low in the outlook despite continued expansionary monetary policies, as aggregate demand is expected to fall short of output capacity for some time to come. For most economies, cost-push pressures are likely to remain mild. With only a moderate recovery in global demand, further increases in the prices of primary commodities are expected to be limited (see below, and also chapter II), while high unemployment rates and continued efforts by the business sector to curb costs will keep wage pressures down. Deflation, rather than inflation, should be a policy priority for many countries in the near term. Inflationary pressures as a consequence of ballooning government deficits and the ample liquidity injected during the crisis, if they emerge, will be more of an issue in the medium run, after the recovery has become more solid, and should not be of immediate concern.

The reduction in employment and income opportunities has led to a considerable slowdown in the progress towards poverty reduction and the fight against hunger. Estimates by the Department of Economic and Social Affairs of the United Nations (UN/DESA) suggest that, in 2009, between 47 and 84 million more people have remained poor or will have fallen into poverty in developing countries and economies in transition than would have been the case had pre-crisis growth continued its course (table I.3).4 This setback was felt predominantly in East and South Asia, where between 29 and 63 million people were likely affected, of whom about two thirds were in India. By these estimates, the crisis has trapped about 15 million more people in extreme poverty in Africa and almost 4 million in Latin America and the Caribbean. In the outlook for 2010, the economic recovery is expected to encourage a resumption of the declining trend in global poverty in the years prior to the crisis. Nonetheless, as growth in income per capita is expected to fall well short of pre-crisis levels, poverty reduction will still be significantly less than it would have been under pre-crisis trends.

- In Malaysia, for instance, public projects constitute the bulk of the stimulus package's spending, and they will include low-cost home building and upgrading of urban transportation. China is spending over 86 per cent of its package on investments in infrastructure, low-rent houses, public transportation, power grids and water supply. India, Indonesia and the Republic of Korea have also allocated sizeable amounts of their packages to labour-intensive infrastructure projects.
- It should be noted that the estimates presented here take into consideration the impact of the downturn only on growth in income per capita compared with continued pre-crisis trends. Hence, these should be interpreted in the first instance as a slowdown in poverty reduction owing to a drop in the mean per capita income of developing countries. For lack of additional information, the estimates do not take into account likely changes in income distribution.

Inflationary pressures are expected to remain low throughout 2010

Progress towards poverty reduction has slowed considerably

Global Outlook

Table I.3
Estimated impact of the crisis on extreme poverty, 2009a

	Change in extreme poverty (living below \$1.25 a day)						
	Number (millio	•	Change in poverty incidence (percentage)				
	2009 vs. 2004-7	2009 vs. 2008	2009 vs. 2004-7	2009 vs. 2008			
Economies in transition	1.0	1.0	0.3	0.3			
South-eastern Europe	0.0	0.0	0.0	0.1			
Commonwealth of Independent States	0.9	1.0	0.3	0.4			
Developing economies	83.7	46.7	1.5	0.9			
Africa	15.2	13.6	1.5	1.3			
North Africa	0.2	-0.3	0.1	-0.2			
Sub-Saharan Africa	15.0	13.9	1.8	1.7			
East and South Asia	63.1	28.5	1.7	0.8			
East Asia	22.8	9.1	1.2	0.5			
South Asia	40.3	19.4	2.4	1.2			
Western Asia	1.9	1.3	0.9	0.6			
Latin America and the Caribbean	3.6	3.3	0.6	0.6			
South America	2.6	2.5	0.7	0.6			
Mexico and Central America	1.0	0.8	0.6	0.5			
Caribbean	0.0	0.0	0.1	0.1			

Source: UN/DESA, based on per capita GDP growth estimates and forecasts of the *World Economic Situation and Prospects 2010* and recent household survey data for 69 countries drawn from the World Bank's PovCalNet.

Note: The estimates are an update and revision of previous estimates published in the *World Economic Situation and Prospects: Update as of mid-2009*, available at http://www.un.org/esa/policy/wess/wesp2009files/wesp09update. pdf. The updated estimates show a smaller impact on poverty, caused by two main factors. First, new population projections were used, generally showing lower population estimates and growth rates, and, second, GDP growth figures for 2009 were revised upwards for some countries with large populations (for example, India).

a Estimates represent the shortfall in poverty reduction caused by the drop in per capita income growth in 2009 compared with the average growth in 2004-2007 and 2008, respectively. The poverty threshold is the international poverty line of \$1.25 per person per day at purchasing power parity dollars. For the calculations, it was assumed that income distribution stays constant in all country cases.

International economic conditions for developing countries and the economies in transition

Following a sharp deterioration in late 2008 and early 2009, the international economic environment for developing countries and the economies in transition has been stabilizing and improving, but it remains daunting in the outlook. Certain categories of private capital flows are returning to some emerging economies, and external financing costs are normalizing, but the general external financing conditions for developing countries are expected to remain tight in 2010. Both global trade flows and world market prices of primary commodities rebounded during 2009, but the contribution of international trade to growth in developing countries is not expected to recover its full strength in the near term. In such an inauspicious international economic environment, recovery of growth in most developing countries and the economies in transition will have to rely more on domestic

The international economic environment for developing countries and the economies in transition has improved, but remains daunting

than on external demand. Low-income developing countries will likely continue to face constraints in accessing private capital markets to finance widening current-account deficits and will be in need of greater support from official sources of international finance.

International finance

Private capital inflows to emerging economies have started to recover

Emerging economies have experienced a sharp drop in bank credit

Spreads on emerging

market bonds have been

normalizing since March

Net private capital inflows to emerging economies, which comprise some 30 large developing countries and the economies in transition, declined precipitously in late 2008 and early 2009, but have rebounded somewhat since. After peaking at about \$1.2 trillion in 2007 before the crisis, the inflows halved in 2008, plunged further in 2009 to an estimated \$350 billion, and are expected to recover to about \$650 billion in 2010 (see chapter III for a more detailed discussion).

The sharpest drop was in international bank lending to emerging economies, with a total net inflow of \$400 billion in 2007 turning into a net outflow of more than \$80 billion in 2009. The economies in transition, especially the Russian Federation, Ukraine, and a few other countries in Central and Eastern Europe, experienced the most dramatic reversal in access to bank lending. Despite the recent stabilization in the banking sector worldwide, bank credits to emerging economies are expected to remain limited in the outlook given the general tightness in the global credit supply. Non-bank lending flows also declined notably during the crisis, but have rebounded since mid-2009 as more emerging economies managed to increase their issuance of bonds. Large outflows of net portfolio equity were registered in the second half of 2008 as international investors reacted aggressively to the sell-off in equity markets worldwide. These flows have recuperated markedly since March 2009, however, along with the rebound in stock markets in both developed and most emerging economies. However, the returning portfolio flows may also reflect a renewed appetite for riskier assets. Speculative motives behind these could become a source of increased volatility in exchange rates and assets prices and, hence, of renewed macroeconomic instability. While foreign direct investment (FDI) flows tend to be less volatile than other components of private capital flows, they have also declined by more than 30 per cent in 2009. In the outlook for 2010, FDI flows are expected to grow by about 20 per cent.5

External financing costs for emerging market economies surged in late 2008, as measured through the Emerging Markets Bond Index (EMBI). Since March 2009, along with the stabilization of global financial markets, the spreads have been normalizing (figure I.2). Spreads across emerging markets have converged and have tended to move much more in tandem since 2007 when signs of the global financial turmoil first became apparent. This suggests significant contagion in these markets, weak capacity to discriminate risks by lenders, and consequent heavy rationing of available finance. Private sector access to credit in emerging markets has been heavily curtailed and this trend continued well into 2009. The exception has been China, where credit growth has boomed from the end of 2008 as the result of strengthened domestic demand. This, however, has also fuelled fears of a build-up of a new asset bubble in that part of the world.

Outflows of capital from emerging economies, particularly to other developing countries, which had gathered some momentum prior to the global financial crisis, have also moderated during the past two years as investors in emerging economies recoiled

See United Nations Conference on Trade and Development, World Investment Report 2009: Transnational Corporations, Agricultural Production and Development (United Nations publication, Sales No. E.09.II.D.15).

along with those in developed economies. Bucking the trend, however, China's outward investment continued to surge, reaching an estimate of \$150 billion in 2009. But exports of capital from oil-exporting developing countries declined notably along with the collapse in their oil revenues.

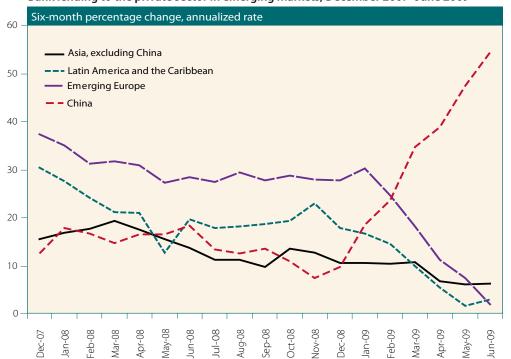
Figure I.2

Daily yield spreads on emerging market bonds, January 2005–October 2009



Figure I.3

Bank lending to the private sector in emerging markets, December 2007–June 2009



Source: IMF, *Global Financial Stability Report*, October 2009.

Source: JPMorgan Chase.

Net official flows to developing countries and economies in transition increased in 2009

Remittance flows to variations among countries

developing countries have moderated, with large

International trade

Recovery in global trade is largely driven by the turn in the inventory cycle

The financial crisis has also significantly affected world trade. Triggered by a retrenchment in import demand in major developed countries and more restricted access to trade financing, trade flows fell at an annualized rate of between 30 and 50 per cent in most economies in late 2008 and early 2009. Asian economies experienced the sharpest decline.

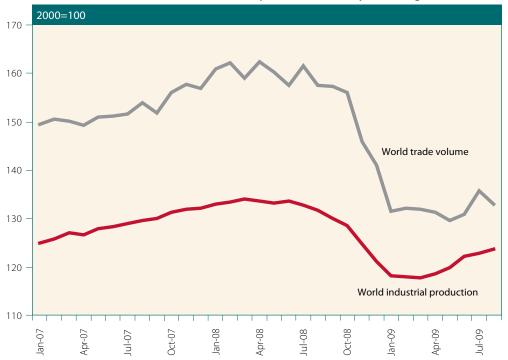
> In Tajikistan, for instance, remittances declined by 22 per cent in the first half of 2009, and were one third lower in the Republic of Moldova. The impact of these declines is particularly significant for these economies as remittances account for more than 30 per cent of GDP in the Republic of Moldova and Tajikistan, and for more than 20 per cent in Kyrgyzstan.

Net official flows to developing countries and the economies in transition have increased in 2009, especially as the International Monetary Fund (IMF) and other multilateral financial institutions significantly expanded their financial resources and started to disburse lending. Emerging Europe received the lion's share of these net official flows. Meanwhile, bilateral official, non-concessional flows also increased as central banks arranged foreign-exchange swaps to deal with the lack of international liquidity. Yet, in the aggregate, net official flows to developing countries are expected to remain negative in 2009 and 2010, continuing the trend of the past decade (see chapter III for details). The return of net official flows (including official development assistance (ODA)) from poor to rich countries was about \$120 billion per year during 2006-2008. That amount is expected to fall to about \$20 billion in 2009, but could increase again to \$66 billion in 2010 (see chapter III, table III.2). Much of the outflow is from developing Asia, while Africa and Latin America and the Caribbean are expected to be net recipients, with positive inflows of about \$14 billion and \$27 billion, respectively, in 2009—in both cases, substantial increases from 2008 levels. Net ODA is expected to fall in absolute terms in 2009-2010 as a consequence of the global economic crisis, as many donor countries target their aid budgets to their level of gross national income (GNI). While ODA flows had increased visibly in 2008, they remained well below all international commitments. Especially for lowincome countries with weak fiscal space, more limited access to aid would not only make it more difficult to meet the MDGs, it could also leave them with insufficient resources to address the crisis with counter-cyclical policies.

Remittance flows to developing countries have moderated. Remittances totalled a sizeable \$338 billion in 2008, or almost three times the amount of ODA and more than half of the estimated level of FDI flows to developing countries. For several small economies, this source of revenue accounts for more than 20 per cent of their GDP. Remittance flows used to be relatively stable, thereby providing a counter-cyclical impulse during economic downturns. However, for some regions, these flows fell sharply as a consequence of the global crisis, most notably in Latin American countries with large numbers of workers abroad. Remittances to some CIS countries also declined steeply.6 This trend has not been universal, however. Remittance flows continued to increase to countries in East and South Asia whose many migrant workers have continued to increase to abroad, albeit at a slower pace than in previous years. The difference can be explained by the fact that migrants from Latin America and the CIS are, respectively, mainly working in the United States and Western Europe (in particular Spain), and in the Russian Federation, whose labour markets have been much more severely impacted by the crisis than those of the oil-rich Gulf countries, which are major destinations for migrants from East and South Asia.

Trade flows have recovered since the second quarter of 2009 (figure I.4). The rebound has been largely driven by the turn in the global inventory cycle discussed above, while import demand from consumption and business investment has remained weak (see chapter II for a more detailed discussion of trade patterns during the crisis).

Figure I.4
Index of world trade volume and industrial production, January 2007–August 2009



Source: UN/DESA, based on data from CPB Netherlands Bureau for Economic Policy Analysis.

Even given the recent rebound, trade flows for 2009 as a whole are still estimated to decline by more than 12 per cent. A mild growth of 5 per cent is forecast for the volume of world trade in 2010 along with the projected moderate recovery of global aggregate demand.

The financial crisis has led to collapses in the prices of oil and non-oil primary commodities. The prices of primary commodities had been on an upward trend since 2002, with a significant surge in late 2007 and early 2008, but the intensification of the global financial crisis in mid-2008 abruptly broke this trend. By early 2009, oil prices had plummeted by as much as 70 per cent from their peak levels of mid-2008 before rebounding to about \$80 per barrel in November 2009, which was still about 45 per cent below the peak. In the same period, prices of metals declined even more sharply to about one third of their peak levels. Prices of agricultural products, including basic grains, also declined significantly. The downward trend came to a halt in the first quarter of 2009 and rebounded thereafter. By mid-2009, real agricultural commodity prices were still high compared with the low levels sustained during much of the 1980s and 1990s. World food prices equally declined, then rebounded along with other primary commodities. The covariant movement is explained in part by the drop in crude oil prices and the related fall in the demand for agricultural inputs for the production of biofuels. With the measurable rebound in the prices of most primary commodities since March 2009, room for further increase is limited in the outlook for 2010, as the slack in supply of these commodities is not expected to

Prices of oil and non-oil primary commodities have rebounded since March 2009 Many developing countries have experienced large swings in their terms of trade

Trade protectionism has been on the rise since the onset of the crisis close in the foreseeable future and only a mild recovery in demand is likely. The only upward pressure will come from the risks associated with a further weakening of the United States dollar, in which the prices of almost all primary commodities are denominated.

As a consequence, many developing countries have suffered strong swings in their terms of trade. Net exporters of oil and minerals in particular felt very strong adverse export price shocks on top of the falloff in global demand as part of the recession, but some ground has been regained more recently. Net importers of food and energy saw their import bills fall during the crisis, but, in general, the related terms of trade gain was more than offset by the steep drop in demand for their exports at the height of the global recession. The more recent reversal in their terms of trade will slow their recovery. More generally, however, high terms of trade volatility makes macroeconomic management more challenging and enhances economic insecurity, all of which tends to be detrimental to long-term growth prospects.8

Trade protectionism increased as the crisis evolved, making the international economic environment even less favourable. A sizeable number of countries, developed and developing alike, have raised tariffs and introduced new non-tariff measures in response to a sharp decline in production in certain industries. The fiscal stimulus packages and the financial measures adopted by many developed countries also contain certain protectionist elements through direct subsidies and support for domestic industries. A few countries also reintroduced export subsidies for some agricultural products that had been previously eliminated, including those for dairy products produced in the EU and the United States. Meanwhile, the number of cases calling for use of a trade defence mechanism, including anti-dumping and safeguard clauses, have also been rising in 2008-2009. Although these protection measures have so far not led to pervasive and high-intensity protectionism, some domestic pressure remains, particularly in view of a further deterioration in the unemployment situation in many countries.

Policy responses

Policy responses need to be better coordinated internationally

Since the intensification of the financial crisis, Governments worldwide have made massive public funding available (amounting to about \$20 trillion, or some 30 per cent of WGP) to recapitalize banks, taking partial or full government ownership of ailing financial institutions and providing ample guarantees on bank deposits and other financial assets. Furthermore, monetary and fiscal policy stances have been strongly counter-cyclical in most major economies. Yet, these unprecedented measures may not have been far-reaching enough and need better coordination internationally.

Financial sector rescue measures

Governments in developed economies took a wide range of measures to stabilize the financial sector When the systemic risks threatening the global financial system intensified in late 2008, Governments, mainly in developed economies, took a wide variety of financial measures

- 5 See chapter II for a decomposition analysis of the trade shocks affecting developing countries during the global recession.
- 8 See World Economic and Social Survey 2008: Overcoming Economic Insecurity (United Nations publication, Sales No. E.08.II.C.1) for further analysis.
- See Report on G20 Trade and Investment Measures, issued on 14 September 2009 by the World Trade Organization, the Organization for Economic Cooperation and Development and the United Nations Conference on Trade and Development, available at http://www.unctad.org/en/docs/ wto_oecd_unctad2009_en.pdf, p. 11.

to stabilize the financial sector. The measures targeted the liquidity and solvency of specific institutions, as well as the functioning of financial markets. More than 20 countries introduced or increased guarantees on retail and commercial deposits, thus reducing the likelihood of bank runs. Government debt guarantees allowed eligible banks to issue new bonds backed by explicit government support in return for an annual fee paid by the issuer. The details of these measures varied across countries. For example, European banks faced higher costs for debt guarantees than banks in the United States. While the United States charged a flat rate to all borrowers regardless of rating, the cost of European guarantees was linked to past spreads on credit default swaps (CDS), making these more expensive for riskier borrowers. The risk on government-guaranteed bonds varies across countries, with some regulators treating them as risk-free from a capital perspective while others assign a 20 per cent capital charge.

Governments recapitalized banks with a view to reducing their financial leverage and increasing their solvency. Most Governments bought hybrid securities, such as preferred shares or mandatory convertible notes. Preferred shares were the most popular, as these instruments limit the risk of future losses to the taxpayer while providing a more attractive dividend stream than common shares. However, as preferred shareholders typically cannot vote at shareholder meetings, Governments have been constrained in their ability to influence the management of financial institutions. Nonetheless, Governments have managed to condition their capital injections. Many countries followed France's example and required banks receiving government support to extend new domestic loans with an associated reporting requirement. The United States and Germany imposed limits on the payment of common dividends, but the United Kingdom of Great Britain and Northern Ireland explicitly prohibited common dividends as long as the Government's preferred shares were still outstanding. Several rescue packages outlined general restrictions on executive pay, but Governments lacked the votes, the support of the banks' boards or the legal basis to block payouts.

A few Governments also purchased troubled assets from large financial institutions or provided insurance against losses on designated portfolios. For example, the Swiss National Bank (SNB) bought mortgage-related assets from UBS and placed them in a special investment vehicle. The United States Treasury set up the Public-Private Investment Program (PPIP) to value the troubled assets and to remove them through an auction mechanism. Under the PPIP, eligible private sector investors are invited to bid on troubled real estate assets held by banks. Some Governments offered asset insurance to a handful of banks subject to payment of an insurance premium. Governments in Iceland, Ireland, the United Kingdom and the United States took control of a number of insolvent financial institutions to protect depositors and prevent contagion to other financial institutions.

These rescue measures have had mixed effect. They seem to have helped to reduce interest-rate spreads on government bonds and CDS contracts, but by increasing a bank's capital ratio and providing a means to refinance existing debt, government rescue packages reduced the probability of default, thereby pushing down CDS premiums on average.

Despite positive signs, concerns remain regarding the health of the financial sectors in major economies. The risk of new speculative bubbles remains as long as regulatory reforms to rein in high risk-taking and operations in markets for financial derivatives and other speculative instruments are not put in place. At present, an important number of banks still show signs of distress. Interest-rate spreads have remained elevated, especially for lending to borrowers that are not considered "triple A". Banks are also still experiencing

Concerns remain about the health of financial sectors in major economies

difficulties in raising new capital from private investors, while—as discussed above—bank lending has remained highly restrictive during most of 2009. Moreover, government-assisted sales of failed banks have led to the creation of even larger financial institutions, possibly increasing systemic risks. Government guarantees and asset insurance have exposed taxpayers to potentially large losses and have become a concern as regards continued political support for financial rescue operations. In the United States, delinquency rates on mortgage loans are still increasing, reaching an historic high of more than 14 per cent in November 2009. Rising unemployment is the major factor explaining the increasing number of foreclosures and homeowners with payment arrears. Finally, the uncoordinated responses across countries have raised concerns about distortions to competition. In particular, national rescue packages have featured different conditions, coverage and costs, with some banks receiving support on more attractive terms than their competitors.

Monetary policy

Central banks responded to the crisis with bold and unprecedented measures Monetary policy responses to the crisis have been bold and unprecedented. Central banks have reduced their policy interest rates by a large margin, with a number of central banks in developed economies cutting their interest rates to close to zero: for instance, the United States Federal Reserve (Fed), the Bank of Japan (BOJ), the Bank of England, the Bank of Canada, Sveriges Riksbank, the SNB, and many others reduced their rates to historical lows. Only in a few cases, such as Hungary, Iceland and the Russian Federation, were central banks compelled to raise interest rates in the early stages of the crisis, as those countries faced sharp depreciations of their currencies. Interest rates were lowered again after they managed to stabilize their exchange rates.

While the magnitude and pace of easing policy interest rates were impressive, central banks of major developed countries took a further set of unconventional measures that were even bolder. First, measures were put in place to ensure that the market interest rates would come down along with the policy rate. To help anchor short-term market rates to the policy target, the Bank of England and the Fed reduced the width of the effective band on overnight rates by changing the rates applied on end-of-day standing facilities. Some central banks expanded their capacity to reabsorb excess reserves so as to neutralize the impact on overnight interest rates of the much-expanded operations. The Bank of England and the SNB issued central bank bills; the European Central Bank (ECB) and the Reserve Bank of Australia (RBA) increasingly relied on accepting interest-bearing deposits; and the Fed took in greater amounts of deposits from the Treasury and started to pay interest on reserves.

Second, interventions were made to alleviate strains in wholesale interbank markets by reducing interbank market spreads. Central banks provided more term funding so as to offset some of the shortfalls in market supply, and they also ensured a smooth distribution of reserves in the system and access to their funding. They relaxed eligible collateral and counterparty coverage, lengthened the maturity of refinancing operations, and established inter-central bank swap lines to alleviate mostly dollar funding pressures in offshore markets. In addition, many central banks introduced or eased conditions for lending out highly liquid securities, in particular government bonds, against less liquid market securities in order to improve funding conditions in the money market.

Third, monetary authorities provided large amounts of additional liquidity to keep financial institutions afloat and to reduce risk spreads in specific financial market

segments through the purchase of commercial paper, asset-backed securities and corporate bonds. In addition, they made direct purchases of public sector securities to influence benchmark yields more generally. Some central banks also intervened in the foreign-exchange market to contain upward pressure on their currencies so as to reduce deflationary risks and loosen monetary conditions.

As a result of these actions, central bank balance sheets expanded substantially and their composition changed significantly. The Fed focused heavily on non-bank credit markets as well as on operations involving private sector securities, for example, the Commercial Paper Funding Facility (CPFF) and the Term Asset-Backed Securities Loan Facility (TALF). The Bank of England initially concentrated its Asset Purchase Facility (APF) primarily on purchases of government bonds. The ECB emphasized banking system liquidity by conducting fixed-rate full-allotment refinancing operations with maturities of up to 12 months and by purchasing covered bonds. The BOJ directed substantial efforts at improving funding conditions for firms through various measures related to commercial paper and corporate bonds.

In the outlook, most central banks may continue to keep their expansionary policy stance for much of 2010 as part of continued macroeconomic stimulus, but some may start to neutralize their policy rates sooner than others. For example, the RBA raised the policy interest rate by 25 basis points in October 2009. Elsewhere, pressure on monetary authorities to begin a gradual unwinding of the unconventional measures will increase.

Technically speaking, it should not be difficult to unwind these unconventional monetary measures. Indeed, short-term liquidity measures can unwind naturally as market conditions improve. For example, short-term lending to financial institutions by the Fed swelled from zero to more than \$1 trillion by the end of 2008, but has since reduced to about \$200 billion as financial markets improved. Assets purchased by the central banks can also be resold into markets, although it will take much longer to unwind some illiquid assets on some central bank balance sheets. However, the key challenges are, first, to find the right timing to start the unwinding without putting an early break on the macroeconomic stimulus and, second, to adequately coordinate the withdrawal of the monetary stimulus with fiscal policy and financial sector rescue operations.

Fiscal policy

A large number of countries have implemented fiscal policy measures to support aggregate demand. Table I.4 summarizes most of the fiscal stimulus packages adopted by 59 economies since late 2008, totalling \$2.6 trillion (or 4.7 per cent of the combined GDP of these countries and 4.3 per cent of WGP). Across countries, the magnitude of the stimuli ranges from less than 1 per cent to more than 10 per cent of GDP.

These packages consist of a wide range of measures, including increases in spending on public consumption and infrastructure investment and measures to boost disposable household income, through cutting taxes and increasing benefits and subsidies, as well as through tax cuts for businesses. The composition of the packages varies across countries and economies. For example, tax-related measures account for more than half of the size of the packages in many developed countries, the highest proportion being in New Zealand and the United Kingdom. In addition, while greater emphasis is placed on revenue-side measures in countries such as India, Indonesia and Thailand, in general, expenditure measures account for a larger part of the fiscal stimulus packages in developing countries.

The balance sheets of many central banks have expanded substantially

Monetary policy is expected to remain expansionary in 2010

Some unconventional policy measures are unwinding

Many countries adopted sizeable fiscal stimulus measures to support aggregate demand

Table 1.4

Fiscal stimulus to address the global financial and economic crisisa

	Share of GDP (percentage)	Fiscal stimulus (billions of US dollars)		Share of GDP (percentage)	Fiscal stimulus (billions of US dollars)
Argentina	1.2	3.9	Luxembourg	3.6	2.0
Australia	4.7	47.0	Malaysia	5.5	12.1
Austria	4.5	18.8	Mexico	2.1	22.7
Bangladesh	0.6	0.5	Netherlands	1.0	8.4
Belgium	1.0	4.9	New Zealand	4.2	5.4
Brazil	0.2	3.6	Nigeria	0.7	1.6
Canada	2.8	42.2	Norway	0.6	2.9
Chile	2.4	4.0	Peru	2.6	3.3
China	13.3	585.3	Philippines	4.1	7.0
Czech Republic	1.8	3.9	Poland	2.0	10.6
Denmark	2.5	8.7	Portugal	1.2	3.0
Egypt	1.7	2.7	Russian Federation	1.2	20.0
Finland	3.5	9.5	Saudi Arabia	12.5	60.0
France	1.3	36.2	Singapore	5.8	10.6
Georgia	10.3	1.3	Slovenia	1.0	0.5
Germany	2.2	80.5	South Africa	1.5	4.2
Honduras	10.6	1.5	Spain	0.9	15.3
Hong Kong SARb	5.2	11.3	Sri Lanka	0.2	0.1
Hungary	10.9	17.0	Sweden	2.8	13.4
India	3.2	38.4	Switzerland	0.5	2.5
Indonesia	1.4	7.1	Taiwan Province of China	3.9	15.3
Israel	1.4	2.8	Thailand	14.3	39.0
Italy	0.7	16.8	Turkey	5.2	38.0
Japan	6.0	297.5	United Kingdom	1.4	38.0
Kazakhstan	13.8	18.2	United Republic of Tanzania	6.4	1.3
Kenya	0.9	0.3	United States	6.8	969.0
Korea, Republic of	5.6	53.4	Viet Nam	9.4	8.4
Lithuania	1.9	0.9			
			All 55 economies	4.7	2 (22
			World	4.3	2,633

Source: UN/DESA, based on information from various sources. Note that the definition and contents of the policy measures vary from country to country and that the size of the packages may not be fully comparable across countries.

- **a** This list of countries and economies is not exhaustive.
- **b** Special Administrative Region of China.

Although the impact of discretionary fiscal policies would typically show effect later than automatic stabilizers and monetary policy, new evidence suggests that fiscal policy in the form of government spending is most effective in the presence of market rigidities and liquidity constraints, as it can raise real wages and, hence, consumption. It is also a stylized fact that fiscal policy has the greatest effect when monetary policy is accommodative, as is the case in the current crisis.

Among developing countries that managed to launch fiscal stimulus packages, the main emphasis has been on increased expenditures, in part because of the limited scope for introducing tax breaks given that revenue-collection is generally weaker in these countries. The multiplier effects are likely greater for expenditure-side measures than for revenue measures, especially in times of great uncertainty. New investments in infrastructure take up a large share of the public expenditure increase. This has been the case particularly in Argentina, China, Malaysia, the Republic of Korea, Saudi Arabia, Singapore and Taiwan Province of China. For instance, about 80 per cent of the fiscal stimulus package in China is related to infrastructure. In many countries, more than one quarter of the stimulus supports social protection measures. Unlike in developed countries, where households may be more reluctant to increase consumption spending, income transfers to vulnerable populations in developing countries are more likely to have high expenditure effects given a high propensity for consumption.

Relative to GDP, the size of the stimulus packages adopted by many developing countries seems to be larger than that of developed countries. The data in table I.4 do not take into account the effect of "automatic stabilizers", however, which tend to be stronger in developed countries with more extended social security and transfer systems. The size of the packages also greatly depends on resource availability. Most developed countries were able to finance stimulus packages by issuing government bonds, either domestically or in global capital markets, and a number of developing countries that had accumulated large amounts of foreign reserves prior to the crisis were also able to stipulate sizeable packages. These include, for instance, the resource-rich economies of the CIS, the Gulf countries and Chile, as well as countries which were able to rely on vast foreign-exchange reserves, such as several countries in developing Asia, and the Russian Federation. However, the fact that Russia's reserve fund is expected to be depleted by the end of 2010 owing to the use of funds for counter-cyclical measures points to the limitations of using reserves in some countries. Meanwhile, a majority of low-income countries were unable to adopt any fiscal stimuli because they had very limited resources for doing so.

These stimulus packages, combined with monetary and financial measures, are considered to have been critical for stabilizing the global economy and leading the recovery of individual economies, although the precise impact is difficult to establish as yet. One difficulty lies in separating the effects of fiscal stimuli from those of other policies. Also, many countries have implemented only a relatively small part of the packages. For instance, the United States was estimated to have implemented only 25 per cent of the total size of its stimulus package by the third quarter of 2009. With this in mind, the

Expenditure-side measures dominate stimulus packages in developing countries

Automatic stabilizers are stronger in developed countries

Fiscal stimulus measures were critical in stabilizing the global economy

For example, in Organization for Economic Cooperation and Development (OECD) countries, the multipliers for expenditure are estimated to be greater than 1.0, compared with a range of between 0.2 and 0.8 for revenue measures. See OECD, "The Effectiveness and Scope of Fiscal Stimulus," in OECD Interim Economic Outlook, March 2009, ch.3, available at http://www.oecd.org/dataoecd/3/62/42421337.pdf.

¹¹ See Yanchun Zhang, Nina Thelen and Aparna Rao, Social Protection in Fiscal Stimulus Packages: Some Evidence, UNDP/ODS Working Paper (New York, Office of Development Studies, United Nations Development Programme, 2009).

Fiscal deficits have widened substantially in most countries

Public debt ratios have soared, raising concerns about fiscal sustainability

A premature withdrawal of the global fiscal stimulus measures could trigger a relapse into recession IMF estimates that discretionary measures and automatic stabilizers in the G20 countries combined have increased growth by about 2 percentage points and may have decreased unemployment by 1 percentage point when compared with a situation without fiscal stimulus.¹²

The crisis and the policy responses have led to a substantial widening of fiscal deficits in most countries, resulting in most cases from a combination of declining tax revenue and rising spending. In low-income countries, however, declining government revenue has been the main factor.

The general government budget deficit in the euro area is forecast to reach 6.5 per cent of GDP in 2010, compared to a pre-crisis level of 0.6 per cent in 2007, with the deficits surging to 14.8 per cent in Ireland and 9.5 per cent in Spain. In other developed countries, budget deficits are forecast to reach 10.3 per cent of GDP in Japan in 2010, 11.6 per cent in the United Kingdom, and more than 10 per cent in the United States. Most developing countries have experienced a deterioration in their budget balance by about 3–5 per cent of GDP, but some, such as oil-exporting countries and countries in South Asia, have experienced much larger increases. In general, the policy space for a further increase in fiscal stimuli in the outlook is limited in most developing countries, unless they obtain access to more external financing.

Rapidly widening budget deficits are causing public debt ratios to soar, which in turn have raised concerns about fiscal sustainability. As a consequence, there is mounting political pressure in many countries to end the fiscal stimulus and start consolidating government finances. Such concerns are present particularly in developed countries, where the increase in public debt has aggravated the structural fiscal pressures from population ageing and other longer-term fiscal problems. The average public debt-to-GDP ratio in developed economies is expected to exceed 100 per cent in 2010 and to move even higher thereafter. Concerns about fiscal sustainability may also have an impact on the perceived risks of debt, which in turn would lead to a higher risk premium and thus set limits on future financing of fiscal deficits.

The current challenge is how to balance the short-term need for continued policy support in order to strengthen the recovery with the longer-term need to consolidate public debt in order to maintain fiscal sustainability. A premature withdrawal of fiscal stimuli, however, could well pull the plug on the nascent recovery, as much of the rebound has been a direct result of the policy responses. A fall back into recession caused by early withdrawal could well lead to another widening of budget deficits resulting from a further drop in tax revenue and could trigger a downward spiral of pro-cyclical fiscal adjustment. Experience from past crises shows that countries that managed to sustain fiscal stimuli until strong growth recovery was reached did in fact "grow" out of a cyclical increase in the budget deficit and public debt, as was the experience of the United States in the 1990s. In contrast, countries that withdrew stimulus too soon found themselves in a quandary of growth stagnation and steadily rising public debt, as was the case in Japan in the 1990s and early 2000s.

See International Monetary Fund, "Global Economic Policies and Prospects," note by the staff of the International Monetary Fund at the Group of Twenty Meeting of the Ministers and Central Bank Governors, London, 13-14 March 2009.

Have the policies worked?

In summary, the policies have been successful in restoring global confidence, stabilizing financial markets, supporting effective demand and alleviating the economic and social impact of the financial crisis.

Policy responses have been concerted to some extent among major economies at the level of the G20. At their London and Pittsburgh summits in April and September of 2009, respectively, the leaders pledged to continue the stimulus and other extraordinary measures for as long as necessary. They also pledged to deliver on all aid and other international development commitments and fight off protectionist tendencies. At the Pittsburgh Summit, leaders also agreed to establish a policy coordination framework for balanced and sustainable growth of the world economy. These are clear signals that world leaders are committed to avoiding the beggar-thy-neighbour policies that hampered a quick recovery from the Great Depression of the 1930s. Yet, so far, actual policy coordination has been superficial at best and has lacked a more concrete framework with clear policy targets, sufficient consensus on the size and time horizon for continued stimuli, and mechanisms to make concerted actions binding.

Concerted efforts have led to a significant increase in resources for countries with external financing problems. The G20 by and large lived up to its promise to provide \$1.1 trillion for this purpose, including through tripling the resources available to the IMF to \$750 billion (including a new Special Drawing Rights (SDR) allocation of \$250 billion), facilitating additional lending by multilateral development banks of at least \$100 billion, and supporting trade finance to the tune of \$250 billion. The IMF and the World Bank have, in effect, significantly stepped up lending operations. By November 2009, 18 countries received emergency financing through standby programmes of the IMF, totalling some \$53 billion, of which about \$25 billion was allocated to Iceland and countries in Eastern and Central Europe, \$18 billion to economies in transition and only \$10 billion to developing countries. Mexico and Colombia made use of the new Flexible Credit Line (FCL) for a combined amount of \$39 billion. Low-income countries mainly relied on the Poverty Reduction and Growth Facility (PRGF) and the Exogenous Shocks Facility (ESF), but new disbursements since the onset of the crisis have been small. The Fund has also taken steps to double its capacity for lending to low-income countries (to \$23 billion), but still lacks the resources to reach this capacity. The World Bank has stepped up lending operations to \$33 billion in 2009, up from \$13.5 billion in the previous year. Nonetheless, as discussed above, the enhanced multilateral lending capacity has not prevented a negative net flow of official financing to developing countries as a group in 2009.

All these actions may still not be enough to induce a self-sustained process of recovery. Global demand recovery is expected to remain weak in the outlook and important financial fragilities still need to be addressed, while, in addition, many developing countries have not been able to implement significant counter-cyclical policies on their own. At the same time, however necessary they may be in the crisis, these policies have redistributed risks from the financial sector to other sectors in the broad economy and have reallocated debts from private sector to public sector. They have also led to a substantial expansion of the balance sheet of the central banks (mainly in developed countries) and to considerable deterioration in government budget positions in many countries. These risks, if not addressed through further action, may pose a serious challenge to sustained recovery and global economic stability.

International policy responses have been largely successful, but a concrete policycoordination framework is lacking

Availability of emergency financing from multilateral institutions has improved

Global policy responses may be insufficient to induce a self-sustained process of recovery

Uncertainties and risks

The baseline outlook is subject to significant downside risks and uncertainties

Even the mild recovery projected in the baseline outlook is subject to high risks and uncertainties, mainly on the downside. Two of the main risks are closely related to how the crisis is being managed (see above discussion) and to the systemic flaws that led to this crisis. The first refers to the risk of a premature "exit" from both the stimulus measures for demand recovery and the interventions to prevent further financial sector fallout. The second relates to the risk of a renewed widening of the global macroeconomic imbalances which were part of the problem in the first instance and which could erode confidence in the United States dollar and become a source of renewed financial instability. A further spread and intensification of the H1N1 influenza pandemic could also hurt economic activity worldwide, but its implications are as yet difficult to foresee. On the upside, there could be further moves towards strengthened international policy coordination and deeper international financial reform, which may succeed in forging greater global financial stability with the promise of more balanced and sustainable growth in the medium run (see the section on policy challenges below for further discussion).

Risk of an early retreat from stimulus measures

A premature exit from the stimulus measures poses a major risk for the global recovery A premature withdrawal of policy support poses a significant risk, as both the financial sector and the real economy continue on a fragile path. The stronger-than-expected rebound in equity prices worldwide may belie the fact that problems still remain in the financial sectors of major economies and that these problems continue to constrain credit availability and could lead to more failures of financial institutions in the near future. The rebound in trade and industry during the second and third quarters of 2009 could send a false signal that a strong recovery is on its way. In fact, levels of trade flows and industrial production are still well below pre-crisis peaks and, as analysed above, the rebound is to a large extent related to a turnaround in the global inventory cycle rather than to a recovery of private consumption and investment. These factors could lead to complacency vis-à-vis policy efforts to overcome the crisis.

Public support for massive government interventions is weakening in some countries At the same time, in some major economies, political support for continued massive government stimulus appears to be weakening as public debt has risen steeply and/or as public discontent increases over perceptions that the massive financial sector bailouts may not have worked well enough to weed out bad banking practices. These factors undermine the belief that the stimulus and financial rescue measures are working and could be a motive for an early reversal in policy stance in the major economies.

A premature exit could lead to a double-dip recession and further increases in public debt levels However, while mounting public debt could become a drag on growth in the future, immediate concerns should be focused on the continued weakness in financial sectors, persistent large output gaps and continued rising unemployment rates, which signal that the recovery is far from robust. An early phasing-out of stimulus measures could therefore exacerbate these weaknesses in the global economy and abort the nascent recovery.

Simulations using the United Nations Global Policy Model (GPM) suggest that an early withdrawal of the fiscal and monetary stimulus packages in the major economies could cause the world economy to dip into a double recession and sustain increases in public indebtedness. The policy scenario rests on two key assumptions.¹³ The first is

There are valid reasons for thinking that the risk of an early withdrawal of policy measures could materialize as early as 2010, particularly in Europe. However, taking into consideration the continued high levels of unemployment expected for 2010 and continued tight credit supply conditions in many developed economies, it seems more plausible to assume that this withdrawal would become effective from 2011 onwards.

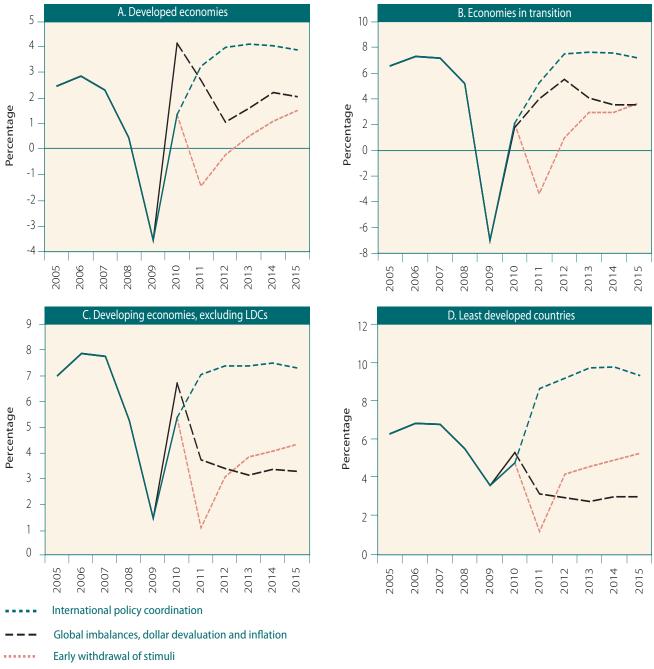
that current fiscal and monetary stances in major economies will by and large continue in 2010, but will reverse in 2011 over fears of mounting public sector debts and rising inflationary pressures. An unwinding of expansionary policies is assumed to be rapid and to have drastic effect in the developed countries and emerging Asia (except China and India), and to involve a fiscal contraction equivalent (ex ante) to the size of half of the fiscal stimulus to be implemented during 2009-2010. Withdrawal of fiscal stimulus in middle-income developing countries is assumed to be more moderate. In these cases, fiscal consolidation tapers off from 2012. China and India, in contrast, are assumed to shift to a neutral fiscal stance to avoid actual fiscal contraction. Monetary policy is assumed to be fully synchronized, thus leading to consistent rises in policy interest rates. The second major assumption is that current high unemployment and household indebtedness will remain a drag on private consumption and investment demand in the major economies into 2011, when the policy stimuli will be withdrawn. Likewise, deleveraging of financial institutions is assumed to continue in the initial years of the simulation period, keeping the global credit supply tight.

The double-dip recession resulting from this scenario would be most marked for the developed economies and the economies in transition (figures I.5a-b). The subsequent recovery would be sub-par and slow. The recession caused by a premature withdrawal of stimuli would affect European countries the most, followed by Japan and the other developed economies. This would be the result not only of relatively stronger efforts towards fiscal consolidation but, even more importantly, of greater sluggishness of private demand in this scenario. Developing countries would be affected even more severely by a double-dip recession than they have already been as a consequence of the present crisis (figures I.5c-d). The reason for this is that, under this scenario, the cushion provided by the strong fiscal stimuli of major developing countries (especially China) would no longer be present. This would put a further drag on global aggregate demand, as well as on demand for commodities, and would put downward pressure on commodity prices, thereby affecting many other developing countries (see appendix table A.I.1). The model simulations suggest further that any attempts at fiscal consolidation amidst a recovery that is only nascent would be self-defeating. The double-dip recession would reduce government revenues even more, while the further fall in GDP would continue to push up debt-to-GDP ratios and affect private sector confidence (see appendix table A.I.5).

A double-dip recession would be most marked in the developed economies and the economies in transition

Figure 1.5

Gross domestic product growth under the Global Policy Model scenario simulations, 2005–2015a



Source: UN/DESA.

a Data for 2009 are preliminary figures; data for 2010-2015 are simulation results.

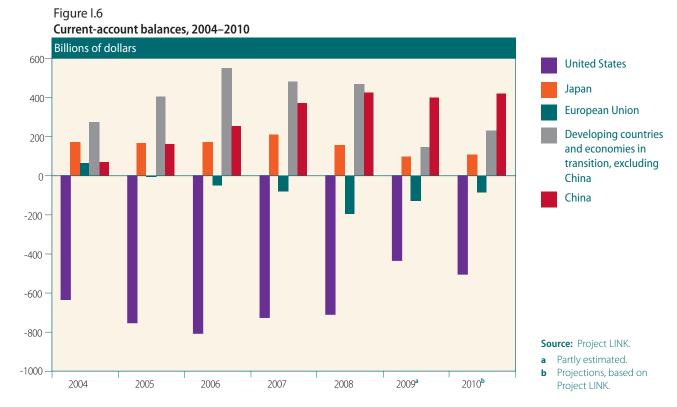
Risks of widening global imbalances and dollar decline

The global financial crisis and worldwide recession have led to a recessionary adjustment of imbalances in current accounts across deficit countries with steeply falling imports (led by the United States) and a collapse of export earnings in most surplus countries. However, as the financial crisis abates and global growth tentatively recovers, the risk of a substantial further widening of the imbalances also rises. In most surplus countries, especially those in developing Asia, growth continues to rely heavily on exports and high savings rates, leading to relatively weak domestic demand and high reserve accumulation. In the major deficit countries, particularly the United States, private savings have increased as consumers have become more cautious, but not by a sufficient margin to cover widening fiscal deficits and prevent mounting public indebtedness. The external deficit is therefore expected to widen again.

The risk of a substantial widening of the large global imbalances is rising

The large external deficit of the United States narrowed from its peak of \$800 billion in 2006, or more than 6 per cent of GDP, to an estimated \$450 billion in 2009, or about 3 per cent of GDP. Among the original major surplus economies, the euro area has already moved into a deficit which is continuing to widen, while Japan's surplus has dropped since mid-2008 (although it has rebounded recently). The savings surpluses of the oil-exporting countries have also declined substantially, but the surplus in China has remained high, at above \$400 billion in 2009 (figure I.6).

The current-account deficit of the United States narrowed considerably in 2009



The narrowing of the current-account deficit in the United States since the eruption of the financial crisis has mainly been driven by a sharp downward adjustment in household consumption and residential and business investment, as well as by an in-

crease in household savings. Consumption expenditure has turned from an average annual growth of about 3 per cent in the years prior to the crisis to a decline of 0.2 and 0.7 per cent in 2008 and 2009, respectively. Housing investment has declined by about 20 per cent annually from 2007 to 2009, and business investment has turned from a growth of about 7 per cent prior to the crisis to no growth in 2008 and to a decline of 17 per cent in 2009. The household saving rate went up from 1.7 per cent in 2007 to about 4 per cent in 2009. On the other hand, the government deficit has increased. With the recession reducing government revenue and the stimulus measures increasing expenditure, the budget deficit of the United States has surged from \$160 billion in 2007, or a little more than 1 per cent of GDP, to an estimated \$1.5 trillion in 2009, or more than 10 per cent of GDP. This is much more than the expected rise in private savings; hence, a substantial widening of the external deficit of the United States is very likely.

Different factors led to declining surpluses in Germany, Japan, and oilexporting countries The corresponding reduction in the aggregate of the current account balance of major surplus economies has been driven by different factors. The savings surplus of most oil-exporting countries, for example, has dwindled as a consequence of declines in revenues of oil exports as the oil prices plunged, as well as increased government spending in stimulus packages to boost domestic demand. The drop in the exports of manufactured goods in Germany and Japan has been a major factor in the decline in the trading surplus of these countries, accompanied by lower domestic savings as a consequence of a deterioration of government savings and declines in consumption demand that have lagged behind the slump in GDP.

In the case of China, where the current-account surplus has continued to rise in terms of level but moderated slightly in terms of a percentage of GDP, the persistent surplus is a reflection of two factors. In the external sector, the large proportion of China's "processing trade", accounting for about 60 per cent of China's total trade, lay at the root of a synchronized decline in China's exports and imports: as the orders for China's exports dropped, China's orders for the imports of raw materials and intermediate goods, which are used as inputs for manufacturing the exports, also dropped. On the domestic front, the large stimulus package enacted as of late 2008 has indeed boosted domestic demand to offset some of the dragging effects from the weakening external demand. However, the stimuli have had more of an effect on boosting fixed investment than household consumption, leaving the household consumption-to-GDP ratio at a low level, below 40 per cent. The budget deficit has nonetheless increased by between 2 and 3 percentage points of GDP from its original near-balanced position.

To add to the situation, the net foreign liability position of the United States has increased substantially over the past two decades, reaching \$2.1 trillion in 2007 (figure I.7).14 The position worsened further with the global financial crisis in 2008 and surged to \$3.5 trillion by the end of 2008, or 25 per cent of GDP. The increment of about \$1.4 trillion is approximately double the current-account deficit registered in 2008, implying that half of the increase can be explained by a revaluation of assets and liabilities to the disadvantage of United States investors and debt holders.

United States-owned assets abroad increased by \$1.6 trillion to \$19.9 trillion by the end of 2008, while foreign-owned assets in the United States increased by \$2.9 trillion to \$23.4 trillion. On both sides of the balance sheet, the increase was mainly on account of acquisitions of financial derivatives, while non-derivatives declined. Because of the plunge in equity prices and the writing off of sub-prime mortgage-related debts,

The net foreign investment position of the United States deteriorated significantly during the crisis

Elena L. Nguyen, "The international investment position of the United States at yearend 2008", Survey of Current Business, vol. 89, No. 7 (July 2009), pp. 10-19, available at http://www.bea.gov/scb/pdf/2009/07%20July/0709_iip.pdf.

the value of United States-owned overseas assets dropped by about \$2 trillion, while the value of external liabilities declined by \$1.2 trillion. Both the United States and foreign investors lost their appetite for private sector securities as a result of the increased risk aversion caused by the crisis. In contrast, foreign investors substantially increased holdings of United States Treasury bills in the approximate amount of \$834 billion in 2008, reflecting a "flight to safety" into dollar assets in the wake of the crisis.

Figure I.7

Net international investment position of the United States, 1976–2009



Sources: United States Bureau of Economic Analysis, and Project LINK.

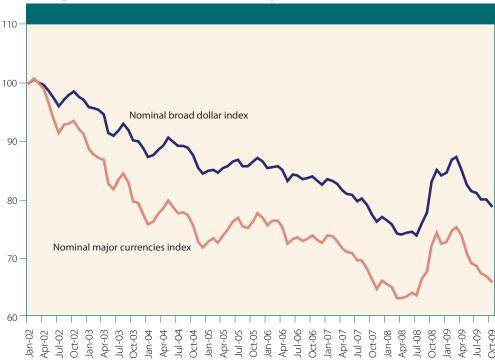
Estimation by UN/DESA

The deepening of the financial crisis in early 2009 led to a further increase in the net external liability position of the United States to an estimated \$3.8 trillion. With the rebound in equity markets and stabilization of financial markets, the revaluation effects should have moderated, but the steep rise in the United States budget deficit and the much weaker rise in private savings led to a renewed widening of the current-account deficit and a further increase in the net liability position. Consequently, the net foreign investment position of the United States has deteriorated substantially during the crisis.

The abrupt adjustment of the global imbalances and the further worsening of the net foreign investment position of the United States are associated with the volatile and erratic movement of the exchange rate of the United States dollar vis-à-vis other major currencies. The value of the dollar had been on a downward trend since 2002, but rebounded in the second half of 2008 through the first quarter of 2009. This sharp appreciation of the dollar was mainly driven by the flight-to-safety effects as the global financial crisis heightened risk aversion in general and caused a massive move of financial assets worldwide into United States Treasury bills. Since March 2009, however, the dollar has resumed its downturn, as a result of the stabilizing conditions in global financial markets, which moderated the increased demand for dollars associated with the deleveraging process of major financial institutions and the flight to safety by investors; at the same time, investors

The United States dollar has resumed its downward trend after conditions in global financial markets stabilized started to become increasingly concerned about the rise in the budget deficit and the worsening of the net foreign investment position of the United States. The value of the dollar has dropped to the lowest level in history vis-à-vis other major currencies (figure I.8).

Figure 1.8 Exchange-rate indices^a for the United States, January 2002-October 2009



Source: United States Federal Reserve Board, rebased by UN/DESA.

a The major currencies index contains currencies of most developed countries; the broad index incorporates currencies of emerging economies into the other index. A decline in the index represents a depreciation of the dollar.

The risk of a hard landing of the world's main reserve currency remains high

Further rising external indebtedness of the United States following a renewed widening of the twin deficits will keep downward pressure on the dollar, and the risk of a hard landing of the world's main reserve currency will remain high.

A further simulation of such a scenario using the United Nations GPM shows that even a relatively mild dollar crisis could cause a double-dip recession, one that would be less severe but more lasting than in the case of an early withdrawal of policy stimuli. The central assumption is that the stimulus packages and a strong return of consumer and business confidence would lead to a return to the pre-crisis pattern of growth and to a renewed widening of the global imbalances, as discussed above. This, in turn, would lead to a projected rise in the United States current-account deficit of 6.4 per cent of GDP, up from 4.1 per cent in 2009. Such a return to "business as usual" would support a strong recovery of the world economy in 2010, but one that would not have a lasting effect (see figures I.5a-d above). Investor confidence would be affected by further rising public indebtedness and a drastic dollar devaluation. In the United States, public debt would rise to nearly 90 per cent of GDP in 2010, 20 points higher than a year earlier. The dollar would devalue by 28 per cent against the euro and 25 per cent against the yen in 2010, and would decline further in 2011. What happens next is driven largely by endogenous policy reactions as captured in the GPM. Inflation in the United States would accelerate from less than half of one per cent in 2009 to 4 per cent in 2010. This, in turn, would trigger a tightening of monetary policy, with policy interest rates increasing to 2 per cent in 2010 and further to 5 per cent in 2011. Fiscal consolidation would also follow, albeit with a lag. (see appendix tables A.I.3 and A.I.4). Yet, the continuing devaluation of the dollar would

continue to exercise further inflationary pressure, requiring stronger policy responses. The process continues, with inflation reaching about 6.5 per cent despite the drastic policy action and abating only partially thereafter, when the dollar is found to be less than 50 per cent its value against the currencies of other developed economies. Though not explicitly modelled, this could precipitate a crisis of confidence in the dollar causing global financial instability farther down the line. The lead-up to a hard landing of the dollar would be a lasting slowdown of global economic activity. Commodity prices would nonetheless rise because of the dollar devaluation. Developing countries, including those experiencing terms-of-trade improvements, would be hurt by the global slowdown.

Policy challenges

Sustainable global rebalancing

Dealing with these risks will be challenging. Since growth is not expected to be strong enough to reduce unemployment until well into 2010, private consumption demand will remain sluggish. As financial sector fragilities still exist in major economies, the global credit supply may remain tight in the immediate period ahead. In addition, the inventory adjustment which supported the recovery in the second half of 2009 will be a temporary phenomenon. This implies that continued fiscal stimulus will be necessary to keep up global aggregate demand, and further pressure on financial institutions will be needed to cleanse their balance sheets, resume normal lending and avoid a return to pre-crisis excess.

Continued fiscal stimulus is needed to support global aggregate demand

The immediate challenge for policymakers will be to determine how much longer the fiscal stimulus should continue. Given the risk of a double-dip recession resulting from premature withdrawal, the stimulus should continue at least until there are clearer signals of a more robust recovery. It may be difficult, however, to establish when and whether the recovery has become robust. Substantial improvements in employment conditions and reduction of output gaps will likely be meaningful indicators for establishing the turning point.

Three forms of rebalancing of the global economy are

To avoid a return to the unsustainable pattern of growth that led to the global crisis in the first place, three forms of rebalancing of the global economy would need to take place over time. First, the pressure on Governments to buoy global demand would need to diminish gradually through renewed impulses from private demand. Second, the composition of aggregate demand would need to be rebalanced to lend greater weight to investment in support of future productivity growth, and especially to initiate the transformative investments needed to meet the challenge of climate change. Third, demand across countries will need to be rebalanced. This would involve a shift towards external demand (net exports) in major deficit countries, such as the United States and a few other developing countries, and towards domestic demand in the major surplus countries, especially those in Asia.

Orderly rebalancing will only be achieved through close policy coordination

These three rebalancing acts will require close policy coordination as they are strongly interdependent. Rebalancing across countries is needed because one of the key drivers of pre-crisis growth, consumer demand in the United States, is expected to remain sluggish in the outlook. From the perspective of global imbalances, it would also be undesirable to have to rely again on this source of growth for the recovery. In any case, United States households have already increased savings to about 3 per cent of GDP during 2009

(from almost zero savings in the years prior to the crisis). Private investments are also expected to remain sluggish in the near future in the United States (as well as in other major developed economies) as rates of capacity utilization are at historic lows. If fiscal stimulus is to be phased out, net exports of the major deficit countries would need to increase. Rising exports by these countries would need to be absorbed by major surplus countries, starting with China and other parts of developing Asia. This could be achieved in part through a further strengthening of domestic demand through fiscal stimulus which, along with improved market access and an orderly devaluation of the United States dollar, would push up import demand in that part of the world. The fiscal stimulus measures that are in place are already supportive of this kind of rebalancing but are as yet not strong enough, and the change will only come gradually. GDP of the countries of emerging Asia is roughly half that of the United States, so they would need to lower their combined current-account surpluses by about 6 per cent of their combined GDP to lower the United States deficit by, say, 3 per cent of its GDP.

But not all of Asia's trade is with the United States and other countries would therefore need to contribute to the rebalancing. Germany and Japan, other major surplus economies, could seek to strengthen domestic investment and productivity growth in their production sectors, while major oil exporters could further step up domestic investment plans to diversify their economies also. Additional financial transfers to developing countries with weak fiscal capacity would be needed to complete the rebalancing process and would enable these countries to increase domestic investment in infrastructure, food production and human development so as to support growth, poverty reduction and sustainable development, and would also encourage global import demand.

Public and private investment to address climate change can be an integral part of the rebalancing efforts

Stepping up public and private investment to address climate change could well be an integral part of the process. The recession has led to a notable reduction in global greenhouse gas (GHG) emissions worldwide in 2008-2009 (see annex table A.22). However, as the world economy recovers, demand for energy will also increase, as will GHG emissions. In order to reach the required reductions in CO2 emissions in a timely manner and avoid a destabilizing rise in global temperatures, large-scale and upfront investments will need to be made. As analysed in a recent United Nations study,¹⁵ such investments in energy efficiency and renewable energy generation need to be made now in order to achieve the scale effects needed to lower the cost of green technologies and effectively attain low-emission growth paths. These investments will also be required in developing countries, where energy demand would be expected to increase starkly along with their efforts to reach higher levels of development. By leapfrogging to green technologies, they could contribute to emission reductions while sustaining high-growth development trajectories. Substantial investments will need to be made towards climate change adaptation, especially in developing countries that are already being affected by the adverse effects of global warming. Estimates of the level of investments needed for climate change mitigation and adaptation vary, but there seems to be a growing consensus that they would be substantial but affordable, in the order of about 2 per cent of WGP per annum over the coming two decades.¹⁶ New investments of this size are large enough to play a role in the required adjustment in the global macroeconomic imbalances. Since developed countries presently possess a comparative advantage in the development of green technologies and

¹⁵ See United Nations, World Economic and Social Survey 2009: Promoting Development, Saving the Planet (United Nations publication, Sales No. E.09.II.C.1).

See, United Nations, ibid., chap. VI; World Bank, World Development Report 2009: Reshaping Economic Geography (Washington, D. C.: The World Bank); and Nicholas Stern, A Blueprint for a Safer Planet: How to Manage Climate Change and Create a New Era of Prosperity (London: The Bodley Head, 2009).

related capital goods, the increase in world demand for such products should thus contribute to a reduction in the aggregate external deficit of their economies.

Such a sustainable rebalancing of the world economy will by no means be easy to achieve and will require significantly enhanced international policy coordination. The macroeconomic feasibility of the three types of rebalancing was assessed through additional simulations using the GPM. The results, presented in figures 1.5a-d above as the "international policy coordination" scenario, suggest that a combination of manageable global imbalances, growth convergence between developed and developing countries and greater environmental sustainability is indeed possible. The key assumptions of this scenario are that countries effectively coordinate policies in pursuance of these goals. These policies are initially driven by higher public investments directed at promoting transformative investments in infrastructure and low-carbon emission energy production (including incentives for a crowding-in of private investment in such activity); financial transfers to developing countries to engage in investments in renewable energy; and climate change adaptation and economic diversification. As a result, fiscal policy stances remain expansionary in developing countries, but are phased out gradually in developed countries (see appendix table A.I.4). An additional assumption of the scenario is that developing countries are granted full market access for all their exports (agricultural and non-agricultural). This assumption ("trade not aid") would limit the amount of additional financial transfers that developing countries would need to receive in order to finance the sustainable development strategy, and over time should enable them to finance the investments through export growth and domestic resource mobilization (see appendix table A.I.2).

All countries and regions would reap the benefits of growth in this scenario, not only from the increased multiplier effects of the policy impulses that are internationally coordinated, but also from more stable world commodity prices, as it is assumed that the global investment strategy would lead to a more stable energy supply and therefore greater energy security. More stable energy prices would also spill over to other commodity prices. Rebalanced global growth would narrow current-account surpluses and deficits across countries, and public indebtedness (appendix tables A.I.2 and A.I.3) would also fall over time with a higher growth and greater dynamism of private sector activity.

Naturally, these benign outcomes may not come to pass smoothly and macroeconomic trade-offs could emerge (for instance, in the form of higher inflationary pressures—which could put upward pressure on interest rates) that could then offset some of the growth gains. This will consequently require an adequate platform and framework for global policy coordination.

Strengthening policy coordination

The framework for "strong, sustainable and balanced growth" launched by the G20 leaders at the Pittsburgh Summit could prove an important step in the right direction. As part of this framework, G20 members with significant external deficits, mainly the United States, have pledged to undertake policies to support private savings and undertake fiscal consolidation while maintaining open markets and strengthening export sectors. Surplus countries, including China, Germany and Japan, have agreed to strengthen domestic sources of growth, through such measures (which will vary according to country-specific circumstances) as increasing investment, reducing distortions in financial markets, boosting productivity in service sectors, improving social safety nets, and lifting constraints on demand growth. Such actions would be broadly in line with the rebalancing strategy

Effective coordination of macroeconomic policies can lead to large welfare gains

All countries and regions would reap growth benefits from increased coordination

The framework launched at the G20 Pittsburgh Summit is a step towards more balanced global growth outlined above, although the necessary investments in the greening of the global economy would need to be brought more clearly into the equation.

G20 countries also agreed on the need for regular consultations, strength-ened cooperation on macroeconomic policies, the exchange of experiences on structural policies, and mutual assessment. More specifically, they will set up a set of shared policy objectives towards which individual countries would orient their medium-term policy frameworks. They will also develop, with the assistance of the IMF, a forward-looking assessment of economic developments with a view to analysing patterns of demand and supply, credit, debt and reserves growth, and assessing the implications and consistency of fiscal and monetary policies, credit growth and asset markets, foreign-exchange developments, commodity and energy prices, and current-account imbalances. The monitoring of policy implementation is to take place through regular reporting to G20 members and the International Monetary and Financial Committee (IMFC). On that basis, policy adjustments, both individual and collective, may be proposed.

The need for effective international policy coordination to manage the risks of global economic instability and promote development has been reiterated in previous issues of the *World Economic Situation and Prospects (WESP)*. It was also emphasized in the outcome document of the United Nations Conference on the World Financial and Economic Crisis and its Impact on Development held in June 2009.¹⁷

As elaborated in detail in the *World Economic Situation and Prospects 2007*,18 a successful framework for international macroeconomic policy coordination should consist of at least four components: developing a consensus on common goals through international consultations with outside mediation, addressing commitment problems by issuing multi-year schedules for policy adjustments, enhancing the context for mediation and the perceived legitimacy of the mediator, and initiating systemic reforms in the field of international monetary and financial affairs.

In this context, the framework proposed by the G20 has taken the first step towards international policy coordination—at least among the major developed and emerging economies—to prevent a recurrence of the large global imbalances. The success of this framework, however, will depend not only on how to institutionalize the mechanism delineated above (which is so far still carried out on an ad hoc basis) but also on progress in the broad reforms of the international financial architecture and global economic governance.

To strengthen global governance, it would seem important to make further progress on four related fronts. First, multilateral surveillance by the IMF will need to be extended well beyond the traditional emphasis on exchange rates, to address broader macrofinancial surveillance (see chapter III), and also to monitor the "sustainable rebalancing" process of the global economy as outlined.

Second, more pervasive progress on governance reform of the IMF will be needed to add legitimacy to the institution's enhanced role in this respect and also for mediating multi-annual agreements. Mediation to achieve consensus on the main targets for policy coordination is unlikely to be successful where doubts exist about the impartiality of the mediator. In this context, the reform of the governance of and representation in the IMF has become all the more urgent and important so that seats in the Executive Board and votes in the Fund better represent developing-country interests in the decision-making process.

- See United Nations General Assembly resolution 63/303 of 9 July 2009.
- 18 United Nations, World Economic Situation and Prospects 2007 (United Nations publication, Sales No. E.07.II.C.2).

A successful framework for international macroeconomic policy coordination should consist of at least four components

To strengthen global governance, further progress is needed on four fronts Third, while the ongoing crisis has given strong impetus to macroeconomic policy coordination, there is no guarantee that all parties will remain committed to agreed joint responses. Having clear and verifiable targets for desired policy outcomes will help make parties accountable, and the possible loss of reputation through non-compliance should be an incentive to live up to policy agreements. The agreement could become more enforceable, however, if there were an actual cost attached to non-compliance. One possible mechanism that could be considered in this respect is for all major parties to commit a share of their allocation of SDRs to the agreement, which they would lose in the case of non-compliance. Such a mechanism could have the advantage of focusing agreements on targets in terms of policy *outcomes*, rather than in terms of adjusting specific policy *instruments*. The SDRs returned to the IMF as "penalties" for non-compliance could then, in the absence of effective implementation of the policy coordination framework, be used to complement compensatory financing available for developing countries that would be affected by continued global instability.

Fourth, sustainable rebalancing of the global economy will require close coordination with other areas of global governance, including those related to development financing and the multilateral trading system, and the United Nations Framework Convention on Climate Change (UNFCCC). No specific mechanism for such coordination exists at present, and the creation of such a mechanism would seem worthy of consideration.

Reforming the global reserve system

The global financial crisis has further exposed major deficiencies in the international financial architecture, as well as failures of regulation and supervision at national levels. As the global economy recovers, more, rather than less, urgent efforts will be needed to spearhead reforms of international and national financial systems so as to prevent a similar crisis from recurring. World leaders at meetings of the G20 and at the Conference on the World Financial and Economic Crisis and its Impact on Development have recognized the need for farther-reaching reforms of the global financial system, as discussed in detail in chapter III. One key area of reform to be highlighted here is that of the global reserve system. Dealing with the deficiencies of the present system would significantly enhance the effectiveness of any international policy coordination mechanism, since it would also address the inherent tendency of the present system towards global imbalances and an unstable value of the major reserve currency.

The present global reserve system, which uses the United States dollar as its major reserve currency, suffers from a number of systemic flaws that have been well documented since its creation.¹⁹ First, it suffers from the deflationary bias characteristic of any system in which the burden of macroeconomic adjustment falls on deficit countries.

Reforms of international and national financial systems are needed to prevent a similar crisis from recurring

The present global reserve system is suffering from a number of systemic flaws

See, for example, Peter B. Clark and Jacques J. Polak, "International liquidity and the role of the SDR in the international monetary system", *IMF Staff Papers*, vol. 51, No. 1 (2004), pp. 49-71; United Nations, *World Economic and Social Survey 2005: Financing for Development* (United Nations publication, Sales No. E.05.II.C.1); Report of the Commission of Experts of the President of the United Nations General Assembly on Reforms of the International Monetary and Financial System, pp. 92-102, available at www.un.org/ga/president/63/interactive/financialcrisis/PreliminaryReport210509. pdf; Barry Eichengreen, *Out of the Box Thoughts about the International Financial Architecture*, IMF Working Paper WP/09/116 (Washington, D. C., May 2009); United Nations Conference on Trade and Development, *The Global Economic Crisis: Systemic Failures and Multilateral Remedies* (Geneva: UNCTAD, 2009); and José Antonio Ocampo, "Special drawing rights and the reform of the global reserve system", research paper for the Intergovernmental Group of Twenty-Four, October 2009, available at http://www.g24.org/jao0909.pdf.

High debt ratios or lack of external financing typically puts greater external pressure on deficit countries to adjust than on surplus countries. As demand contraction in the deficit country tends to take the more typical form of asymmetric adjustment, it can be called a deflationary bias. The second flaw relates to the instabilities associated with the use of a national currency as an international currency. For other countries to accumulate reserves, the reserve currency country must run an external deficit. Over time, this may lead to an undesirable level of external indebtedness of the reserve-currency country, followed by an erosion of confidence in the value of that currency. The risk of a strongly weakening dollar in the outlook is indeed associated with this systemic flaw of the global reserve system. The accumulation of vast amounts of foreign-exchange reserves by developing countries was a response to the perceived need for increased "self-protection" against pro-cyclical capital flows in the aftermath of the Asian crisis and other crises in emerging market economies. The response was logical in the absence of more adequate collective insurance mechanisms to manage balance-of-payments crises. However, by contributing at the same time to the problem of significantly widening global imbalances, related volatility and weakening of the value of the major reserve currency, the response itself became a factor leading to the present crisis and the instability of the system.

One way in which the system could naturally evolve would be by becoming a fully multi-currency reserve system. The present system already has more than one reserve currency, but the other currencies remain a secondary feature in a system where most reserve assets by far are held in United States dollars and where most of the world's trade and financial transactions are effected in the major reserve currency. The advantage of a multi-reserve currency arrangement is that it would provide countries with the benefit of diversifying their foreign-exchange reserve assets. However, none of the other deficiencies of the present system would be addressed.

A more viable option could be to pursue the transition to a reserve system based on a true form of international liquidity by expanding the role of SDRs. Doing so would, in fact, fulfil the objective included in the IMF Articles of Agreement of "making the special drawing right the principal reserve asset in the international monetary system" (Article VIII, Section 7, and Article XXII). The G20 decided in April 2009 on a general SDR allocation equivalent to \$250 billion in recognition of the need to boost international liquidity using an international reserve unit. Further steps forward could be to make SDR issuance automatic and regular and to link it to the demand for foreign-exchange reserves and the growth of the world economy. A key criterion for SDR issuance, withdrawal and allocation would be to provide counter-cyclical finance. In this way, both the key deficiencies of the present system, its deflationary bias and the inherent instability of the value of the reserve currency, could be overcome. An SDR-based reserve system would also provide a basis for a better pooling of international reserves, as international liquidity would be made available on a counter-cyclical basis, reducing the need for individual countries to hold costly amounts of reserves on their own.

Important practical hurdles will need to be overcome en route to such a system, and they will need to be discussed and addressed in conjunction with other reforms (see chapter III). As the global economy recovers, the world community should not lose sight of the systemic flaws which were at the root of the global economic and financial crisis in the first place. The sustainable rebalancing of the world economy will not be possible without addressing the systemic flaws in the international financial architecture.

A reserve system based on SDRs would address the key deficiencies of the current system

Appendix

Table A.I.1

Rates of growth of major countries and world regions under three model-based policy scenario simulations, a 2009–2015

Percentage							
	2009	2010	2011	2012	2013	2014	2015
World	'						
Early withdrawal of stimuli	-2.2	2.4	-0.8	0.8	1.5	2.0	2.4
Global imbalances, dollar devaluation and inflation	-2.2	4.8	3.0	1.8	2.1	2.5	2.4
International policy coordination	-2.2	2.4	4.4	5.1	5.2	5.2	5.1
United States							
Early withdrawal of stimuli	-2.5	2.1	-0.4	0.5	1.0	1.5	2.0
Global imbalances, dollar devaluation and inflation	-2.5	5.4	5.5	1.1	2.4	3.9	3.7
International policy coordination	-2.5	2.1	3.4	4.5	5.0	4.9	4.7
Western Europe							
Early withdrawal of stimuli	-4.1	0.5	-2.5	-0.6	0.4	1.0	1.5
Global imbalances, dollar devaluation and inflation	-4.1	2.4	0.6	1.9	1.5	0.8	0.3
International policy coordination	-4.1	0.5	2.5	3.5	3.7	3.5	3.4
Japan							
Early withdrawal of stimuli	-5.6	0.9	-1.8	-1.5	-1.0	-0.5	-0.3
Global imbalances, dollar devaluation and inflation	-5.6	4.5	0.4	-0.9	-0.2	1.1	1.6
International policy coordination	-5.6	0.9	3.9	3.3	2.3	2.5	2.2
Other developed economies							
Early withdrawal of stimuli	-1.2	2.1	-1.9	0.3	1.8	2.4	2.8
Global imbalances, dollar devaluation and inflation	-1.2	4.0	1.9	0.4	0.5	0.9	1.1
International policy coordination	-1.2	2.1	4.2	5.0	5.4	5.2	5.0
Commonwealth of Independent States							
Early withdrawal of stimuli	-6.7	1.7	-3.4	1.0	2.9	3.0	3.7
Global imbalances, dollar devaluation and inflation	-6.7	1.8	4.0	5.5	4.1	3.6	3.5
International policy coordination	-6.7	1.7	5.2	7.5	7.7	7.6	7.2
Western Asia							
Early withdrawal of stimuli	-1.0	3.6	-0.7	2.4	4.7	4.1	4.6
Global imbalances, dollar devaluation and inflation	-1.0	4.8	2.4	4.9	3.0	3.0	2.9
International policy coordination	-1.0	3.6	5.7	7.2	7.4	7.4	6.6
Newly industrialized East Asia							
Early withdrawal of stimuli	-2.6	3.7	-0.9	0.0	2.2	3.4	4.0
Global imbalances, dollar devaluation and inflation	-2.6	7.0	6.0	1.8	2.2	3.0	3.4
International policy coordination	-2.6	3.7	8.2	6.4	6.0	5.4	5.7
China							
Early withdrawal of stimuli	8.1	8.8	4.7	5.5	5.1	5.0	4.9
Global imbalances, dollar devaluation and inflation	8.1	9.4	5.1	5.4	4.7	4.7	4.2
International policy coordination	8.1	8.8	8.0	8.0	7.6	8.1	7.9
East Asia, middle-income, excluding China							
Early withdrawal of stimuli	-2.4	3.6	-1.8	2.0	3.9	4.6	5.2
Global imbalances, dollar devaluation and inflation	-2.4	4.7	2.1	1.7	2.0	2.7	3.0
International policy coordination	-2.4	3.6	5.0	6.3	6.6	7.3	7.6

Table A.I.1 (cont'd)	2000	2010	2011	2012	2012	2014	2015
	2009	2010	2011	2012	2013	2014	2015
India						1	
Early withdrawal of stimuli	5.9	6.5	2.9	3.8	4.4	4.6	4.8
Global imbalances, dollar devaluation and inflation	5.9	7.0	6.4	3.7	3.8	3.7	3.8
International policy coordination	5.9	6.5	10.2	10.4	10.8	10.6	10.5
South Asia, excluding India		ı			ı	T	
Early withdrawal of stimuli	4.8	2.3	0.6	2.9	4.0	4.4	4.8
Global imbalances, dollar devaluation and inflation	4.8	3.7	2.8	2.5	2.9	3.3	3.5
International policy coordination	4.8	2.3	6.8	8.0	8.7	8.7	8.7
East Asia, low-income							
Early withdrawal of stimuli	3.9	4.8	0.8	4.1	4.7	5.0	5.2
Global imbalances, dollar devaluation and inflation	3.9	4.8	3.9	2.1	1.9	2.1	2.0
International policy coordination	3.9	4.8	8.7	8.9	9.2	8.9	8.4
Mexico, Central America and the Caribbean							
Early withdrawal of stimuli	-6.4	2.9	-2.1	1.7	2.9	3.4	4.0
Global imbalances, dollar devaluation and inflation	-6.4	5.6	0.6	1.1	1.6	2.2	2.6
International policy coordination	-6.4	2.9	4.9	7.1	7.6	7.4	7.2
South America							
Early withdrawal of stimuli	-0.2	3.8	-1.0	1.5	2.0	2.1	2.5
Global imbalances, dollar devaluation and inflation	-0.2	4.6	0.9	1.4	1.4	1.5	1.5
International policy coordination	-0.2	3.2	4.8	5.5	5.9	6.1	5.8
Africa, middle-income							
Early withdrawal of stimuli	1.3	3.6	1.0	4.5	5.0	5.3	5.7
Global imbalances, dollar devaluation and inflation	1.3	5.3	3.5	4.4	4.0	4.0	3.9
International policy coordination	1.3	3.6	8.0	8.5	8.6	8.8	8.0
Africa, low-income							
Early withdrawal of stimuli	1.9	4.6	1.8	5.1	4.8	5.2	5.6
Global imbalances, dollar devaluation and inflation	1.9	7.0	2.5	4.2	3.5	3.6	3.6
International policy coordination	1.9	4.6	10.0	10.4	10.9	11.5	10.7
Memorandum items:							
Oil price, world average, USD per barrel							
Early withdrawal of stimuli	61.0	80.1	67.8	73.5	81.6	89.1	96.8
Global imbalances, dollar devaluation and inflation	61.0	95.7	109.5	126.5	147.5	167.5	178.2
International policy coordination	61.0	80.1	82.0	82.0	83.1	92.6	97.9
Primary commodity prices, world average, USD-denominated in	ndex						
Early withdrawal of stimuli	76.4	76.0	66.2	63.3	63.1	64.4	66.2
Global imbalances, dollar devaluation and inflation	76.4	82.6	96.0	105.6	112.9	118.3	118.8
International policy coordination	76.4	76.0	80.0	85.7	92.2	99.4	104.4
Growth of volume of world merchandise exports	1						
Early withdrawal of stimuli	-12.6	5.5	1.4	4.5	6.6	6.8	6.9
Global imbalances, dollar devaluation and inflation	-12.6	4.0	7.2	8.8	9.5	9.7	9.5
International policy coordination	-12.6	5.5	7.9	8.8	9.2	8.8	9.0

a See text for the assumptions underlying each scenario.

Table A.I.2

Current account of major countries and world regions under three model-based policy scenario simulations, a 2009-2015

Percentage of each country or region's GDP	2000	2010	2011	2012	2012	2014	2015
	2009	2010	2011	2012	2013	2014	2015
Jnited States							
Early withdrawal of stimuli	-4.1	-4.8	-4.2	-4.5	-4.9	-5.2	-5.4
Global imbalances, dollar devaluation and inflation	-4.1	-6.4	-5.3	-3.7	-2.2	-1.0	0.1
International policy coordination	-4.1	-4.8	-4.8	-4.5	-4.2	-4.1	-3.9
Western Europe							
Early withdrawal of stimuli	-0.6	-0.5	0.0	-0.1	-0.2	-0.3	-0.3
Global imbalances, dollar devaluation and inflation	-0.6	0.2	0.1	-0.5	-1.0	-1.4	-1.7
International policy coordination	-0.6	-0.5	-0.4	-0.2	0.0	0.1	0.4
apan							
Early withdrawal of stimuli	2.1	1.5	1.5	1.5	1.8	2.3	2.7
Global imbalances, dollar devaluation and inflation	2.1	2.0	0.8	0.1	-0.2	-0.2	0.0
International policy coordination	2.1	1.5	1.3	1.2	1.2	1.4	1.6
Other developed economies							
Early withdrawal of stimuli	-2.7	-2.5	-3.7	-3.7	-3.4	-3.2	-3.0
Global imbalances, dollar devaluation and inflation	-2.7	-2.1	-2.7	-3.3	-3.7	-4.1	-4.4
International policy coordination	-2.7	-2.5	-2.5	-2.3	-2.0	-1.7	-1.4
Commonwealth of Independent States		1					
Early withdrawal of stimuli	3.5	6.1	4.4	5.7	6.5	6.7	6.7
Global imbalances, dollar devaluation and inflation	3.5	8.5	6.9	5.7	5.4	5.4	5.0
International policy coordination	3.5	6.1	6.0	4.8	3.5	3.1	2.4
Western Asia	'						
Early withdrawal of stimuli	1.5	5.2	3.1	4.6	5.3	5.5	5.5
Global imbalances, dollar devaluation and inflation	1.5	7.5	6.1	5.0	4.9	4.8	4.2
International policy coordination	1.5	5.2	5.1	4.0	2.7	2.6	2.0
Newly industrialized East Asia		ı					
Early withdrawal of stimuli	7.1	4.8	7.2	7.9	7.9	7.3	6.4
Global imbalances, dollar devaluation and inflation	7.1	5.5	4.6	4.0	3.0	1.9	1.2
International policy coordination	7.1	4.8	4.3	4.4	4.4	4.1	3.9
China							
Early withdrawal of stimuli	10.8	10.7	9.4	7.9	6.6	5.5	4.6
Global imbalances, dollar devaluation and inflation	10.8	9.3	8.1	7.9	6.2	5.5	4.9
International policy coordination	10.8	10.7	9.6	8.2	6.7	5.3	3.9
East Asia, middle-income, excluding China	10.0	10.7	5.0	0.2	0.7	3.5	3.5
_	0.0	0.7	7.5	6.0	6.5	6.2	()
Early withdrawal of stimuli	9.0	8.7	7.5	6.8	6.5	6.3	6.2
Global imbalances, dollar devaluation and inflation	9.0	8.2	7.8	7.0	6.1 5.7	5.3	4.6
International policy coordination	9.0	8.7	7.8	6.8	5.7	4.7	3.9
ndia							
Early withdrawal of stimuli Global imbalances, dollar devaluation and inflation	-3.4	-4.1	-3.5	-3.9	-4.1	-4.2	-4.1
	-3.4	-5.1	-4.8	-4.6	-4.7	-4.8	-4.8

Table A.I.2 (cont'd)									
	2009	2010	2011	2012	2013	2014	2015		
South Asia, excluding India									
Early withdrawal of stimuli	-2.9	-3.3	-2.8	-3.0	-3.2	-3.1	-3.1		
Global imbalances, dollar devaluation and inflation	-2.9	-4.2	-3.4	-3.0	-3.0	-3.0	-3.0		
International policy coordination	-2.9	-3.3	-3.0	-2.3	-1.5	-1.2	-0.8		
East Asia, low-income									
Early withdrawal of stimuli	-1.3	-1.7	-2.9	-2.4	-1.3	-0.2	0.8		
Global imbalances, dollar devaluation and inflation	-1.3	-1.0	-1.3	-1.1	-0.4	0.2	0.6		
International policy coordination	-1.3	-1.7	-1.7	-1.3	-0.7	0.1	0.6		
Mexico, Central America and the Caribbean									
Early withdrawal of stimuli	-2.6	-2.7	-2.4	-2.0	-1.6	-1.5	-1.4		
Global imbalances, dollar devaluation and inflation	-2.6	-2.7	-2.3	-2.7	-3.1	-3.6	-4.0		
International policy coordination	-2.6	-2.7	-1.8	-1.3	-0.9	-0.9	-0.8		
South America									
Early withdrawal of stimuli	-0.5	-0.3	-1.2	-1.0	-0.6	-0.1	0.3		
Global imbalances, dollar devaluation and inflation	-0.5	0.2	-0.1	-0.4	-0.6	-0.6	-0.8		
International policy coordination	-0.5	-0.3	-0.2	0.0	0.1	0.3	0.4		
Africa, middle-income									
Early withdrawal of stimuli	-2.8	-2.6	-3.5	-1.9	-0.3	1.1	2.1		
Global imbalances, dollar devaluation and inflation	-2.8	-1.5	-1.7	-1.2	-0.2	0.7	1.3		
International policy coordination	-2.8	-2.6	-2.4	-2.2	-1.7	-0.7	0.0		
Africa, low-income									
Early withdrawal of stimuli	-3.3	-0.5	-2.2	-1.1	0.3	1.3	2.1		
Global imbalances, dollar devaluation and inflation	-3.3	1.4	0.5	0.2	0.6	1.1	1.2		
International policy coordination	-3.3	-0.5	-0.9	-1.6	-2.1	-1.9	-2.0		

a See text for the assumptions underlying each scenario.

Table A.I.3

Changes in policy interest rates,^a by country or region, under three model-based policy scenario simulations,^b 2010-2015

	2010	2011	2012	2012	2014	2015
	2010	2011	2012	2013	2014	2015
United States						
Early withdrawal of stimuli	19	193	101	-17	-64	-22
Global imbalances, dollar devaluation and inflation	202	275	111	60	41	-53
International policy coordination	19	103	175	232	150	32
Western Europe						
Early withdrawal of stimuli	15	214	68	-6	-11	39
Global imbalances, dollar devaluation and inflation	198	-71	25	96	105	0
International policy coordination	15	123	157	230	188	70
Japan						
Early withdrawal of stimuli	36	146	23	-29	-108	-49
Global imbalances, dollar devaluation and inflation	219	-111	-42	-12	14	-40
International policy coordination	36	116	154	95	86	-35
Other developed economies						
Early withdrawal of stimuli	20	209	39	-32	-40	32
Global imbalances, dollar devaluation and inflation	110	-21	-25	-4	11	-16
International policy coordination	20	120	174	229	149	53
Commonwealth of Independent States						
Early withdrawal of stimuli	139	-161	-468	63	104	124
Global imbalances, dollar devaluation and inflation	-378	-233	189	230	276	81
International policy coordination	139	280	-227	-14	94	-36
Western Asia						
Early withdrawal of stimuli	134	281	-90	-5	54	73
Global imbalances, dollar devaluation and inflation	68	204	47	57	72	-17
International policy coordination	134	72	179	199	127	52
Newly industrialized East Asia						
Early withdrawal of stimuli	15	221	24	-49	-78	16
Global imbalances, dollar devaluation and inflation	137	-16	11	27	19	-64
International policy coordination	15	86	172	221	114	-44
China						
Early withdrawal of stimuli	284	188	-41	18	-109	-5
Global imbalances, dollar devaluation and inflation	262	-100	92	73	49	29
International policy coordination	284	19	11	40	44	30
East Asia, middle-income, excluding China	'					
Early withdrawal of stimuli	-3	150	-67	-135	-109	8
Global imbalances, dollar devaluation and inflation	-78	-190	-120	-32	35	-3
International policy coordination	-3	-76	43	166	161	7
India	'		'			
Early withdrawal of stimuli	112	105	-55	-212	-238	-92
Global imbalances, dollar devaluation and inflation	146	-127	-130	-118	-96	-97
International policy coordination	112	-24	71	139	97	1

Table A.I.3 (cont'd)						
	2010	2011	2012	2013	2014	2015
South Asia, excluding India						
Early withdrawal of stimuli	4	94	-13	-136	-169	-27
Global imbalances, dollar devaluation and inflation	14	-167	-116	-60	-27	-12
International policy coordination	4	-32	77	159	113	37
East Asia, low-income						
Early withdrawal of stimuli	10	215	17	-85	-97	35
Global imbalances, dollar devaluation and inflation	-10	-25	-67	-71	-36	-17
International policy coordination	10	-5	147	137	109	47
Mexico, Central America and the Caribbean						
Early withdrawal of stimuli	46	103	-42	-106	-92	-30
Global imbalances, dollar devaluation and inflation	-86	-136	-90	-5	56	-35
International policy coordination	46	-92	94	267	247	28
South America						
Early withdrawal of stimuli	-42	125	-57	-85	-44	4
Global imbalances, dollar devaluation and inflation	110	-42	-233	-151	-61	-76
International policy coordination	-42	69	118	192	63	7
Africa, middle-income						
Early withdrawal of stimuli	-1	297	-33	-151	-171	-33
Global imbalances, dollar devaluation and inflation	3	19	-75	-51	-28	-54
International policy coordination	-1	71	141	200	99	3
Africa, low-income						
Early withdrawal of stimuli	66	257	-6	-35	-37	80
Global imbalances, dollar devaluation and inflation	60	-23	-75	14	66	50
International policy coordination	66	-100	207	191	29	12

 $\textbf{Source:} \ \mathsf{UN/DESA} \ \mathsf{Global} \ \mathsf{Policy} \ \mathsf{Model}.$

a Regional rates are weighted by GDP.

b See text for the assumptions underlying each scenario.

Table A.I.4 Ex ante fiscal stimuli, by major country or region, under three model-based policy scenario simulations, a 2008-2015

Percentage of GDP						
	Estimated effective stimuli 2008-2010	2011	2012	2013	2014	2015
United States						
Early withdrawal of stimuli	5.4	-2.3	-1.7	-1.2	-0.9	-0.7
Global imbalances, dollar devaluation and inflation	5.6	0.2	-1.7	-1.8	-1.4	-1.2
International policy coordination	5.4	0.3	0.2	0.1	0.0	0.0
Western Europe						
Early withdrawal of stimuli	2.1	-1.7	-1.3	-1.0	-0.7	-0.5
Global imbalances, dollar devaluation and inflation	2.2	0.2	0.1	-0.1	-0.7	-1.1
International policy coordination	2.1	0.3	0.1	0.1	0.0	0.0
Japan						
Early withdrawal of stimuli	4.0	-1.6	-1.2	-0.9	-0.7	-0.5
Global imbalances, dollar devaluation and inflation	4.0	0.2	0.1	0.0	0.0	0.0
International policy coordination	4.0	0.2	0.1	0.0	0.0	0.0
Other developed economies						
Early withdrawal of stimuli	2.6	-2.1	-1.5	-1.2	-0.9	-0.6
Global imbalances, dollar devaluation and inflation	2.6	0.3	0.2	0.1	0.0	0.0
International policy coordination	2.6	0.3	0.2	0.1	0.0	0.0
Commonwealth of Independent States						
Early withdrawal of stimuli	2.5	-1.3	-1.0	-0.8	-0.6	-0.4
Global imbalances, dollar devaluation and inflation	2.5	0.4	0.2	0.1	0.0	0.0
International policy coordination	2.5	0.6	0.5	0.6	0.7	0.7
Western Asia						
Early withdrawal of stimuli	3.6	-0.4	-0.3	-0.2	-0.2	-0.1
Global imbalances, dollar devaluation and inflation	3.6	0.2	0.1	0.0	0.0	0.0
International policy coordination	3.6	0.5	0.6	0.6	0.6	0.6
Newly industrialized East Asia						
Early withdrawal of stimuli	3.7	-2.1	-1.6	-1.2	-0.9	-0.7
Global imbalances, dollar devaluation and inflation	3.7	0.5	0.0	0.1	0.0	0.0
International policy coordination	3.7	0.5	0.0	0.1	0.0	0.0
China						
Early withdrawal of stimuli	9.3	0.0	0.0	0.0	0.0	0.0
Global imbalances, dollar devaluation and inflation	9.3	0.8	0.4	0.2	0.0	0.0
International policy coordination	9.3	0.8	0.4	0.2	0.0	0.0
East Asia, middle-income, excluding China						
Early withdrawal of stimuli	3.1	-1.6	-1.2	-0.9	-0.7	-0.5
Global imbalances, dollar devaluation and inflation	3.1	0.4	0.2	0.1	0.0	0.0
International policy coordination	3.1	1.0	1.0	1.2	1.2	1.3
India						
Early withdrawal of stimuli	6.4	0.0	0.0	0.0	0.0	0.0
Global imbalances, dollar devaluation and inflation	6.4	0.7	0.4	0.2	0.0	0.0
International policy coordination	6.4	1.0	1.1	1.1	1.1	1.1

Table A.I.4 (cont'd)						
	Estimated effective stimuli 2008-2010	2011	2012	2013	2014	2015
South Asia, excluding India						
Early withdrawal of stimuli	0.9	0.0	0.0	0.0	0.0	0.0
Global imbalances, dollar devaluation and inflation	0.9	0.0	0.0	0.0	0.0	0.0
International policy coordination	0.9	1.3	1.3	1.4	1.5	1.5
East Asia, low-income						
Early withdrawal of stimuli	1.4	-0.1	-0.1	-0.1	-0.1	0.0
Global imbalances, dollar devaluation and inflation	1.4	0.0	0.0	0.0	0.0	0.0
International policy coordination	1.4	1.2	1.3	1.3	1.2	1.2
Mexico, Central America and the Caribbean						
Early withdrawal of stimuli	1.3	-0.9	-0.7	-0.5	-0.4	-0.3
Global imbalances, dollar devaluation and inflation	1.3	0.0	0.0	0.0	0.0	0.0
International policy coordination	1.3	0.7	0.7	0.8	0.9	0.8
South America						
Early withdrawal of stimuli	0.8	-0.5	-0.4	-0.3	-0.2	-0.2
Global imbalances, dollar devaluation and inflation	0.8	0.0	0.0	0.0	0.0	0.0
International policy coordination	0.8	0.7	0.7	0.8	0.8	0.8
Africa, middle-income						
Early withdrawal of stimuli	0.9	0.0	0.0	0.0	0.0	0.0
Global imbalances, dollar devaluation and inflation	0.9	0.0	0.0	0.0	0.0	0.0
International policy coordination	0.9	1.0	1.0	1.0	1.0	1.0
Africa, low-income						
Early withdrawal of stimuli	0.9	0.0	0.0	0.0	0.0	0.0
Global imbalances, dollar devaluation and inflation	0.9	0.0	0.0	0.0	0.0	0.0
International policy coordination	0.9	1.3	1.4	1.5	1.4	1.5

 ${\bf a}\quad \mbox{See} \mbox{ text for the assumptions underlying each scenario.}$

Table A.I.5
Estimated government debt of major countries and world regions under three model-based policy scenario simulations, a 2009-2015

Percentage of each country or region's GDP							
	2009	2010	2011	2012	2013	2014	2015
United States							
Early withdrawal of stimuli	76.5	88.4	97.1	102.7	106.3	107.2	106.6
Global imbalances, dollar devaluation and inflation	76.5	86.9	89.4	88.2	85.4	81.5	76.9
International policy coordination	76.5	88.4	95.7	97.1	93.9	88.5	83.2
Western Europe	'						
Early withdrawal of stimuli	77.1	90.8	103.9	114.5	122.4	125.9	126.6
Global imbalances, dollar devaluation and inflation	77.1	89.9	100.4	106.1	108.6	109.1	110.0
International policy coordination	77.1	90.8	100.0	103.1	101.0	96.6	92.0
Japan							
Early withdrawal of stimuli	180.2	192.4	209.2	224.6	240.7	254.4	267.1
Global imbalances, dollar devaluation and inflation	180.2	189.1	203.4	213.2	223.4	230.3	234.2
International policy coordination	180.2	192.4	202.6	202.7	198.3	193.3	190.5
Other developed economies							
Early withdrawal of stimuli	62.8	68.1	74.1	79.1	82.7	83.3	82.1
Global imbalances, dollar devaluation and inflation	62.8	67.1	71.1	74.6	78.5	82.4	86.4
International policy coordination	62.8	68.1	70.8	70.0	66.4	61.7	57.3
Commonwealth of Independent States						,	
Early withdrawal of stimuli	43.6	48.1	55.7	64.6	73.5	78.6	80.7
Global imbalances, dollar devaluation and inflation	43.6	49.4	64.9	75.7	81.2	82.3	81.6
International policy coordination	43.6	48.1	54.1	58.1	59.7	58.6	56.4
Western Asia							
Early withdrawal of stimuli	39.3	35.5	35.7	34.9	34.3	33.3	32.1
Global imbalances, dollar devaluation and inflation	39.3	35.0	37.9	38.6	38.7	38.2	38.2
International policy coordination	39.3	35.5	32.4	29.7	27.7	25.9	25.4
Newly industrialized East Asia							
Early withdrawal of stimuli	15.4	16.4	16.9	17.4	18.3	19.1	19.8
Global imbalances, dollar devaluation and inflation	15.4	16.7	17.3	17.1	19.2	22.3	24.7
International policy coordination	15.4	16.4	17.5	17.8	18.0	18.1	18.4
China							
Early withdrawal of stimuli	23.2	28.7	35.7	45.0	55.4	65.3	74.7
Global imbalances, dollar devaluation and inflation	23.2	30.8	48.0	64.4	79.6	92.5	103.5
International policy coordination	23.2	28.7	35.8	43.9	52.2	59.6	65.0
East Asia, middle-income, excluding China							
Early withdrawal of stimuli	47.6	51.5	56.9	62.2	66.6	67.4	65.5
Global imbalances, dollar devaluation and inflation	47.6	52.4	65.1	75.8	84.7	90.3	93.4
International policy coordination	47.6	51.5	55.2	56.8	57.1	56.0	54.0
India							
Early withdrawal of stimuli	51.2	51.9	53.3	56.4	60.0	62.7	64.5
Global imbalances, dollar devaluation and inflation	51.2	53.4	59.4	65.1	70.7	75.8	79.8
International policy coordination	51.2	51.9	51.2	49.3	46.3	43.7	41.5

Table A.I.5 (cont'd)							
	2009	2010	2011	2012	2013	2014	2015
South Asia, excluding India	·						
Early withdrawal of stimuli	48.3	47.8	49.0	51.1	52.9	53.5	53.0
Global imbalances, dollar devaluation and inflation	48.3	48.7	51.2	53.9	56.3	58.0	58.9
International policy coordination	48.3	47.8	47.2	45.6	43.1	40.7	38.8
East Asia, low-income							
Early withdrawal of stimuli	28.6	27.2	26.4	24.4	21.8	18.7	15.5
Global imbalances, dollar devaluation and inflation	28.6	27.5	28.7	28.9	28.6	27.9	27.0
International policy coordination	28.6	27.2	23.9	19.6	15.4	12.1	11.1
Mexico, Central America and the Caribbean							
Early withdrawal of stimuli	32.2	37.8	45.4	51.6	56.5	58.4	58.8
Global imbalances, dollar devaluation and inflation	32.2	37.0	44.2	49.8	55.0	58.5	61.2
International policy coordination	32.2	37.8	42.6	43.9	42.5	39.6	36.9
South America							
Early withdrawal of stimuli	52.5	56.0	61.5	66.5	71.1	73.9	75.4
Global imbalances, dollar devaluation and inflation	52.5	55.5	62.4	68.3	73.8	77.9	81.1
International policy coordination	52.5	56.0	58.7	59.5	59.1	57.5	55.9
Africa, middle-income							
Early withdrawal of stimuli	38.4	34.6	31.4	32.7	34.2	35.3	36.3
Global imbalances, dollar devaluation and inflation	38.4	34.8	38.8	41.1	41.9	41.4	40.3
International policy coordination	38.4	34.6	32.1	33.1	33.5	33.9	34.0
Africa, low-income							
Early withdrawal of stimuli	67.2	69.2	71.2	68.5	63.8	57.6	51.4
Global imbalances, dollar devaluation and inflation	67.2	67.6	70.3	68.7	65.4	60.8	56.5
International policy coordination	67.2	69.2	66.2	59.4	51.3	43.7	38.5

a See text for the assumptions underlying each scenario.