

Boom or Bust

Developing countries' rough ride on the commodity price rollercoaster

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Summary

Commodity prices are at their highest levels in decades, driven by strong demand from the emerging economies of China and India and gravity-defying American consumption. In 2003, China overtook the U.S. as the world's largest copper consumer. By 2004, it was consuming 46 per cent more copper than the U.S. and accounting for 20 per cent of global demand (Dyer 2006). Timber and aluminum prices are now at or near 20-year highs. Rubber, rice and cocoa prices have also risen steeply.

This should be good news for the developing countries that export commodities and for the estimated two billion people worldwide who depend on commodity production (UNCTAD 2005a, 4). Ninety-five of the 141 developing countries derive at least 50 per cent of their export earnings from commodities (South Centre 2005, 11). Such countries are experiencing massive windfall revenues from the high commodity prices; Chile's revenues from its copper exports, for example, increased more than twelve-fold between 1999 and 2004. The OECD predicts that African economic growth—largely buoyed by high commodity prices—will average 5.8 per cent for 2006.¹

But what goes up has the disturbing tendency to crash back down again. Commodity prices are highly volatile in the short term, in some cases varying by as much as 50 per cent in a single year. At the same time, relative to prices for manufactured goods, commodity prices are declining over the long term.

Active commodity markets do bring certain benefits, such as relatively efficient price determination. In addition, the profits generated in commodity markets provide capital for upstream companies and drive continued demand for the commodities.

However, while developed country producers are supported by subsidies and social safety nets, developing countries and smallholder producers feel the extent of commodity price volatility much more directly. In effect, many developing countries are becoming locked into the production and export of primary commodities whose volatile prices are declining over the long term and over which they have very little control.

Price volatility makes sound fiscal planning extremely difficult for both countries and producers. Price booms and busts also drive social inequalities, livelihood insecurity and corruption. In extreme cases, price swings cause conflict over valuable land and resources which can ignite underlying social tensions. Through the ups and downs, the environment takes a back seat; price volatility simply does not create incentives for sound environmental stewardship.

This paper seeks to describe the impacts of commodity price volatility and promote discussion about what can be done to help stabilize revenues for countries as well as producers.

¹ http://www.oecd.org/document/34/0,2340,en_2649_201185_36710818_1_1_1_1,00.html

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Acronyms

CDDC	Commodity-dependent Developing Country
CCFF	Contingency and Compensatory Finance Facility
CEC	Commission of the European Community
ECA	Economic Commission for Africa
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
HIPC	Heavily-indebted Poor Country
ICA	International Commodity Agreement
IMF	International Monetary Fund
LDC	Least Developed Country
OPEC	Organization of Petroleum Exporting Countries
UNCTAD	United Nations Conference on Trade and Development
WTO	World Trade Organization

1. The commodity price problem

The commodity price problem is a combination of the historically declining terms of trade for most primary commodities (i.e., their prices rise at a slower rate than manufactured goods or services) and extremely volatile prices over the short term.² Volatile and slipping prices are dangerous to individual producers and to governments, who face the dual problems of low returns and high risk.

That risk has been partially disguised by high commodity prices in recent years. Driven by soaring demand from the emerging economies of China and India as well as strong U.S. consumption, commodity prices are at their highest levels in decades. By mid-2006, copper and aluminum prices were at or near 20-year highs.³ Rubber, rice and cocoa had all rebounded after suffering during the first years of the new millennium. And oil prices, in real terms, were at levels not seen since the 1970s.

But it would take little to tip prices (and the commodity rollercoaster) back down again. In fact, warnings of a dangerously inflated commodity price bubble surfaced in the summer of 2006 (Spence 2006). One reason for this is the unprecedented Chinese demand for commodities in recent years. China now accounts for over 15 per cent of global imports of copper, iron ore, natural rubber and soybeans. While developed country demand has largely remained stable, China has been generating much of the marginal commodity demand that has been driving up prices (UNCTAD 2005b, 74). Should China's economy cool, commodity prices would plummet across the board.

Developing country governments are highly dependent on commodity export tariffs and taxes as a primary source of revenue, while billions of workers rely on commodity production for their livelihoods. Ninety-five of the 141 developing countries derive at least 50 per cent of their export earnings from commodities (South Centre 2005, 11). Copper and zinc account for 61 per cent of Zambia's export earnings; cotton makes up 72.7 per cent of Mali's earnings; and crude oil accounts for a massive 89.7 per cent of Equatorial Guinea's export earnings.⁴ UNCTAD estimates that two billion people—a third of the global population—are employed in commodity production, half of those in agriculture (UNCTAD 2005a, 4).

² Primary commodities, or “commodities” for our purposes, are unrefined, undifferentiated primary goods—minerals, agricultural products and metals are some examples—that are sold as they are found in nature. Definition from the World Bank:

<<http://www.worldbank.org/depweb/english/modules/glossary.html>>

³ Current metals prices based on the London Metals Exchange, as reported by basemetals.com, <<http://www.basemetals.com/>>

⁴ Statistics average export earnings across 2002–03. UNCTAD, “*Handbook of Statistics*,” 2005.

Table 1: Commodity dependency around the world.

Countries dependent on a single primary commodity for export earnings (annual average of exports, in dollars, 1992–1997)			
	50% or more of export earnings	20–49% of export earnings	10–19% of export earnings
Middle East			
Crude petroleum	Bahrain, Iran, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia, Rep. of Yemen	Syrian Arab Republic, United Arab Emirates	Egypt
Aluminum			Bahrain
Africa			
Crude petroleum	Angola, Rep. of Congo, Gabon, Nigeria	Cameroon, Equatorial Guinea	Algeria
Natural gas		Algeria	
Iron ore		Mauritania	
Copper	Zambia		Dem. Rep. of Congo
Gold		Ghana, South Africa	Mali, Zimbabwe
Timber (African hardwood)		Equatorial Guinea	Central African Rep., Gabon, Ghana, Swaziland
Cotton		Benin, Chad, Mali, Sudan	Burkina Faso
Tobacco	Malawi	Zimbabwe	
Arabica coffee	Burundi, Ethiopia	Rwanda	
Robusta coffee	Uganda		Cameroon
Cocoa	São Tomé and Príncipe	Côte d'Ivoire, Ghana	Cameroon
Tea			Kenya, Rwanda
Sugar		Mauritius	Swaziland
Western Hemisphere			
Crude petroleum	Venezuela	Ecuador, Trinidad and Tobago	Colombia, Mexico
Copper		Chile	Peru
Gold			Guyana
Cotton			Paraguay
Arabica coffee			Colombia, El Salvador, Guatemala, Honduras, Nicaragua
Sugar		Guyana, St. Kitts and Nevis	Belize
Bananas		Honduras, St. Vincent	Costa Rica, Ecuador, St. Lucia
Fish meal			Peru
Rice			Guyana
Europe, Asia, Pacific			
Crude petroleum		Azerbaijan, Brunei, Darussalam, Norway, Papua New Guinea, Russia	Indonesia, Kazakhstan, Vietnam
Natural gas	Turkmenistan		
Aluminum		Tajikistan	
Copper		Mongolia	Kazakhstan, Papua New Guinea
Gold		Papua New Guinea	Uzbekistan
Timber (Asian hardwood)		Lao PDR, Solomon Islands	Cambodia, Indonesia, Myanmar, Papua New Guinea
Timber (softwood)			Latvia, New Zealand
Copra and coconut oil	Kiribati		
Cotton		Pakistan, Uzbekistan	Azerbaijan, Tajikistan, Turkmenistan

Note: Chart reproduced from Casbin et al., 1999; data source: International Monetary Fund.

Commodity dependence may seem advantageous while prices are high—public revenues from oil production in Venezuela, for example, jumped from US\$7.4 billion in 1999 to US\$19 billion in 2004. Meanwhile, Chile’s revenue from copper production increased from US\$442 million to US\$5.5 billion over the same period (UNCTAD 2005b, 122).

But dependence on revenue from a narrow range of commodities is a highly risky strategy for countries and producers, whose economic fortunes are held captive to international markets over which they have little or no influence. In addition, their exports do not necessarily create skilled jobs and add little value. They attract little inward investment and their often opaque revenue flows can lead to increased corruption and poor governance: the so-called “resource curse.”

For commodity traders, dramatic price changes provide the basis of long-term revenue generation through combined risk-management and speculative activity. For labourers and small producers in the developing world, price movements greatly increase their economic insecurity and, ultimately, threaten the possibility of sustainable livelihoods. While commodity traders have the resources, infrastructure and expertise to protect against falling prices, the typical developing country farmer does not.

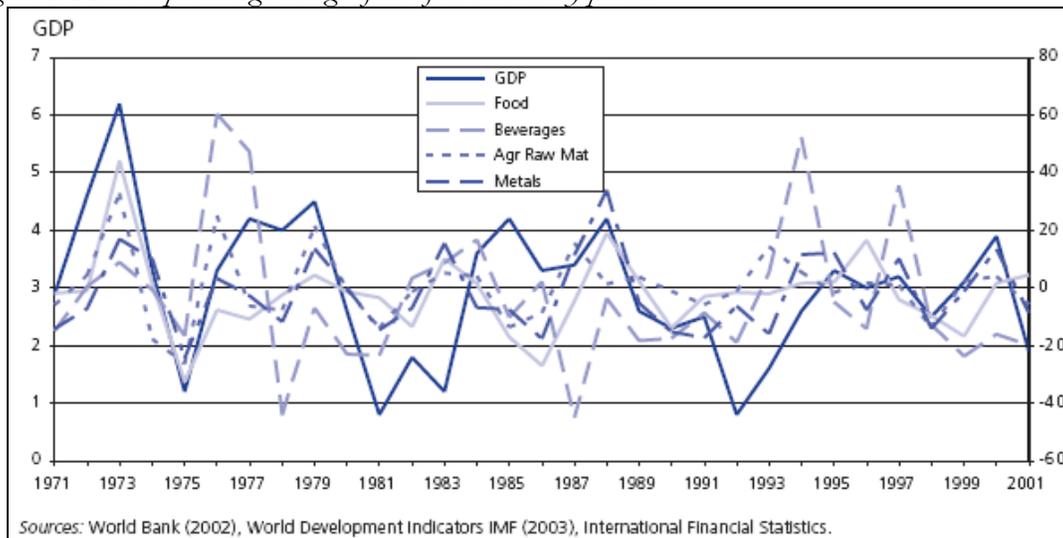
Short-term fluctuations in commodity prices have been a fact of life in many developing countries for decades. Although commodity price volatility cannot be blamed for all macroeconomic instability in the developing world, it is important to understand the implications of commodity dependence and price volatility. To that end, this paper examines the extent of price volatility and lays out the driving forces behind short-term and long-term trends in commodity prices. It then discusses the positive and negative effects of commodity price fluctuations and concludes by raising some of the key issues for consideration in the future.

2. Understanding price trends and their importance

2.1 Short-term prices can be extremely volatile

Commodity prices are highly volatile in the short term, sometimes varying by as much as 50 per cent in a year (Figure 1) (Cashin *et al.* 1999, 42; Cashin and McDermott 2002, 176; Kellard and Wohar 2006, 165). By illustration, cocoa prices fluctuated between 60 per cent and 170 per cent of the average price between 1983 and 1997—from US\$0.97 to US\$2.68 per kilogram in current dollars.⁵ For the same period, robusta coffee prices fluctuated from 40 per cent to 195 per cent of its average (ECA 2003, 2).

Figure 1. Annual percentage change of non-fuel commodity prices.⁶



At a very basic level, a commodity's price reflects its supply and demand. However, there's much more to the story. Short-term price volatility is driven by a wide variety of factors including:

- Changing weather patterns
- Business cycles in key markets
- Price speculation
- Conflict in producing or transit countries
- Exchange rate reforms
- Breakdown of the international commodity agreements
- Demand cycles
- Export dumping (see Box 1)

⁵ Price data from World Bank monthly commodity price data set. Low price occurred in December 1989 and high price occurred in May 1984.

⁶ Chart from the World Trade Organization's "World Trade Report 2003," page 40.

Box 1. Weather or not: short-term volatility can come from unexpected places.



Changing weather patterns and natural disasters – Unexpected weather patterns can severely harm agricultural commodities. In the past, abnormal weather brought on by El Niño has caused extensive flooding in agricultural regions of South and Central America, while bringing severe drought to Australia’s wheat-growing region (Brunner 2000, 6). In 2002, heavy rains in Malaysia reduced natural rubber supplies, causing international prices to jump significantly (International Rubber Study Group). With climate change expected to increase the number of extreme weather events, climate-induced price volatility is likely to become more severe in the future.

Business cycles in key markets – Manufacturers of finished goods have a powerful effect on commodity prices through their demand for inputs (Adebusuyi 2004, 3). In September and October of 2001, commodity prices fell across the board as developed economies dropped into recession following the September 11 terrorist attacks.⁷



Price speculation – Investing in commodity derivatives (futures and options) to make money on price fluctuations carries high risks and rewards, and has become increasingly popular. In markets where relatively small quantities of physical goods are traded (e.g., the London Metals Exchange), the value of speculative trades can far outweigh that of “real” trade, creating false trends and driving up prices for consumers. The result is that investors with no stake in the actual prices of commodities have amplified the price swings. Merrill Lynch estimated that in April 2006 commodities were trading at prices 50 per cent higher than they would have been without speculators—inflating a dangerous commodity price bubble (Thornton *et al.* 2006).



Conflict in producing countries – Unexpected political instability and military conflict in supplier countries and in countries along supply routes can cause sharp fluctuations in commodity prices. Producers in conflict zones are unable to get their product to market, driving up prices. Speculators and importers who control futures contracts for the rising commodities gain while major producers are unable to take advantage of the high prices. Problems in the Middle East or civil unrest in Côte d’Ivoire have had significant impacts on the prices of oil and cocoa, respectively.



⁷ Price data from World Bank, 2006.



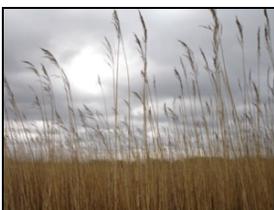
Exchange rate reforms – In 1971, the Bretton Woods exchange regime broke down, allowing much more variability in relative currency values (Cashin and McDermott 2002, 196). As a result, producers are now exposed to variability in how their home currencies are faring against the U.S. dollar, the standard currency for commodity price quotations.

Breakdown of international commodity agreements – Several international commodity agreements (ICAs) that had regulated supply for decades began to break down in the 1980s and 1990s due to competitive pressures, disagreements between members and insufficient funds (see Box 5) (Adebusuyi 2004, 6). The ICAs regulated supply, either through quotas or buffer stocks, so that world prices remained stable, within a specified range.



Movement away from central planning; toward privatization – Structural adjustment and liberalization programs in the 1980s and 1990s forced developing countries to privatize their commodity production and distribution authorities. Since these authorities usually bought up all production at a specified price and negotiated on behalf of all suppliers in a country, privatization decreased price stability and producers' individual bargaining power.

The nature of demand for certain commodities – Demand for some products, such as cereal grains (wheat, corn), does not increase proportionally as supply increases; a small positive or negative shift in supply can cause a dramatic price spike or slump, simply due to the nature of world demand (South Centre 2005, 13). Such commodities are said to have “inelastic” demand. Other commodities, such as vegetables and fruits, have higher “elasticities” of demand—thus when supply of these commodities increases, demand increases more or less proportionally, keeping price changes relatively small.



Export dumping – Export dumping occurs when commodity producers in the developed world, supported by government subsidies, can afford to export their goods to the developing world at prices lower than the cost of production in the recipient countries. This in turn drives down prices as local producers try to compete with the cheap imports.

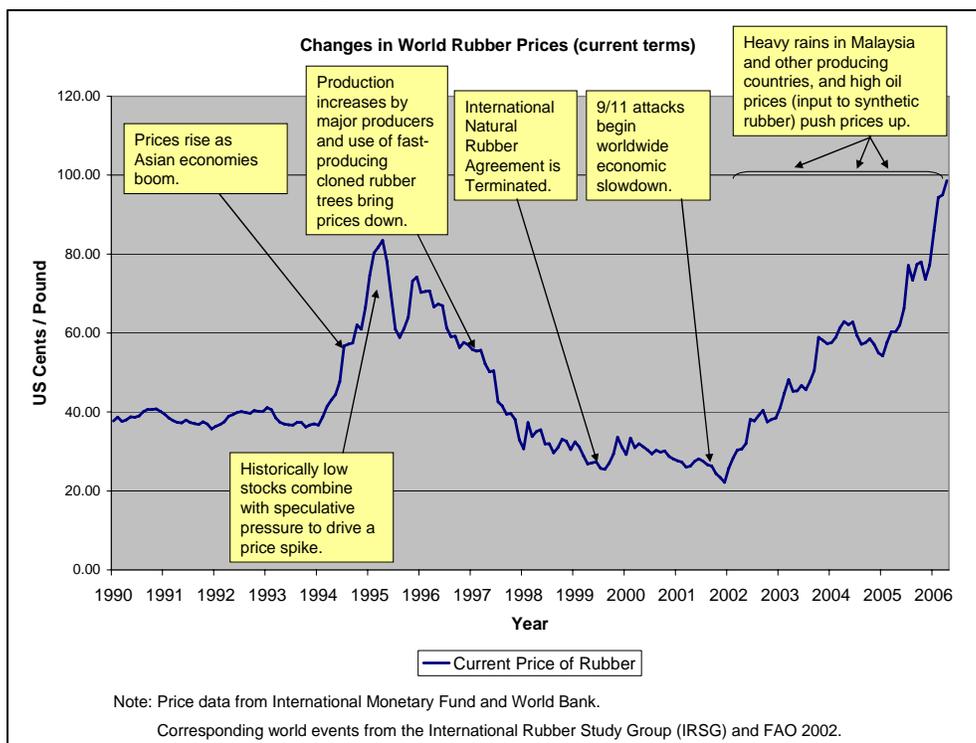
Volatility has become more serious over the past 30 years. Between 1972 and 1999 there were as many major price movements as there were between 1899 and 1971 (Cashin and McDermott 2002, 188). The increasing volatility appears to be a broad trend, affecting many commodities exported by developing countries (UNCTAD 2003a, 11). It is difficult to

understand, outside of some practical context, what these commodity price swings mean to commodity-dependent countries. Consider the example of Paraguay:

Paraguay is the world’s fourth largest soybean exporter. From August 2003 to March 2004, world soybean prices rose from US\$237 to US\$413 per metric tonne, an increase of 74 per cent. Over the next 24 months, prices proceeded to fall back to US\$256 a tonne. As a result, Paraguay saw the value of its soybean exports rose and then fell by over US\$400 million.⁸

A look at the intersections of rubber prices and world events over the past few years gives a good indication of just how varied the drivers of price volatility can be (Figure 2 – see the Appendix for similar information regarding cocoa and copper).

Figure 2. Key events affecting rubber prices, 1990–2006.



2.2 Real prices are declining steadily over time

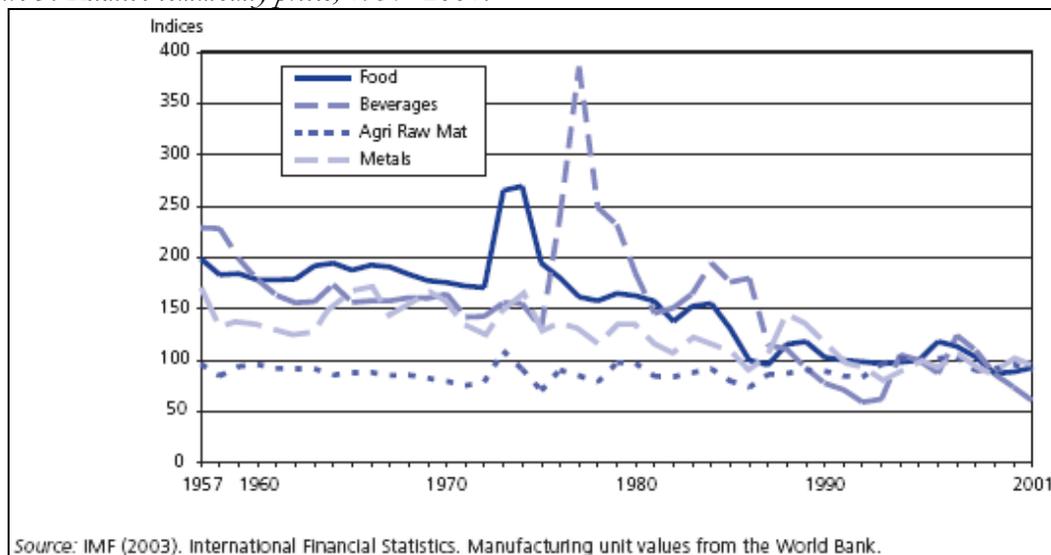
Starting with Prebisch and Singer in 1950, study after study has shown that relative commodity prices are decreasing over time (Figure 3). One estimate, using price data from 1862 to 1999, indicated a downward trend in real commodity prices of one per cent per year (Cashin and McDermott 2002, 176). In 2001, the UN estimated that for every \$1 received in aid by sub-Saharan Africa since the 1970s, \$0.50 has been lost as a result of these deteriorating terms of trade (UNCTAD 2001).

⁸ Ibid.

Box 2 outlines some of the reasons for this long-term decline. They include productivity increases, structural oversupply, rich country subsidies, new substitutes and market concentration. The outcome for the many smallholder farmers who do not have access to the technology necessary to increase their productivity is that each year their incomes decrease while their workload remains the same.

Decreasing commodity prices mean that each year producers are less able to invest in new technology and implement new production techniques. It also means they are less able to invest in diversification programmes that would provide some protection from negative price shocks. This trend snares commodity-dependent countries (and producers) in a “resource trap,” whereby declining terms of trade creates a negative cycle of increasing debt and dependence on a particular commodity (South Centre 2005, 6).

Figure 3. Relative commodity prices, 1957–2001.⁹



Hidden behind the commodity boom and bust cycle, the drivers of long-term declining commodity prices are much less obvious (Box 2). Nevertheless, the trend represents a strategic problem that will likely continue into the foreseeable future. But in order to see this long-term trend play out, commodity-dependent producers and countries need to first survive short-term price volatility. It is in this light that Cashin and McDermott state that, “Although there is a downward trend in real commodity prices, this is of little practical policy relevance, since it is small and completely dominated by the variability of prices” (2002, 175).

⁹ Chart from the World Trade Organization’s “World Trade Report 2003,” page 36.

Box 2. Structural price decline: slowly eroding terms of trade.



Productivity increases – Improvements in farming methods and the development of more robust strains of cash crops have caused agricultural yields to rise consistently. For instance, the average yearly productivity of rubber plantations has grown by a factor of 10 in the past 100 years, from 250 kg per hectare to 2,500 kg per hectare (Clay 2004, 338). Likewise, improved extraction methods have increased productivity in mining industries. For many commodities, demand has not increased proportionally.

Structural oversupply – In addition to productivity improvements, commodities can experience structural oversupply, where high up-front costs and low operating costs create incentives to increase production when prices are high but not to decrease production when prices are low. For instance, a rubber farmer may plant more trees when prices are high. Planting the new trees, which do not become productive for five years, is expensive while harvesting the rubber is relatively cheap. The farmer will generally continue to harvest the rubber during periods of low prices, as long as he is covering operating costs. In fact, producers (and countries) that depend on a single commodity may be forced to increase production, even at low prices, in order to service their debts—exacerbating the oversupply (CEC 2003, 12).



Subsidies – Subsidies in the U.S. and EU create perverse incentives, causing long-term overproduction and holding down world prices. The U.S. alone pumps US\$3.9 billion into domestic cotton subsidies. This amount, distributed among 25,000 U.S. cotton farmers, is greater than the total GDP of Burkina Faso, where over two million people depend on cotton for their livelihoods. Removing these subsidies would result in an estimated 26 per cent rise in cotton prices and redistribute market share to the true low-cost producers, primarily in developing countries (Oxfam 2002a, 2).¹⁰

Substitutes – Often developed during periods of high commodity prices, substitutes for commodities effectively increase the overall supply, even when the price spike ends. The rubber industry is a good example: developed during World War II, synthetic rubber is cheaper than natural rubber and now accounts for 71 per cent of the rubber market (Clay 2004, 335).



¹⁰ For more information about the effects of subsidies in developed countries, visit the Global Subsidies Initiative (<http://www.globalsubsidies.org>), a program of the International Institute for Sustainable Development.



Market concentration – The concentration of certain commodities markets has generally meant fewer, larger companies can dictate the prices they are willing to pay to producers. While this can translate into savings for the end consumer, it also means to farmers are squeezed to accept lower and lower prices. In the case of coffee, it is difficult for unorganized smallholder farmers to negotiate price when half of the world's coffee beans are now purchased by five companies: Nestle, Kraft, Proctor and Gamble, Sara Lee and Tchibo.

3. Theoretical benefits of liberalized commodity markets

It is clear that liberalized, more fluid commodity markets do offer some advantages over the former command economy approach to managing commodity markets. The national commodity boards that typified old command economies forced producers to sell to a single (state) buyer and, in doing so, removed market opportunities from the producer, while also placing a barrier between producers and consumers, reducing or eliminating the market information available to producers.

3.1 Commodity markets improve efficiency

Despite distortions and perverse incentives, markets are much better at determining prices than supplier agreements or national marketing boards, whose artificially high prices could not be supported indefinitely. The International Coffee Agreement, for instance, consistently supported prices 24 to 30 per cent above the true market clearing prices, leading to oversupply among participating suppliers and creating an incentive for new suppliers, such as Vietnam, to enter the market with lower prices which in turn precipitated a dramatic price collapse (Lines 2005, 155).

Operating outside of the ICA, Vietnam quickly became a leading producer of robusta coffee, which eventually made the ICA's supply controls unsustainable. Similar pressures led to the demise of most international commodity agreements and made national price supports nearly impossible to maintain. True market pricing, on the other hand, provides producers with real-time information on commodity supply and demand. In this sense volatility is just the rapid adjustment of prices to market circumstances.

3.2 Commodity investment creates incentives to increase market access

Investors are increasingly turning to commodity markets to diversify their investment portfolios, especially when stock prices are weak. As more investors are drawn into commodity markets, pressures are building to increase market access and improve trading institutions.

Major commodities markets are already attempting to increase geographical coverage and improve access to developing countries through joint ventures and other initiatives. There have even been some bold proposals to create new market systems specifically for developing country producers; members of the African Union, for example, have agreed upon a mandate to study the feasibility of creating an African commodity exchange.¹¹

Improved market access has the potential to bring individual producers the information they need to negotiate more effectively. In addition to better knowledge of market prices, producers can use futures contracts and other market-based tools to hedge against price drops. Although large access and information gaps must still be closed before farmers in LDCs will be able to use these market tools, things are slowly moving in the right direction.

4. Practical drawbacks

Traditional economic theory argues that simple supply-demand dynamics should act to rationalize prices with producers quickly cutting output in response to reduced demand and lower prices. The problem is that the world does not march in step with neat economic theory.

Producer responses are rarely smooth: production cycles, commodity policy and infrastructural limitations mean that producers are unable to respond quickly to price fluctuations. Moreover, producer responses to price signals are not always “rational” for a variety of reasons including limited market information, national commodity policy and sunk investments in commodity production. Finally, the pricing mechanism itself is flawed as it does not internalize the full social and environmental costs of production.

In effect, most of the benefits of price volatility accrue to players in the developed world—investors, producers, and importers—who have the information, resources and market power to realize the advantages of quick market adjustments.¹²

Meanwhile, the downsides of price volatility are felt primarily by countries and producers in the developing world—those least equipped to adapt to such shocks. It is increasingly clear that the “invisible hand” of the market treats many countries and producers very roughly, contributing to failed and fragile states; increased dependence on commodities; corruption; poor fiscal management; international flows of economic refugees; and environmental degradation.

While efficiency is a noble goal, the theoretical underpinnings of international commodity markets do not translate into distributional equity in practice; commodities exist in a world far removed from pure economic theory. In the real world, price volatility causes four sets of problems: problems of planning, of dependency; of social and economic insecurity and of environmental degradation.

¹¹ From an interview with Mr. Samuel Asfaha of South Centre, on 14 July 2006.

¹² The value chain refers to the series of value-added steps that occur to turn a primary commodity into a finished good. Agricultural commodity producers typically only get a 4–10 per cent share of the price paid by consumers for the end product (UNCTAD 2005c, 4).

4.1 The planning problem

Unreliable export prices greatly complicate fiscal management in commodity-dependent developing countries, as governments have no way to accurately forecast future earnings (UNCTAD 2003a, 14). Alleviating poverty and implementing economic development plans is difficult when your revenue stream is continually in doubt (Box 3).

A few commodity-dependent countries have successfully managed revenue fluctuations over the years. Some, like Chile and Botswana, have been able to control expenditures and use commodity profits—from copper and diamonds, respectively—to promote economic diversification.

However, many others, such as Algeria, Côte d'Ivoire, Nigeria and Venezuela, have fallen into over-optimistic spending habits, using current and future windfall profits to finance politically-beneficial domestic programs and unsustainable projects (Kumah and Matovu 2005, 7; IMF 2005, 40). As in developed countries, such programmes are politically much harder to terminate than they are to initiate. These public expenditures tend to increase when commodity prices drop, since more citizens are forced to rely on the new social welfare programmes (Kumah and Matovu 2005, 5). With revenues and program costs going in opposite directions, commodity-dependent developing countries are often forced to borrow money to cover budget deficits. With no collateral to secure a loan, countries (and producers) may have to resort to high-interest lenders, quickly building up a crushing amount of debt (Kumah and Matovu 2005, 5; Green 2005, 4).

Nor are such fiscal situations immediately reversed when prices rise again. Negative price shocks tend to reduce personal and national real income which in turn compounds the initial price shock. The cascading effect of price slumps can precipitate economic decline that persists for years after the price slump that caused it (Box 3). The Economic Commission for Africa estimates that this leads to a loss of national income in developing countries of between 3.5 per cent and 6.8 per cent of GDP (ECA 2003, 5).

Box 3. Burundi's personal ride on the revenue rollercoaster.

The central African country of Burundi depends on coffee and tea for 87 per cent of its exports. When, between 1986 and 1987, the prices of the two commodities dropped 37 per cent and 20 per cent respectively, the value of Burundi's total annual exports fell 40 per cent—from US\$154 million to US\$90 million. In 1988, the country's total exports rebounded to US\$132 million on a slight increase in coffee prices, only to drop down to US\$78 million the following year. By 2003, the total value of Burundi's exports was a dismal US\$37 million (Parimal 2006, 5).

Individual producers face similar planning problems. Short-term price fluctuations make it difficult for producers to plan future production and expenditures, forcing them to make decisions based on incomplete information (South Centre 2005, 9–11). While other businesses base production decisions on historic and forecasted demand trends, price booms and slumps completely obscure producers' view. In periods of extremely low prices, producers may have to abandon production altogether. Besides the loss of jobs for workers,

such a shutdown leads to a loss of market share that may be difficult to regain in the future (South Centre 2005, 9).

Price booms also challenge commodity producers. They lead to difficult decisions regarding future planting or extraction, as well as how to get the most out of production right now, so as to secure the maximum profit. A small coffee farmer does not necessarily know or care why prices are high in an economic sense, but when prices are high he could have two options: to increase production by moving from a shade-grown system to a more intensive sun-grown system; or to continue practising the more sustainable, land-friendly shade-growing strategy. One decision could harm future production and profits, while the other definitely sacrifices immediate profits. Either decision may prove unsustainable. But having to make that decision without understanding when or how big the next price slump will be is tremendously risky.

4.2 The dependency problem

In addition to creating a sort of political trap, high commodity prices can tempt developing countries to focus investment and attention on the booming sector in order to increase production and take advantage of the high prices. External investment is also drawn into the country, but is often focused on short-term profit rather than long-term commitments, which are seen as risky in such volatile economies (Adebusuyi 2004, 4).

A focus on the booming sector at the expense of others areas of the economy deepens the country's dependence on commodities; both explicitly—as countries scramble to maximize profit by increasing production when prices are high—and implicitly—as currency appreciation makes other areas of the economy uncompetitive. This leads to a “hollowing out” of the economy (also known as “Dutch disease”) as economic sectors not associated with the booming commodity steadily wither away.

4.3 Inequality, insecurity and corruption

It is clear that the poorest are hurt the most by commodity price shocks (Bourguignon *et al.* 2004, 386). Whereas large farmers and producers have greater resources to invest in new technologies and diversify production, small farmers and labourers, often tied to a single product, can be devastated by a drop in prices. (Green 2005, iv).

This is frequently the case, as several key commodities are produced overwhelmingly by smallholders and dependent labourers. Seventy per cent of the world's coffee, for example, is produced on small-scale family farms across 85 countries (Bacon 2004, 497). Between 2000 and 2004, coffee prices fell from US\$1.20 per pound to between US\$0.75 and US\$0.45 per pound. Subsequently, employment in Central America's coffee sector fell over 50 per cent. In Nicaragua, agricultural workers were forced to migrate into impoverished urban areas, experiencing a marked decline in their quality of living (Bacon 2004, 498). The resultant increasing income inequality not only has serious impacts at the individual level, but also undermines overall economic growth, creating a disastrous feedback cycle (Aizenman and Pinto 2004, 9).

In terms of global economic power, the gap is also widening between developed countries and commodity-dependent developing countries. Following the collapse of supply control

mechanisms, producers in developing countries began to lose their market influence. Today, the power in most value chains has shifted from the producers to the consumers (i.e., manufacturing and distributing companies).

Box 4. Where does it go? Revenue mismanagement and corruption in Nigeria.

In 2005, Nigeria tied for 152nd on Transparency International's Corruption Perception Index, only six places from the bottom. Under Nigerian law, 13 per cent of revenue generated in any state is returned to the producing state for economic development. Although this sounds like a good idea, few checks have been put in place to ensure that the money is spent wisely. Without such institutions, the states are ill-equipped to handle the large revenues generated by high oil prices.

Bayelsa, a small state in the Niger Delta, produces 30 per cent of Nigeria's oil. Due to rising oil prices, Bayelsa's budget grew from US\$300 million in 2003 to US\$560 million in 2005. Since 2002, the state has spent over US\$25 million on a governor's mansion. In contrast, the 2005 budget for the state's Poverty Eradication Committee was US\$23,000—less than the amount allocated for toiletries for state government officials.

Although the state's governor, Diepreye Alamieyeseigha, was arrested in September, 2005 on charges of money laundering, the country has a long way to go to stamp out corruption. Continued oil profits certainly will not make the fight against corruption any easier (Polgreen 2005).

Manufacturers benefit from low commodity prices, since commodities serve as their inputs. But increased prices for manufactured and processed goods are often not transmitted down to commodity producers because they are typically unorganized and lack market knowledge. Coffee again provides a good example: between 1985 and 1995, producers' share of each dollar spent on retail coffee in the United States fell from US\$0.38 to US\$0.23, while coffee prices, in real terms, rose 30 per cent in the same period (Clay 2004, 79). The profit was, of course, captured by the coffee traders and distributors.

While small producers struggle, commodity speculators have been reaping huge profits from large commodity price swings. In the first quarter of 2005, Goldman Sachs posted a healthy profit of US\$2.6 billion, largely by putting more money into commodity markets and other relatively risky investments (Thornton *et al.* 2006). This quarterly profit was roughly equivalent to half of the 2005 GDP of Burundi, where 93 per cent of the labour force is involved in agriculture (CIA World Factbook).

Few commodity-dependent countries have social and governmental institutions strong enough to manage severe price shocks (see Box 4). Volatility creates incentives for corruption (particularly if the gains are likely to be short-lived) and intensifies underlying tensions, potentially leading to conflict. It has been convincingly argued, for example, that the sinking price of coffee and tea in the early 1990s helped to set the context for the Rwandan genocide of 1994 by halving export revenue, eroding livelihoods and exacerbating ethnic tensions over the country's extremely limited agricultural land (Uvin 1996, 14).

4.4 The environment takes a backseat

As with financial planning, commodity price volatility can contribute to ineffective or nonexistent environmental management. Since commodities are (almost by definition) tied to land and water; environmental planning is critical to sustainable production. Of course stable prices by themselves do not lead to better environmental management; that requires, amongst other things, stronger links between the prices of commodities and the environmental costs of producing them.

Nevertheless, both high and low prices can give producers an incentive to increase production, even at the expense of the environment and future output. Increasing the intensity of production can mean planting more in a given area of land, working more mining shifts, continual mono-cropping instead of rotating crops through fields, or allowing fewer fallow periods.

Greater intensity requires more inputs, be they land, energy, water, fertilizer, or pesticides (Table 2). Shade-grown coffee, for instance, is much better than full sun coffee in terms of maintaining fertility and biodiversity. But when prices are high a coffee farmer can take advantage by clearing forest land and packing as many coffee trees into the area as possible, increasing production for a short time but degrading the land in the process (Clay 2004, 75).

Between 1985 and 2001, countries that depended on coffee increased their average export of coffee by 26 per cent but saw their revenues *drop* by nearly one-third (FAO 2004, 20). Such market forces do not create incentives for responsible stewardship of land and resources in commodity-dependent developing countries. In fact, as coffee prices continued to fall in the late 1990s, large numbers of Nicaraguan farmers cut down coffee trees and converted land into treeless cattle pastures, causing high rates of erosion and soil degradation (Bacon 2004, 498).

Extractive industries, such as petroleum and mining, can also have severe environmental consequences if they are poorly planned. As with crops, there is a correlation between price fluctuations and poor planning as producers (and entire countries) scramble to respond to price rises and slumps.

In undeveloped areas that need the local revenue generated by a proposed mine, communities rarely have the leverage to force mining companies to remediate environmental damage or undertake land reclamation projects when the mine is exhausted. Even if a mining company does agree to such requirements, a prolonged price slump can drive the company into bankruptcy long before the mine is exhausted. This scenario can even occur in developed countries with strong oversight mechanisms, the difference being that developed countries have the resources to carry out the cleanup effort in lieu of the bankrupt mining company.

Table 2. Major environmental impacts of agricultural commodity production.

	Deforestation	Excessive Use of Pesticides	Water	Other
Cocoa	Yes	Yes	-	Clearings open way for illegal timber and wildlife exploitation
Coffee	Sometimes (e.g., Ivory Coast)	-	Processing pollutes local supplies	-
Cotton	-	Uses 25% of global insecticides and 10% of pesticides	73% of cotton production is on irrigated land – e.g., disappearance of Aral Sea	Loss of soil fertility
Palm oil	Yes	-	-	Air pollution from clearance fires; soil loss; soil fertility
Soybean	Yes, especially in Brazil and Argentina	-	-	Rapid spread of GM Roundup Ready Soybean (RRSB) increases farmer dependence on chemical herbicide and Monsanto; soil erosion
Sugar	No	No	The third thirstiest of commodities – needs 1,500–3,000 litres per kg of sugar cane	Water pollution from processing run-off
Tea	-	Yes	Yes	Soil fertility

Source: Oxfam; Based on *Better Management Practices and Agribusiness Commodities*, IIED, Rabobank and ProForest, January 2004.

5. Next steps

“How can we cope with this problem? Cotton prices are too low to keep our children in school, or to buy food and pay for health. Some farmers are already leaving. Another season like this will destroy our community.”

Brahima Outtara, artisanal cotton farmer in Logokourani village,
Leraba Province, western Burkina Faso (Oxfam 2002a, 5)

5.1 Past attempts to stabilize commodity prices

Commodity price volatility is certainly not a new problem. Many different policies have tried in the past to tackle it. However, few have been successful for long and some have failed spectacularly.

The international commodity agreements of the 1950s to the 1980s, for example, maintained physical buffer stocks and set production quotas for member states (Box 5). These agreements managed to sustain world prices for a number of products (notably coffee), but the eventual collapse of certain economic clauses contained within the agreements has made them largely ineffective at keeping prices level—a collapse brought about by competitive pressure from producer countries and a withdrawal of support from consumer countries.¹³

Alongside the now mostly defunct international supply management schemes are a number of international initiatives that recompense governments for short-term falls in agricultural export earnings. The primary examples are the STABEX scheme (an EU-ACP compensatory finance scheme designed to stabilize the export earnings of developing countries in Africa-Caribbean-Pacific region—later replaced by FLEX), and the IMF’s Compensatory Finance Facility (CFF). Neither has seen much success however and both languish behind strict eligibility requirements and complex bureaucracy.

It is clear that flexible commodity prices generate some benefits; in particular by setting prices relatively efficiently, which is good for everyone. The problem is that the world economy is structured asymmetrically. Developing countries and producers hold little of the power, reap few of the rewards and yet face much of the risk.

Box 5. Summary of Major International Commodity Agreements

Cocoa: Enacted in 1972; Suspended in 1988. *Price dropped 22% between 1988 and 1989.^a*

Coffee: Enacted in 1962; Suspended in 1989. *Price dropped nearly 17% between 1989 and 1990.^a*

Rubber: Enacted in 1980; Suspended in 1996 and again in 1999. *Price increased 13% between 1999 and 2000.^a*

Sugar: Enacted in 1954; Lapsed in 1963 and again in 1983. *Price dropped 38.5% between 1983 and 1984.^a*

Tin: Enacted in 1956; Lapsed and re-enacted six times before collapsing suddenly in 1985. *Price dropped 30% nearly overnight.^b*

^a data calculated from WB commodity price data set.

^b price difference calculated from Yamey, 1992.

¹³ OPEC has outlasted such commodity agreements because it is technically a cartel, and does not involve consumer countries.

5.2 Income stabilization is the key

The best long-term solution to the commodity price problem is economic diversification away from dependence on a narrow and volatile revenue stream. However, this is much easier said than done. Structural barriers in international trade (tariff and standards escalation) impede diversification. The foreign direct investment necessary to diversify continues to elude the poorest and most fragile states. Commodity price volatility itself can also impede economic diversification by encouraging the dedication of productive assets to straightforward exploitation when prices are high and then denying the investment capacity to diversify when prices are low.

“Price stabilization” conjures images of unwieldy supply side controls, corrupt marketing boards and inefficient command economies. As such, the idea has fallen far out of political favour—to the extent the U.S. joined the International Coffee Organization (ICO) in 2005 only on condition that the ICO never again propose supply management as a way to control prices.

However, it is not price volatility *per se* that is the problem—rather it is the volatility of national and individual *incomes* that complicates long term financial planning, drives commodity dependency, widens inequality and leads to environmental degradation. To reduce overall dependence on commodities, countries and producers first need some semblance of revenue (or income) stability.

It seems there is renewed political interest in the range of options that might be open to help countries and individuals generate more stable and predictable revenues. Although one way to stabilize incomes is through price fixing, there are many other policy options as well—including compensatory financing, differentiation of commodity markets and the use of risk instruments:

Compensatory financing – Compensatory finance mechanisms attempt to smooth out revenue flows by providing relief payments when unforeseen events cause export revenues to drop. The criteria for compensation are typically set by the donors, as are conditions on the use of any compensation (although governments do have some discretion on how funds are distributed). Compensatory grants or loans are typically directed to governments rather than producers. Depending on the program conditions, some of the funding is passed on to affected producers directly or through development projects.

National revenue management – There has been a recent increase in the use of revenue management laws introduced at a national level to manage high-value, state-owned commodity revenues—typically from hydrocarbon exploitation. These laws attempt to achieve several purposes: isolating revenues from short-term domestic political interests, increasing transparency of revenues, ensuring a pre-determined quantity of the revenue is spent on health and education, and saving surplus revenues when commodity prices are high—to be used in times of shortage (so-called “rainy-day” funds).

Commodity supply management – Supply management, such as that used in past commodity agreements, aims to lower the supply of a commodity relative to demand, in an effort to stabilize (and increase) prices and revenues for producers and producing countries in the

long term. This is often the first method turned to when searching for commodity revenue stabilization options. It can come in a number of forms: national or domestic, quota-based or supported by a buffer stock. However past efforts to control commodity supply have largely resulted in failure.

Commodity price risk management instruments – Commodity-price risk management uses financial instruments to manage price risks—rather than reducing price volatility itself. Risks are not transferred to the government, as they are in stabilization schemes, but are rather re-allocated among private traders (South Centre 2004). Examples include futures and forwards contracts, commodity swaps, call and put options, commodity-indexed bonds and long-term contracts. Market access, infrastructure and the design of the instruments themselves still require strengthening for widespread use, however an expansion in commodities trading and the recent establishment of commodities exchanges throughout the developing world points towards their future usefulness.

Voluntary regulatory systems/ standards-based niche markets – Organic and fair trade networks can also reduce the vulnerability of farmers and communities to commodity price volatility. Such networks typically allow farmers to charge a premium for their product, reduce input costs (i.e., fertilizers) and guarantee an agreed upon, fair price. However they are not without their drawbacks: niche markets remain a small portion of the overall demand for many commodities and entry can be difficult and expensive.

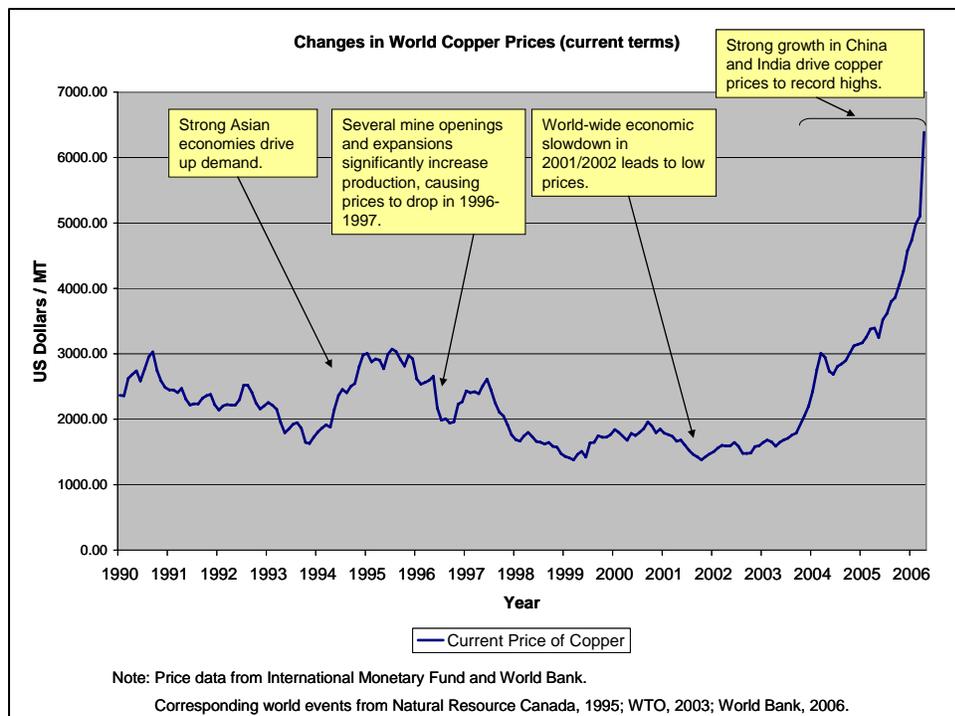
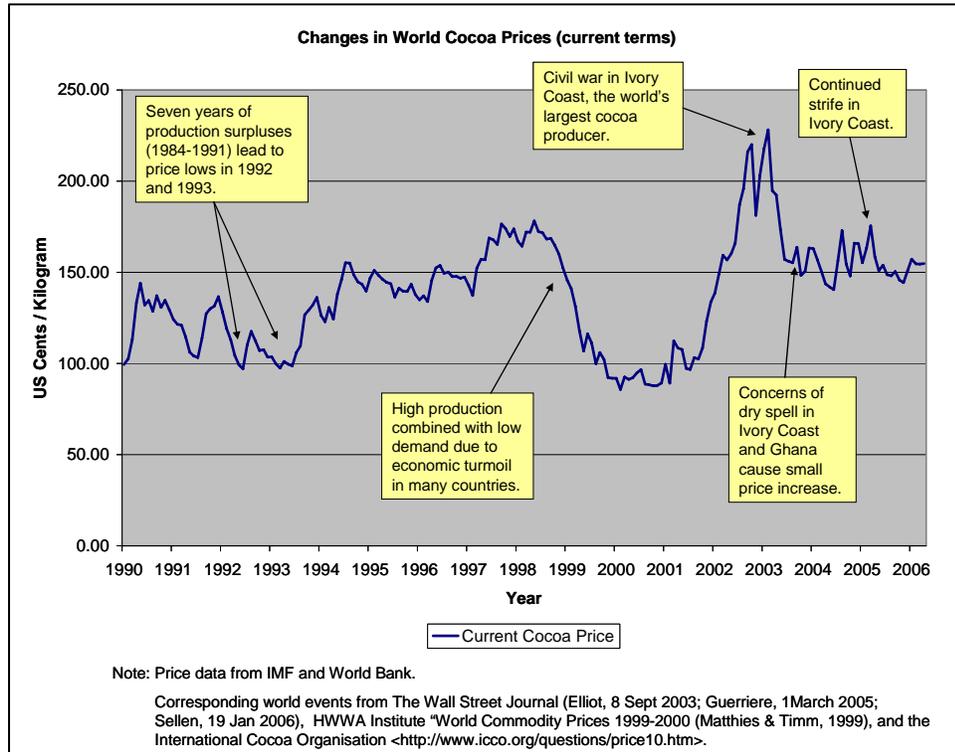
5.3 Looking forward

What seems clear from past failures is that there is no single answer and that any effective response will require several complementary approaches. Some realities must simply be accepted. Currency regimes will not revert from floating to fixed rates, so relative exchange rates will continue to impact producer and country revenues even if prices are stable. It is unlikely that the World Bank or IMF will support re-institution of national commodity supply boards. And the idea of price supports will continue to be greeted with disdain for some time to come.

But it is clear that some sort of action is necessary—despite the stigma surrounding active intervention. Once that psychological hurdle is cleared, some critical questions must be answered: How should an income shock be defined, and how big a shock is too big? And how can policies avoid perverse incentives and rent-seeking behaviour?

The livelihoods of a third of the world's population are directly tied to commodity production, primarily in the rural areas of developing countries. As a recent meeting of the UNCTAD Secretariat noted, “As a result of recent and expected developments in demand for commodities, now is the best opportunity in many decades for improving the economies of commodity-dependent developing countries. This requires action by developing-country governments and by the international community” (UNCTAD, 2005c).

Appendix: Drivers of volatility in cocoa and copper prices



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