

## Overview

The release of this year's *Global Economic Prospects* finds the world economy at a crossroads. Markets all over the world are engulfed in a global economic crisis, with stock markets sharply down and volatile, almost all currencies having depreciated substantially against the dollar, and risk premiums on a wide range of debt having increased by 600 or more basis points. Commodity markets too have turned a corner. Following several years of increase, prices have plummeted, and although well above their 1990s levels, they have given up most of the increases of the past 24 months.

Chapter 1 of this report examines the medium-term implications of this crisis for developing-country growth, inflation, and world trade. Chapter 2 looks at longer-term supply and demand prospects in commodity markets. It takes into account the long-term growth prospects of developing countries and their rising share in world GDP (gross domestic product), the declining quality of new pools of resources, and the influence of technology on both demand and supply. Finally, chapter 3 reports on the poverty impacts of high commodity prices and examines the effectiveness of policies in both producing and consuming countries in dealing with the challenges posed by periodic bouts of high commodity prices.

This report does not deal with water, fish, or timber, all commodities of critical importance to developing countries and the globe but which fall outside the scope of this report either because of their public-goods character or, in the case of timber, because of its treatment in a recent report (World Bank 2007).

### *The global financial crisis threatens short-term prospects in developing countries*

The banking crisis that erupted in September 2008, following more than a year of less acute financial turmoil, has substantially reinforced the cyclical downturn that was already under way. Following the insolvency of a large number of banks and financial institutions in the United States, Europe, and the developing world, financial conditions have become much tighter, capital flows to developing countries have dried up, and huge amounts of market capitalization have evaporated.

The crisis began in high-income countries, but developing countries have been caught up in its wake. As of mid-November, developing-country equity markets had given up almost all of their gains since the beginning of 2008 and initial public offerings had disappeared. Risk premiums, which had risen to more than 800 basis points on sovereign bonds and 1,000 on commercial debt, have declined but remained well above 600 basis points in every developing region. As corporate bonds had been one of the most important source of developing-country finance, these developments suggest that a sharp slowing in developing-country investment growth is to be expected. Bank lending and foreign direct investment inflows were also down, but less dramatically. The increased volatility and losses emanating from the banking sector have caused investors worldwide to sell stocks and increase their holdings of less risky assets, notably U.S. treasuries. As a result, the currencies of virtually every developing country in the world has depreciated vis-à-vis the dollar.

Following a series of efforts by central banks and governments to resolve the growing crisis through liquidity injections and various ad hoc measures, policy makers have now acted forcefully to restore confidence in the international banking system, including the partial nationalization of nine banks and trillions of dollars in rescue plans introduced by governments in the United States and Europe and recent multilateral meetings to address weaknesses in the global financial architecture. At the time of this writing (November 20, 2008), it is too soon to judge the effectiveness of these measures in restoring confidence in the banking system. However, they do constitute the kind of forceful and credible action that has been needed, and interbank lending rates have fallen substantially and although they remain volatile, stock and bond markets have greeted these measures favorably.

Notwithstanding these steps, growth prospects for both high-income and developing countries have deteriorated substantially, and the possibility of a very deep global recession cannot be ruled out.

Even before the emergence of a full-blown financial crisis in September 2008, global growth showed significant weakening. Economic growth slowed sharply in Europe and Japan and in many developing countries in the second quarter of 2008. In the United States, the continued disruption in financial markets and the fall in housing prices caused domestic demand to fall in 6 of the past 12 quarters. However, strong export growth—driven in part by developing-country import demand—spared the U.S. economy from recession until recently when its GDP declined 0.5 percent in the third quarter of 2008. In developing countries, overall GDP growth also remained robust in the first half of the year. However, slower growth in high-income countries and the weakening of capital inflows, in combination with commodity-price-induced losses in real income, generated a sharp deceleration in industrial production, investment, and international trade beginning in the third quarter.

At the same time, rising commodity prices and tight capacity in many countries (following years of very fast growth fueled by ample liquidity) caused both headline and core inflation to pick up throughout the world, with headline inflation rising by some 5 percentage points among developing countries. Weaker growth and falling commodity prices have already caused inflationary pressures to ease in some countries. However, the significant losses in real income endured by many people in developing countries and the still overheated state of some of their economies could generate second-round price increases that either push inflation higher or stabilize expectations at high levels.

The combination of a relatively strong first half and a much weaker second half is expected to cause GDP growth to slow to 1.3 percent in high-income countries and to 6.3 percent in developing countries in 2008. The slowdown is projected to intensify in 2009 because most of the real-economy side effects of the banking crisis will be felt in the final months of 2008 and the first two quarters of 2009.

The main mechanism for the slowdown in both developing and high-income countries will be through investment, which for 2009 is expected to decline 3.1 percent in high-income countries. In developing countries, investment growth is projected to slow sharply to 3.4 percent in 2009 from more than 13 percent in 2007. Because low-income countries have less access to international capital markets, the slowdown will affect them mainly through indirect mechanisms, including slower global growth, lower commodity prices, slackening remittance receipts, and partial scaleback in aid flows.

Overall global GDP growth is projected to decline to 0.9 percent in 2009, with developing economies expanding by 4.5 percent—well below the 7.9 percent growth rate recorded in 2007. International trade should decelerate sharply, with global export volumes declining for the first time since 1982. As a result, both commodity prices and inflation are projected to ease, with oil prices averaging about \$75 a barrel in 2009 and food prices projected to

decline by about 23 percent compared with their average for 2008.

This financial crisis and the expected abrupt slowing of global growth come at a moment when developing countries considered as a whole are more vulnerable than they have been in the recent past. Higher commodity prices have raised the current account deficits of many oil-importing countries to worrisome levels (they exceed 10 percent of GDP in about one-third of developing countries), and after having increased substantially, the international reserves of oil-exporting developing countries are now declining as a share of their imports. Moreover, inflation is high, and fiscal positions have deteriorated both for cyclical reasons and because government spending has increased to alleviate the burden of higher commodity prices.

Thus, even in the baseline scenario, where the rapid equity declines of September and October are assumed to end and where credit begins to thaw as recent policy actions improve financial market confidence, a number of developing countries are likely to be subjected to substantial strains, possibly including bank failures and currency crises. In these very uncertain circumstances, policy makers must place a premium on reducing the likelihood of domestic turmoil, by reacting swiftly and forcefully to emerging difficulties, including, if necessary, seeking assistance from the International Monetary Fund (IMF).

#### *Uncertainty continues to cloud the outlook*

While this sober outlook represents a likely outcome, a wide range of outcomes remains possible. The financial turmoil could intensify further, sparking a prolonged credit crunch and global recession. A milder downturn is also possible, if credit conditions do not deteriorate as much as anticipated in the baseline.

At the time of this writing, the possibility that the situation in high-income countries will deteriorate substantially cannot be ruled out. Should credit markets fail to respond to the robust policy interventions taken so far, the consequences for developing countries could be

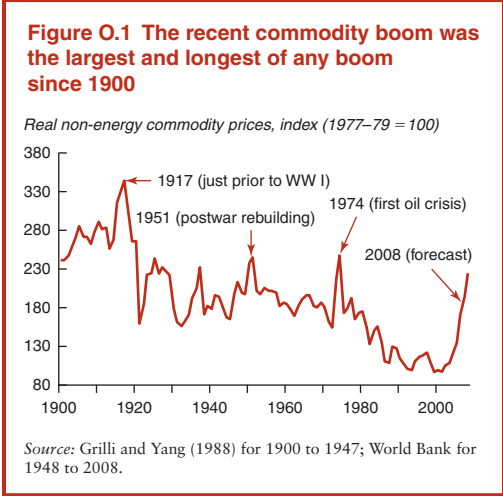
very serious. Global financing conditions would deteriorate rapidly, and apparently sound domestic financial sectors could find themselves unable to borrow or unwilling to lend—both in international and domestic markets. Such a scenario would be characterized by a long and profound recession in high-income countries and substantial disruption and turmoil, including bank failures and currency crises, in a wide range of developing countries. Sharply negative growth in a number of developing countries and all of the attendant repercussions, including increased poverty and unemployment, would be inevitable.

Although a receding concern, high inflation in developing countries, remains a problem, especially if the financial turmoil is resolved relatively quickly. While global growth would still slow in 2009 under such a scenario, the substantial policy stimulus that has been introduced could cause growth in both developing and developed countries to surge in 2010, reigniting inflationary pressures and forcing a subsequent tightening of policy and a second bout of slowing growth. Policy in countries that currently have large current account deficits and high inflation needs to be particularly vigilant. These economies continue to be vulnerable and investors skittish; under these conditions, their currencies are likely to remain particularly sensitive to changing market perceptions.

#### *The commodity market boom has come to an end*

The sharp rise in commodity prices over the past five years, like the earlier booms of the last century, was associated with a period of strong economic growth (partly fueled by relatively loose fiscal and monetary policy) and a period of global uncertainty, and it has generated significant inflationary pressures. This most recent boom has been the most marked of the past century in its magnitude, duration, and the number of commodity groups whose prices have increased (figure O.1).

The strength and duration of the boom mainly reflected the resilience of GDP growth between 2003 and 2008.



In the oil and metals sector, the supply pressures that built up over the past five years and which drove prices to record heights stemmed mainly from slow-growing supply capacity. That slow growing supply capacity resulted because for much of the 1990s rising demand in the rest of the world was met by the slow reabsorption of idle capacity created following the 1980 oil shock and the collapse of demand in the former Soviet bloc when these formerly communist countries began to allocate resources according to market signals. As a result of this idle capacity, prices remained low in the oil and metals sectors and firms did not have the economic incentives to increase productive capacity.

Furthermore, because of low prices and because incremental demand was being met by this capacity, investment in the oil and metals industries plummeted, and the sectors that supplied the inputs necessary for exploration and exploitation atrophied. That in turn created a mismatch between the underlying rate of growth of supply capacity and demand. When the spare capacity was exhausted in the early 2000s, supply was no longer able to keep pace with strengthening demand, and prices began to rise.

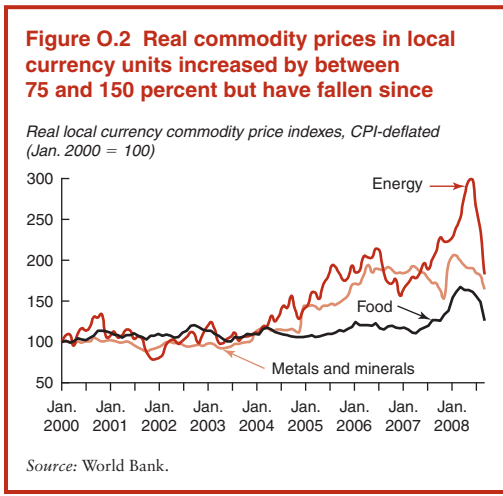
The story in agricultural markets is different. Food-based demand for agricultural crops has been relatively stable. However, diversion of food crops toward biofuel production has increased sharply. Between 2003 and 2007,

two-thirds of the global increase in maize production went to biofuels. Although the initial impact was confined to the maize market, as farmers switched land away from wheat and soybean production to grow maize, the price of these commodities also began to rise. Higher oil and fertilizer prices also increased food production costs, especially in high-income countries where they can account for as much as 30 percent of overall costs. This factor, plus biofuel demand for grains, has made the price for these products much more sensitive to changes in oil prices. Finally, a series of poor wheat crops in Australia compounded the situation, driving down stocks and contributing to the price rise.

In addition to these fundamental drivers, agricultural prices have been influenced both by increased investor interest in these commodities as an asset class and by government policies, including the decision by several countries to impose export bans. All of these factors are driven by forward-looking expectations and may have exacerbated both the upward rise in prices during 2007–08 and their more recent decline.

**Commodity prices are declining in response to slower GDP growth**

Like earlier commodity booms, this one has come to an end. Prices in all commodity markets have fallen sharply since July 2008 (figure O.2),



reflecting slower GDP growth, increased supplies and revised expectations. Because commodity prices reflect forward-looking expectations, the sharp slowing of growth that is expected over the next year has caused prices to decline rapidly even though the underlying supply and demand tensions are little changed from just a few months ago when these prices were close all-time highs.

Some metals prices have already fallen to pre-boom levels and the dollar price of many internationally traded foods has fallen back to their 2006 levels. While much weaker GDP growth is projected to cause commodity prices to ease further in the short run, they should nevertheless remain higher than they were during the 1990s. Real food prices are projected to decline by 26 percent between 2008 and 2010, energy prices to fall by 27 percent, and metals prices to decline by 32 percent.

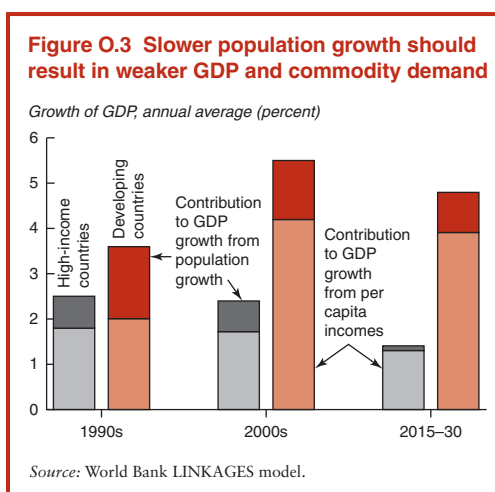
***In the longer term, growth in the demand for commodities should ease***

The strength, breadth (in terms of the number of commodities whose prices have increased), and duration of the current commodity boom have prompted speculation that the global economy is moving into a new era characterized by relative shortage and permanently higher (and even permanently rising) commodity prices.

This outcome does not appear likely. Over the next two decades, slower population growth and weaker (though still strong) income growth are projected to cause trend global GDP growth to ease (figure O.3) and, with it, the demand for commodities. As discussed later, the extent to which commodity demand does slow and how easily supply is able to keep pace with demand will very much depend on the policy environment, the pace of technological change, and external factors such as climate change.

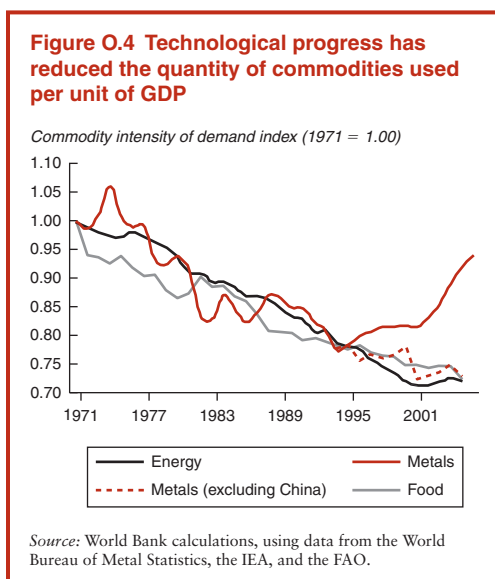
***Moderating demand for metals depends critically on increased efficiency in China***

Over the past 50 years, a combination of conservation measures, technological change, and changes in the structure of global GDP (services tend to be less commodity-intensive than



manufactured goods) has reduced the quantity of metals and energy required to produce a unit of GDP by an average of 0.9 and 0.8 percent a year respectively (figure O.4). The food intensity of GDP has also declined as an increasing share of the world's population has reached income levels where per person demand for basic food commodities is stable.

Beginning in the middle 1990s, the decline in metals intensities began to reverse. That reversal is explained almost entirely by increasing metal intensities in China, which began



in 1995 and grew even more sharply at the beginning of the 2000s. The uptick in metals intensities was associated with the investment, manufacturing, and export booms in that country. Currently, metal intensity in China is four times higher than in developed countries and twice as high as in other developing countries. China's metal intensities are expected to stabilize in coming years and then begin to fall as the country's very high investment rate declines and the transitional shift in global manufacturing capacity from high-income countries to China slows.

Assuming China's metal intensity stabilizes and then falls in coming years, global demand for metals—which has outpaced GDP in recent years—should first realign itself with GDP growth over the next few years and then decline further during the next decade, reaching about 2.7 percent a year in the period 2015–30.

*Future energy demand depends on improving automobile efficiency*

Demand in the energy sector will depend critically on the pace at which energy efficiency continues to improve, especially in the transport sector. Since 1970 conservation efforts and technological progress have reduced energy demand by 56 percent, compared with a no-change scenario (IEA 2006). With some 75 percent of future energy demand expected to come from the transport sector, especially from developing countries, the pace of future energy demand growth (and its composition) will depend heavily on future efficiency gains in car technology.

Prospects for such improvements are good, if policy continues to be supportive of both conservation and efficiency measures. Already existing technologies—available either in initial rollout phases or as prototypes (flex-fuel and hybrid cars, plug-in hybrids, and electric and hydrogen-powered vehicles)—could help to more than double fuel efficiency. An ambitious (and successful) policy to speed the development and diffusion of these technologies could see the share of these vehicles rise to 90 percent in the high-income world and to

75 percent in developing countries by 2050, substantially reducing private transportation's dependency on liquid fuels.

In the baseline scenario, demand for oil is expected to continue rising to around 114 million barrels a day (mb/d) by 2030 (compared with 87 mb/d today). Energy demand is projected to grow somewhat more quickly as coal, natural gas, and non-fossil-fuel energy sources increase their share in total energy supply. The extent to which this shift occurs will depend importantly on the policy environment. A more proactive stance toward restraining carbon emissions could speed the pace at which alternative energies become economically viable and reduce the expected increase in reliance on coal-powered electrical plants.

*Over the next 20 years, supplies of extracted commodities are likely to remain ample*

The pace at which the growth in supply capacity in the oil and metals sectors catches up to demand will depend on how quickly capacity in the heavy and specialized equipment and labor supply sectors can be restored. Years of low prices and weak investment have reduced capacity in these sectors, and as a result, delivery times and costs of inputs have more than quadrupled in many instances. High prices for these components are speeding the alleviation of these constraints. With the expected slowing of global GDP growth and lower commodity prices, investment demand has eased and prices for these specialized investment goods are expected to fall further. Nevertheless, deliveries are projected to continue trailing demand for some time, and prices will remain relatively high for the next several years.

Over the longer run, the price of extracted commodities should fall—although they are not expected to fall to their levels in the 1990s. Higher prices than in the past will be required to ensure that firms continue to invest in new capacity.

Although the absolute quantity of fossil fuels and metals in the earth's crust is declining and the quantity that is extracted each

year is rising, there appears little likelihood that the world will run out anytime soon. Historically, proven reserves of both metals and oil have tended to rise even more rapidly than production, remaining surprisingly constant in the case of oil at about 40 years of production. In part, that is because measured reserves, rather than being an accurate count of the resources remaining in the ground, bear a closer resemblance to the inventory of product that firms can readily bring to the market. So long as firms have ample “known reserves” for expected future demand, they have little incentive to find more.

As production increases and more known reserves are brought into service, additional reserves will likely be discovered. In general, these newer reserves tend to be of lower quality and higher cost than existing ones. However, historically improvements in extraction technology have advanced quickly enough to keep the cost of exploiting new sources stable or even falling, despite increased remoteness and poorer quality. The projected long-term price of a barrel of oil of \$75 (real 2008 dollars) is based on the expectation that such a price will be sufficient to incite additional output from high-cost sources such as the Canadian oil sands.

Even if certain resources do become scarce, ample alternatives exist. For example, if the pace at which new oil reserves are discovered declines, the rising price for oil will make alternative sources of energy (including coal, natural gas, nuclear, and renewable alternatives) more competitive and induce increased conservation and technological change. Simulations suggest that if oil production fails to rise between now and 2030, oil prices might double but most of the energy shortfall would be met by increased coal and natural gas consumption—albeit at higher cost.

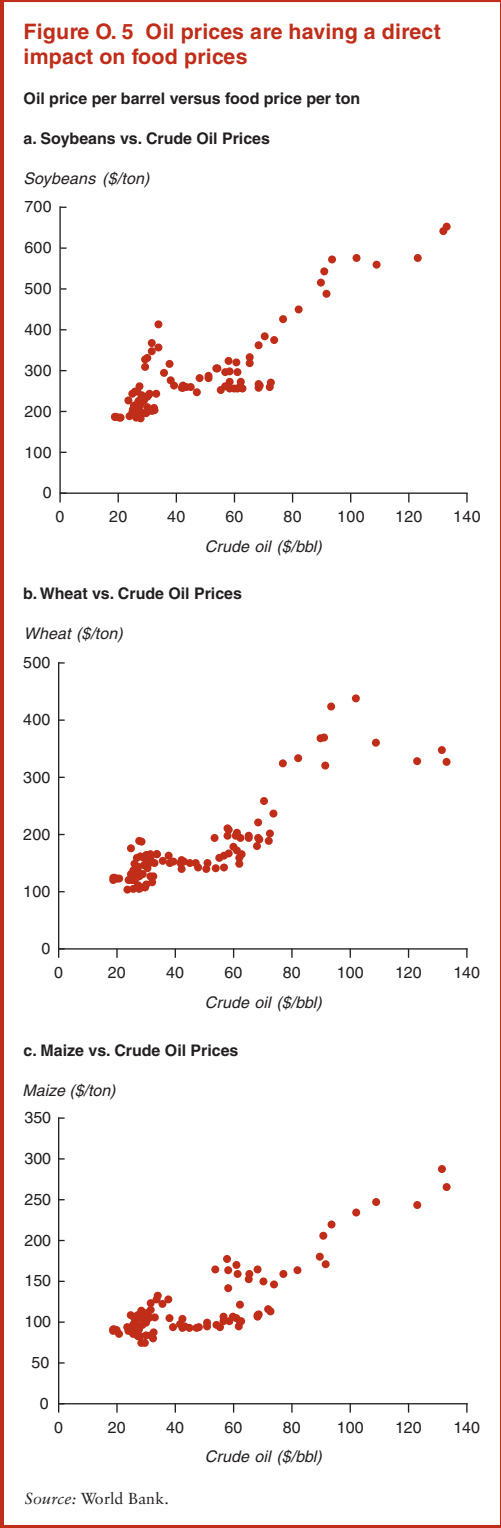
***Food demand will slow with lower population growth, but biofuels could expand crop demand very rapidly***

Because an increasing share of the world's population has reached income levels where

demand for most primary food commodities no longer rises with income, demand for food is expected to slow—broadly in line with weaker population growth. However, the potential role of biofuel demand for food crops greatly complicates the picture. Given today's technology, maize can be profitably transformed into ethanol at oil prices in excess of \$50 a barrel. Above that price, every percentage point increase in the barrel price of oil causes maize price to rise by 0.9 percent (figure O.5), which means the maize market is effectively tied to the oil market (this relationship is not statistically significant when oil is below \$50 a barrel). Moreover, because farmers have responded to high maize prices by increasingly growing maize in fields where they once grew wheat and soybeans, prices of these (and other) commodities have also become increasingly sensitive to oil prices.

Given that the energy market is much larger than the market for maize (if all the world's maize were used to produce biofuels, it would only meet 8 percent of energy demand), biofuel demand has the potential to change permanently the nature (and price) of agricultural commodities. The International Energy Agency (IEA), for example, suggests that biofuel demand for grains could increase by 7.8 percent a year over the next 20 years (compared with 1.2 percent annual increases for food demand). If this prognosis is borne out, 40 percent of global grain production could be going to biofuels by 2030.

It is probably premature to argue that the nature of these markets is permanently changed. On the one hand, technological improvements are likely to lower the cost of producing ethanol from maize (and sugar), which in turn will lower the threshold oil price above which these food crops become sensitive to oil prices. However, technological change may also give rise to alternative sources of energy that make ethanol production from food crops uneconomic. Such alternatives might include biofuels made from cellulose or other nonfood sources, solar power, or hydrogen-based systems. In these cases, the



new, stronger connection that has been created between the energy market and the grain markets would be broken, and food prices would likely fall significantly.

***Strong productivity growth and unused crop land should ensure adequate food supply at the global level***

Food supplies are unlikely to fall short of demand. Over the past 30 years, agricultural productivity has improved much faster than demand; as a result, agricultural output has increased rapidly even as the share of agricultural workers in total employment has steadily declined and prices fallen.

Longer-term prospects are somewhat clouded by the gradual exhaustion of the easy productivity gains offered by the green revolution. In addition, climate change threatens yields in many developing countries, although most of this effect is not likely to be felt until after 2030. Assuming that policies are put in place to expand infrastructure and facilitate the diffusion of the new technologies (including biotechnologies) that have sustained agricultural productivity in high-income countries, agricultural output should more than keep pace with food demand over the long term.

However, if developing countries are not successful in combating recent trends for yields to decline by increasing investment in rural agriculture and through the spread and adoption of more productive seed varieties and farming techniques, there is a real risk that many countries, notably in Africa (where population growth is expected to be faster), will move from a position of being broadly self-sufficient in food to being net food importers. Most of the shortfall would be met by production from high-income countries, where productivity growth has not slowed.

Even if biofuel demand increases substantially, enormous potential exists for bringing additional (albeit lower productivity) land into cultivation. That said, if biofuel-related demand for crops is much stronger or productivity performance disappoints, future food supplies may be much more expensive than in the past.

Simulations suggest that under these unfavorable circumstances, food crop prices could be as much as 30 percent higher than in the baseline scenario.

***Commodity-producing countries are managing the revenue windfall better than they have in the past***

Historically, countries whose economies are heavily dependent on commodities exports have tended to grow less quickly than those with more diverse economies. This tendency mainly reflects low GDP and underdevelopment of their nonresource sectors rather than the actual quantity of resources held by these countries. Indeed, measured by per capita value-added from resources, high-income countries tend to be more resource rich than developing countries, while their large nonresource sectors mean they are also less resource dependent (figure O.6).

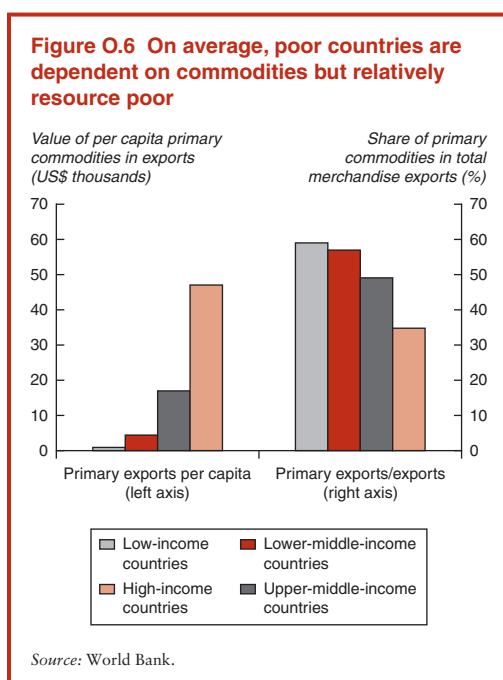
Resource dependence need not result in slow growth. But to realize the potential of resource wealth, governments need to avoid following policies that exacerbate the tendency

for resource dependence to generate poor growth outcomes. These include:

- The tendency for government spending in resource-dependent countries to rise in booms and fall procyclically during busts;
- The tendency for strong revenue inflows to cause an excessive real appreciation of the currency that hurts the competitiveness of the nonresource sectors of the economy; and
- The tendency for large commodity-based revenues to foster rent-seeking behavior, corruption, and even political violence.

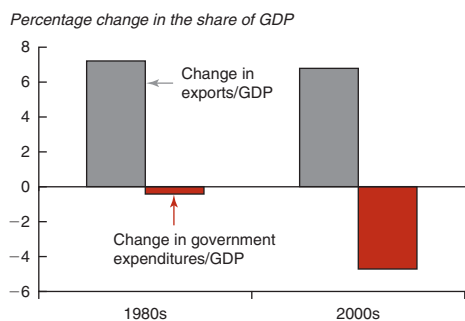
Encouragingly, during the course of the recent commodity boom, fiscal spending in resource-dependent developing countries has been much more prudent than during earlier booms. Partly as a result, the currencies of most countries have appreciated by less than in the past. Moreover, corruption among commodity exporters has improved relative to diversified exporters (figure O.7), suggesting that perhaps this mechanism for reducing the development potential of resource wealth has been weakened as well.

Exceptions include newly independent commodity exporters or states with newly found resource wealth. Government spending in these countries has kept pace with or even exceeded export revenues, and their currencies have appreciated much more strongly than those with more experience of commodity booms (figure O.8). With prices now sharply lower, such countries may be encountering additional fiscal pressures. In addition, oil exporters with relatively low reserves are not saving significantly more than those with high reserves and, as a result, may be exacerbating the competitiveness problems of their non-oil sectors. That, in turn, could be creating a future problem, because these countries, unlike those with ample reserves, will have to rely on their non-resource-based sectors to generate most of the growth in coming years.



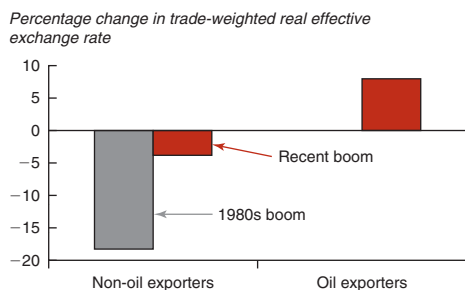
**Figure O.7 Primary commodity exporters are exhibiting fewer signs of the behaviors linked to the “resource curse”**

**a. Government expenditures have increased by much less than export revenues**



Source: World Bank.

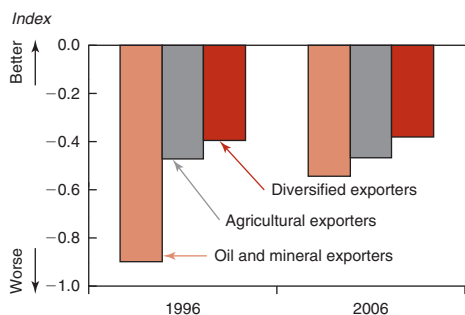
**b. The currencies of commodity exporters have appreciated modestly**



Source: IMF data; World Bank staff calculations.

Note: Increase indicates appreciation.

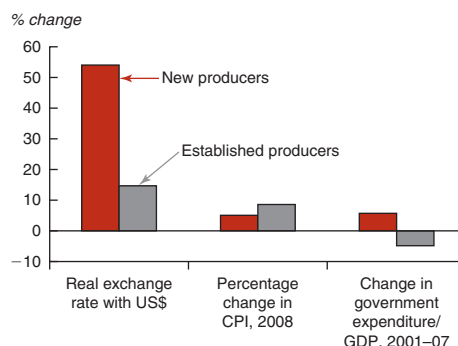
**c. Corruption in commodity exporting countries has declined**



Source: Kaufmann, Kraay, and Mastruzzi 2007; World Bank data.

In addition, spending from resource revenues in the private sector remains high. This is especially true for exporters of non-oil

**Figure O.8 Exchange rates, inflation, and government expenditures in new versus established oil exporters, 2001–06**



Source: World Bank and IMF data.

Note: New producers are defined as countries dependent on oil that began production after 1985 or were established as a country after 1985, including Azerbaijan, Chad, Equatorial Guinea, Kazakhstan, Sudan, and the Republic of Yemen (Turkmenistan lacks data for inflation and the real exchange rate). The established producers include Algeria, Angola, Republic of Congo, Gabon, Islamic Republic of Iran, Libya, Nigeria, Oman, and República Bolivariana de Venezuela. The real exchange rate with the United States (rather than the trade-weighted real exchange rate as in figure 3.5) is reported here to include sufficient countries for a useful comparison between the two groups.

a. Real exchange rate with the U.S. dollar, where increase indicates appreciation. Data for Equatorial Guinea are for 2001–04.

b. Percentage change in consumer price index in 2008.

c. Change in ratio of government expenditure to GDP from 2001 to 2007.

commodities, such as agricultural producers, where the benefits of high prices are less concentrated. Encouragingly, much of the spending appears to be directed toward investment goods, which should contribute to future production potential. In a number of African countries, however, investment spending has been financed by heavy bank borrowing, which may pose significant problems as loans become due, now that commodity prices have declined and access to credit has become much more difficult.

**High commodity prices pose challenges for the poor, especially in consuming nations**

For consuming nations, high commodity prices pose a number of challenges. In the case of heavily traded commodities such as oil, sharp price hikes can pose serious balance of

payment difficulties and increase the vulnerability of net importers. In the case of food commodities, which are mainly consumed in the same country in which they are produced, the issue for most countries is one of a transfer of wealth between producers and consumers. That said, some countries are significant net importers of food and have suffered significant balance of payment impacts from high food prices as well. Both fuel and food prices have boosted inflation and cut into real incomes in developing countries.

In general, economic policy should not resist changes in relative prices but should seek to assist adjustment to changing circumstances. However, the magnitude of the changes over the past several years has been unusually large with important implications for inflation, balance of payments, and poverty in developing countries. Moreover, because high food prices can increase malnutrition among the very poor, resulting in permanent cognitive and physical damage, even a temporary but large hike in food prices demands a prompt and well-targeted policy response.

At the global level, the cost of higher food and fuel prices to consumers in developing countries during 2008 is estimated to have been about \$680 billion. The price increases had major macroeconomic effects. High oil prices increased current account deficits in a number of countries by as much as 5 percent of their GDP. Both food and fuel price increases have led to a sharp uptick in inflation. In addition, by increasing costs, the food and fuel increases have increased the number of poor and the extent of their poverty. In general, higher food prices have had a more pronounced effect on poverty, because households in poor countries spend 50 percent or more of their income on food and only 10 percent on fuel. Moreover, for very poor households, food tends to claim an even higher share in expenditures, and fuel a much lower share. Finally, the poverty impacts are likely to be more significant because the demand for food is more inelastic than household demand for fuels, because the former can be replaced by biomass.

Not all foods prices have risen by as much as the prices for rice, maize, and wheat, however. Moreover, during 2007 and the first half of 2008, the dollar was depreciating so that local currency prices rose by less than the dollar prices. As a result, the real-local-currency increase in the price of food actually consumed in developing countries was much less than the 54 percent increase observed in internationally traded and dollar-denominated food prices (table O.1). Moreover, not all food consumed in poor countries is traded and the share of non-traded foods in total consumption varies across regions. In Africa, for example, real food prices rose by an average of 8.3 percent, compared with 19.8 percent in the Middle East, which relies much more heavily on imported foods.

Overall, the rise in food prices between 2005 and the beginning of 2008 is estimated to have increased the share of the population of East Asia, the Middle East, and South Asia living in extreme poverty by 1 or more percentage points. Impacts in Africa were less pronounced because food prices rose by less on average and

**Table O.1 Food price hikes and consumption shares vary by region**

Region	Price shock	Food share among the poor
	(percent)	
<i>Rural population</i>		
East Asia and Pacific	12.4	71.5
Europe and Central Asia	-0.2	63.4
Latin America and the Caribbean	6.9	51.2
Middle East and North Africa	25.9	64.5
South Asia	5.0	65.3
Sub-Saharan Africa	9.6	68.0
<b>Developing world</b>	<b>6.7</b>	<b>66.1</b>
<i>Urban Population</i>		
East Asia and Pacific	13.8	67.5
Europe and Central Asia	-0.5	57.9
Latin America and the Caribbean	1.6	44.1
Middle East and North Africa	12.5	57.1
South Asia	4.8	64.4
Sub-Saharan Africa	4.9	53.0
<b>Developing world</b>	<b>4.1</b>	<b>60.4</b>

Source: World Bank.

Note: Price shocks differ between the rural and urban populations because of differing degrees of urbanization among countries included in the aggregates.

because a much larger share of the population lives in rural areas. In general, rural dwellers have been less seriously affected because, in addition to being consumers, many are producers and benefit from higher revenues. The impact on the urban poor was much higher, increasing the incidence of poverty by more than 1.5 percentage points in East Asia, the Middle East, South Asia, and Sub-Saharan Africa (table O.2). Overall the number of extremely poor is estimated to have increased by between 130 and 155 million, and the poverty deficit (the annual cost of lifting the incomes of all of the poor to

the poverty line) increased by \$38 billion, or 0.5 percent of developing-country GDP.

For the very poor, reducing consumption from already very low levels, even for a short period, can have important long-term consequences. Already, higher food prices during 2008 may have increased the number of children suffering permanent cognitive and physical injury caused by malnutrition by 44 million. It is therefore critical that countries react to higher food prices by increasing the assistance they make available to those most at risk.

Most countries have reacted to the hike in food and fuel prices by some combination of increased government spending on existing social safety net programs, be they subsidies, conditional transfer systems, or food distribution schemes. Others have responded by seeking to hold domestic prices down by reducing taxes or instituting restrictions on exports.

Such programs have been relatively expensive, increasing government expenditures by as much as 2–4 percent of GDP. Moreover, in many cases poor targeting means that much of this spending does not benefit those most in need. And, by interfering with market prices, these programs often impede adjustment, reducing producers' incentives to increase output and consumers' incentives to conserve. As such they likely exacerbated the extent of price rises and extended their duration.

Going forward, policy makers need to restructure their support so that it is better targeted on the very poor. Doing so will help ensure that the next time food (or energy) prices spike, assistance programs will be both more affordable and more effective at delivering assistance to those most in need. Of the options available, targeted cash transfers tend to succeed best because they have relatively low administrative requirements and minimize the diversion of benefits toward less needy population groups. Unfortunately, these programs may also exclude the many poor who are either unable or unwilling to meet the conditions attached to the program, which are designed to dissuade all but the most needy from participating. In-kind

**Table O.2 Higher food prices have increased both the incidence and severity of poverty worldwide**  
January 2005–December 2007

Region	Initial levels:		Change in:	
	Poverty headcount	Income gap ratio	Poverty headcount	Income gap ratio
	(percent)		(percentage points)	
<i>Urban population</i>				
East Asia and Pacific	13.2	20.3	6.3	2.7
Europe and				
Central Asia	2.5	8.7	0.0	0.2
Latin America				
and the Caribbean	3.7	37.6	0.1	-0.7
Middle East				
and North Africa	2.7	17.8	2.4	5.7
South Asia	32.3	25.0	2.0	0.5
Sub-Saharan Africa	34.1	38.1	1.7	0.3
<b>Developing world</b>	<b>15.3</b>	<b>27.1</b>	<b>2.9</b>	<b>0.5</b>
<i>Rural population</i>				
East Asia and Pacific	31.9	23.2	4.9	0.7
Europe and				
Central Asia	8.2	6.6	0.0	0.0
Latin America				
and the Caribbean	18.6	43.9	0.1	0.1
Middle East				
and North Africa	15.4	22.9	0.7	0.9
South Asia	43.3	24.0	0.8	0.3
Sub-Saharan Africa	54.9	41.5	0.3	0.0
<b>Developing world</b>	<b>37.1</b>	<b>28.2</b>	<b>2.1</b>	<b>0.1</b>

Source: World Bank, using the Global Income Distribution Dynamics model.

Note: The per capita poverty line equals 1.25 international 2005 dollars a day. The ratio of food in total consumption among the poor is computed as described in De Hoyos and Lessem (2008). East Asia excludes China, and the Middle East comprises Jordan, Morocco, and the Republic of Yemen. The income gap ratio expresses, as a percent of the poverty line, how much the income of the average poor person is lower than the poverty line.

programs, such as school feeding and the distribution of fortified weaning food for toddlers, can be effective, especially in fiscally constrained countries. Subsidies, even targeted ones, tend to be much less efficient, with as little as one-fifth of the money spent benefiting the poor. Public works programs rarely provide sufficient coverage to meaningfully target poor families. Whatever policies are adopted, it is critical that the offsetting income support be clearly presented as temporary and include phaseout strategies to avoid creating an unnecessary longer-term fiscal burden.

### *The role for international policy*

Ultimately, given the scope of the costs involved, neither individual governments nor international agencies are in a position to offset the costs of higher food and fuel prices entirely. However, well-targeted programs are much more affordable. For the poorest countries, these too may be beyond reach fiscally, and in these cases, the international community has a role.

Steps so far have concentrated on reallocating existing funds toward those most in need and on strengthening both the financial and infrastructural capacity of emergency food aid agencies such as the World Food Programme (WFP). Further steps that might be considered include providing the WFP with a more stable source of financing and affording it a line of credit so that it is able to act quickly in instances where food prices are unusually high.

Policy makers might also examine prospects for improving the coordinated management of grain reserves so that they can be more easily brought to the aid of those in need. Steps might include the construction of storage facilities in strategic parts of the world and the creation of a management system perhaps along the lines of that used by the IEA for oil. Individual food-importing and -exporting nations may wish to explore the use of market-based future contracts as an

alternative to building stocks and restricting exports. Such contracts can reduce both price and quantity uncertainty by providing for guaranteed delivery of fixed quantities of grains at fixed prices. They can even be written conditionally, providing an option to sell or buy that can be exercised depending on market conditions.

Trade reform will necessarily form part of the solution as well. Steps are required to sanction effectively countries that use export restrictions as a mechanism to control domestic prices. Not only do such restrictions interfere with the domestic supply response, they also tend to exacerbate the price hikes and shortages in the rest of the global economy. Although a successful conclusion to the World Trade Organization's Doha Round of multilateral trade negotiations might result in higher prices in the short run, it would likely prove beneficial to developing countries by improving the competitiveness of their agricultural sectors and reducing their reliance on imported food.

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