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# GALT Update

Trade in commodities

There was a time when international trade was dominated by trade in commodities. However, with economic development, trade in manufactured goods, and more recently, trade in services gained prominence. Currently, commodities account for about 27% of the global merchandise trade, while fuels alone account for about 15%. Nevertheless, for a large number of developing countries, what matters more is what happens in the realm of trade in commodities. For many of them, export of commodities is nearly the only source of export earnings. For another group within them, though their major export items are commodities, they remain net food-importing countries.

Historically, not only have the global prices of commodities been volatile, commodities in general have been experiencing adverse terms of trade. For a large number of exporters of commodities, particularly of agricultural goods, years of glut meant crashing of prices and hence no boost in the earnings. On the other hand, high prices came almost invariably with shortage of commodities and consequent lower exports, therefore causing no improvement in the export earnings.

Exporters of energy commodities have, however, generally been able to get better deals due to the absolute necessity of the goods, as well as their ability to decide on collective strategies. However, the beneficiaries have been only a few developing countries that have energy resources, while difficulties had to be shared by a large

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### News in brief

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number of developing countries, along with the developed countries. In fact, the non-energy exporting developing countries have suffered more on account of their lower ability to pay.

Another aspect of the global commodity market is that each of its segments is generally dominated by a few large traders, giving them tremendous market power, putting small and poor developing countries at a disadvantage. It may be recalled that it was the alleged dominance of some large oil companies that triggered the nationalization of oilfields in several countries and led to the birth of OPEC (Organization of Petroleum Exporting Countries).

Another aspect of global trade in commodities, particularly agricultural goods, is that many current and potential exporters have suffered due to high subsidies, as well as standards in the developed world.

The global commodities market, although experiencing high prices in general, can attribute the price rise largely to the high demand in China and, to a lesser extent, in India. Another development that has drawn wide attention is the emergence of biofuels, which has the potential to keep agricultural prices high even in the long run.

Will the current high prices continue to prevail in the long run? Will commodity-exporting developing countries be able to take advantage of high commodity prices? Will increasing trade in biofuels cause a threat to food security and pose environmental problems due to related conversion of arable and forest lands? Will the advent of China and India as major buyers, earlier comprising some developed countries, change the global scenario? These are some of the major questions that are being raised in the context of trade in commodities. The answers are, obviously, not yet known.

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# Issues in commodity trade: a developing country perspective

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## Introduction

The literature on commodity trade has consistently brought out the fact that many developing countries, including LDCs (least developed countries), sub-Saharan African countries, and small and vulnerable economies, had failed to benefit due to problems related to overdependence on the commodities sector and with associated volatile commodity prices. Most of them had difficulty in diversifying from exports of a few commodities because of a lack of productive capacity and investment. However, as commodity prices are now increasing for some time, the new challenge is how the benefits from rising prices can be transformed into broad-based and inclusive development for these countries. At the same time, the issue of high prices has also posed the challenge of food security issues for the food-importing low-income countries. The commodity price boom, especially in respect of energy commodities (biofuels), had generated windfall revenues for many energy-exporting countries. However, many other developing countries, in particular the LDCs and other small and vulnerable economies, remained excluded from the new trade dynamism. In many countries, a shifting of production from food crops to energy crops for biofuels (and also use of food crops for production of biofuels) is visible, which is also leading to rising food prices. In 2007, this contributed to an overall 15% increase in the index of agricultural prices and a 20% rise in food prices globally (World Bank 2008). A shift from food production to production of energy crops will pose the challenge of food shortages in the medium run. Several reports<sup>2</sup> also highlight that under present trade rules, rich nations, which are the biggest consumers of biofuels, dictate the price terms, making it disadvantageous for developing country producers and exporters of biofuels.

This article reviews the trade pattern and movement of commodity prices in recent times. It also analyses the commodity consumption patterns of India and China, the two most important developing country importers of commodities. The new challenges coming up from rising commodity prices and asymmetric benefits are also highlighted, and possible ways out are indicated.

## Trade in commodities

The world economy is projected to slow down the global activity and moderate the demand for commodities, resulting in a modest decline in their prices and slower volume of growth. As a result, exports from the commodity sector will grow but its contribution to the overall growth will come down. Overall, the growth in GDP (gross domestic product) among commodity exporters is projected to slow down to less than 4% in 2008. Commodity importers also will feel the effect of slower global and US growth. In case of Mexico, the anticipated cycle in the US is expected to be reflected in slower exports and growth. For most commodity importers, the slowdown is expected to be less marked (from 4.6% to 4%, excluding Mexico), in part because many countries have considerable spare capacity (World Bank 2007).

Though according to the projected scenario in 2008, the commodity trade growth will slow down, the last few years experienced a significant rise in commodity trade both from developed, as well as developing countries. This was fuelled by the demand growth in large developing countries such as China and India. Trade among developing countries is growing as a share of total commodities trade (Table 1).

Table 2 provides a detailed picture of the trade dynamics of commodities in the last 10 years. Developed countries have remained the major players in exporting

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<sup>2</sup> Details available at <http://www.energybulletin.net/25317.html>, last accessed on 5 March 2008

**Table 1** South–south commodity trade (including fuels) by regions, 2000 and 2004

Region	Share of commodity exports to developing countries, % of total		Share of commodity imports from developing countries, % of total	
	2000	2004	2000	2004
Africa	28	31	33	38
America	23	26	28	32
Asia	44	48	51	55
All developing countries	39	44	45	50

**Source** UNCTAD (2007a)

**Table 2** Trade in commodities (value in \$billion)

Category	Year	Agricultural raw materials			Food items			Ores and metals		
		Developed countries	LDCs	WTO developing members	Developed countries	LDCs	WTO developing members	Developed countries	LDCs	WTO developing members
Developed countries	1995	59.71	0.42	12.27	187.68	3.50	29.43	65.49	0.12	9.88
	2000	54.54	0.43	12.47	200.65	3.41	30.19	76.15	0.15	12.59
	2003	54.38	0.46	16.07	261.87	4.26	35.46	80.09	0.16	17.28
	2006	65.91	0.56	25.78	329.01	5.29	47.98	179.17	0.31	51.14
LDCs	1995	0.36	0.04	0.32	1.96	0.20	0.20	1.06	0.19	0.41
	2000	0.35	0.14	0.29	2.13	0.22	0.51	1.15	0.08	0.19
	2003	0.51	0.30	0.52	2.38	0.43	0.56	0.92	0.13	0.25
	2006	0.33	0.12	0.27	2.51	0.52	0.74	3.42	0.03	1.46
WTO developing countries	1995	13.85	0.10	5.09	56.96	2.56	21.78	19.99	0.11	5.59
	2000	12.67	0.16	5.50	61.90	2.70	22.72	23.75	0.13	7.75
	2003	13.66	0.22	7.53	73.21	4.80	32.31	26.38	0.24	12.09
	2006	20.94	0.28	14.02	103.24	7.78	47.82	76.76	0.41	41.74

LDCs – least developed countries; WTO – World Trade Organization

Note The product groups (such as agricultural raw materials, food items, and ores and metals) are as per *South–South Commodities Trade: quantitative report*; UNCTAD, UN, New York and Geneva, 2006

**Source** Calculated from WITS (World Integrated Trade Solution) ([www.wits.worldbank.org](http://www.wits.worldbank.org)) using UN COMTRADE (United Nations Commodity Trade Statistics) ([www.comtrade.un.org](http://www.comtrade.un.org)) database

food items, agricultural raw materials, and ores and metals. Though they export mainly to developed countries, their share of total commodity exports to developing countries is increasing significantly. Among the three major product categories, developed countries experienced the highest export growth (CAGR [compound annual growth rate]) of around 16% during the period 1995–2006) in ores and metals export to developing countries. Middle-income developing countries are fast becoming a major market of developed country exports of commodities. The commodity markets in India and China are notable in this context.

LDCs find major markets in developed countries, especially in food items and ores and metals. Total commodity exports from LDCs in 2006 were around \$9.5 billion, increasing from around \$4.75 billion in 1995. The CAGR during this period has been around 6.4%.<sup>3</sup>

Developing country members of the WTO (World Trade Organization) are also important exporters of commodities, and in recent times, they are experiencing very high growth in most of the product categories. Other developing countries are also significant markets for developing country exports

<sup>3</sup> Calculated from UNCTAD (2008)

of commodities. Total exports of commodities from WTO developing members were around \$313 billion. Out of these, only around \$8.5 billion is going to LDCs and around \$104 billion is going to other developing countries. Hence, though South–South trade in commodities is increasing, developed countries are still the major market for LDCs or developing countries’ exports of commodities. LDCs and developing countries mainly export primary commodities and raw food items. The export basket of developed countries, on the other hand, contains value-added products. As a result, LDCs and developing countries suffer from low-price elasticity syndrome of their exports, and developed countries reap the major benefits due to value addition in their commodity exports (such as organic food). Apart from this, high standards and other market-access-related issues in developed countries hamper the export growth of commodities from the developing world (South Centre 2005). There is an urgent need for mechanisms and resources that allow developing country interests to influence the procedure for setting standards, and for technical assistance to enable developing country producers to meet standards. The standard-setting process in LDCs and developing countries is important in this context and requires support from national governments, multilateral bodies, and private as well as cooperative sectors.

### Trend in price movements

The rapid growth in commodity demand has also been associated with rising prices. Price indices of all commodity groups have shown a rising trend. However, the overall rise of commodity prices was influenced by the increases in the prices of minerals, ores and metals

as well as of crude oil, which rose by 41% and 27% per year respectively between 2003 and 2006. The minerals and metals price index reached record levels in 2006 (about 240% of the average in 2000–05) (UNCTAD 2007a). Rise in mineral prices have led to unprecedented move towards concentration of mining companies. The trend is towards the creation of mining groups with diversified interests in various minerals, with the objective of reducing price risk.

Table 3 explains that in general, except crude oil, prices of most of the commodities dipped during 1998–2002. However, the prices rose thereafter. Price rise of minerals, ores, and metals were spectacular. In case of crude oil, the price rose continuously with relatively steeper rates since the late 1990s. Price growth has shown an indication of slowing down in 2007. The price index calculated from the first 10 months’ data in 2007 reveals that for food, the average price index is 144.43; for beverages it is 142.06; and for agricultural raw materials it is 161.26.

The detailed price rise since 2000 is described in Table 4. This shows that there has been a secular rise in prices but the jump is quite significant between 2005 and 2006 except vegetable oilseed and oils. Table 4 shows conclusively that the price rise in commodities is mainly driven by mineral and crude oil prices during 2003–06.

Developing countries that received significant benefits out of this price increase are those that mainly export oil and mining products. The gain ranges between 3% and 6.7% of the GDP during the period 2003–05. On the other hand, countries from East and South Asia mainly lost around 1% of GDP, as they primarily export manufacturing products and import raw materials (UNCTAD 2007a). For other developing countries, the gain due to price rise has been dependant

**Table 3** Average commodity price indices, 1994–2006 (year 2000=100)

	Average prices			Average annual growth rate (%)			Prices 2006
	1994–1997	1998–2002	2003–2006	1994–1997	1998–2002	2003–2006	
All groups (in current)	132.73	101.27	138.38	2.0	-4.0	20.0	182.1
Food	135.50	104.15	125.22	2.0	-3.0	13.0	151.0
Trop. beverages	159.37	107.15	113.09	5.0	-11.0	12.0	132.4
Agr. raw materials	136.04	98.94	130.54	-1.0	-3.0	11.0	154.1
Minerals, ores and metals	114.00	91.15	170.25	3.0	-1.0	41.0	272.9
Crude petroleum	63.76	77.14	157.78	8.0	21.0	27.0	205.8

Source UNCTAD (2007a)

**Table 4** Price indices of commodities

	2000	2001	2002	2003	2004	2005	2006
Price index - all groups (in terms of current dollars)	100	96.43	97.21	105.11	126.06	140.79	183.57
Price index - all groups (in terms of constant dollars)	100	98.40	98.62	97.64	108.23	117.92	148.58
All food	100	99.64	102.54	106.77	120.84	128.44	149.36
- Food	100	102.77	102.23	104.13	118.58	127.16	151.33
- Tropical beverages	100	79.38	88.66	94.13	100.16	125.68	134.11
Vegetable oilseeds and oils	100	93.58	116.85	137.18	155.34	140.60	147.65
Agricultural raw materials	100	96.12	93.79	112.36	127.36	132.32	152.18
Minerals, ores and metals	100	89.24	86.80	97.58	137.29	173.22	277.68
Crude petroleum, average of Dubai/Brent/Texas equally weighted (\$/barrel)	100	86.69	88.40	102.40	133.80	189.10	227.76

**Source** Calculated from UNCTAD (2008)

on several conditions such as prices, as well as price elasticities of the commodities they are exporting and the share of oil in their imports. In 2005, for instance, terms of trade for coffee exporters tended to improve, whereas those for cotton or soybeans exporters deteriorated.

Almost 80 developing countries are highly dependent on export of commodities. Hence, their economies are subject to volatility in volumes and prices, which results in large fluctuations of their export income. Variability impacts on income stability, inflation and competitiveness and eventually economic growth. Most of these countries are vulnerable to commodity price shocks not only because of their great dependence with respect to export earnings from a few commodities but also because of their limited capacity to resist shocks. Table 5 provides information on price instability and trend. The measure of price instability is  $(1/n)$

$\sum[(|Y(t) - y(t)|) / y(t)] \times 100$ , where  $Y(t)$  is the observed magnitude of the variable.  $y(t)$  is the magnitude estimated by fitting an exponential trend to the observed value and  $n$  is the number of observations. It is clear that instability has come down drastically in case of tropical beverages during the latter half of the 1990s but increased thereafter. Apart from crude oil, the prices of all products show a negative trend during 1997–2001 but turned positive in the new millennium. The trend in minerals and crude oil price has been significantly high during 2002–06. Though price instability in case of crude oil came down during 2002–06 compared to 1997–2001 but is still high compared to other product groups. In case of food, though instability has declined, the price volatility remains high in case of cocoa, coffee, and cotton, which have around two to four times greater price variability than do all food products.

**Table 5** Price instability and trend of commodities

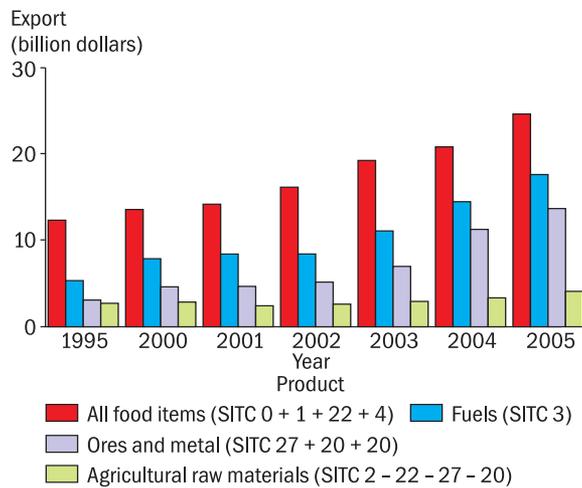
	Price instability indices			Price trends (in current dollars)			Price trends (in constant dollars)		
	1992–1996	1997–2001	2002–2006	1992–1996	1997–2001	2002–2006	1992–1996	1997–2001	2002–2006
All commodities	5.11	4.63	4.97	5.51	-7.60	15.45	3.41	-4.38	10.06
All food	4.23	5.38	3.95	6.21	-9.45	9.16	4.11	-6.23	3.79
Food and tropical beverages	4.30	6.28	4.39	5.90	-8.66	9.70	3.80	-5.44	4.33
Food	5.12	6.88	4.61	4.96	-7.34	9.57	2.86	-4.12	4.20
Tropical beverages	18.43	5.25	6.12	15.00	-19.76	10.92	12.88	-16.58	5.54
Vegetable oilseeds and oils	6.49	10.16	7.66	8.48	-15.52	5.22	6.37	-12.33	-0.13
Agricultural raw materials	6.98	5.18	4.40	5.71	-5.77	11.26	3.60	-2.55	5.88
Minerals, ores and metals	10.42	8.15	8.64	3.52	-3.64	28.75	1.42	-0.41	23.30
Crude petroleum	9.61	21.34	8.77	2.91	12.23	25.10	0.81	15.50	19.66

**Source** Calculated from UNCTAD (2008)

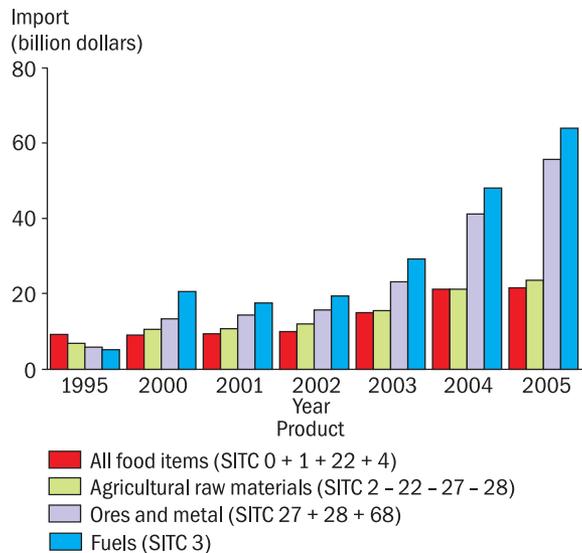
### India and China in commodity trade

Among developing countries, India and China are the major players in commodity trade. A comparative analysis shows that during the period 2000–05, China’s export growth of commodities was around 16% and that of India was around 25.5%. China exported around \$60 billion worth of commodities in 2005 and India, \$30.2 billion. China’s export basket mainly consists of food, fuels, and ores and metals, while India’s primary export in 2005 consisted of fuels. Both these countries are also significant importers of commodities. During 2000–05, China’s commodity import growth was around 25.2% and that of India was 21.8%. In 2005,

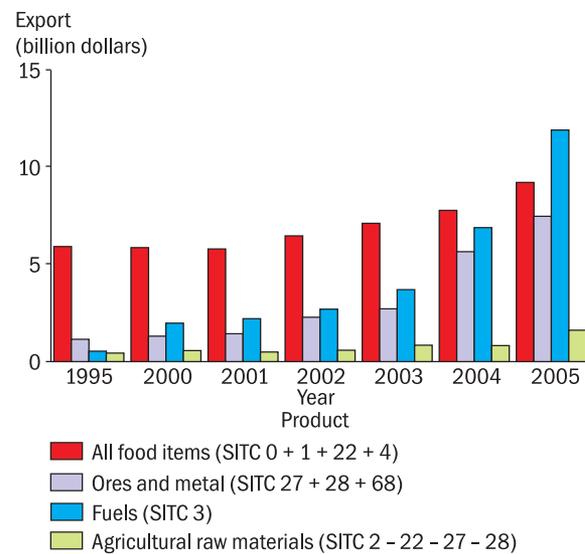
China’s commodity import was around \$164.8 billion and India imported about \$65 billion. Both these countries are large importers of fuels (\$64 billion and \$50.5 billion for China and India, respectively). Apart from this, China also imports significant amounts of fuels, ores and metals, and food items. It is important to note that China is engaged in both-way trade of most commodities, while India’s commodity trade is largely consists of fuels and petroleum products. China imports large amounts of food items but India’s import of food products is minimal (\$4.6 billion in 2005). The details of commodity trade of India and China are given in Figures 1–4.



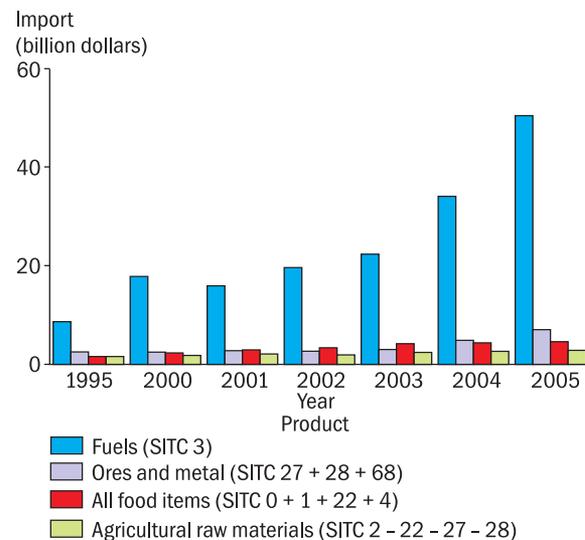
**Figure 1** China’s export of commodities  
Source UNCTAD (2008)



**Figure 2** China’s import of commodities  
Source UNCTAD (2008)



**Figure 3** India’s export of commodities  
Source UNCTAD (2008)



**Figure 4** India’s import of commodities  
Source UNCTAD (2008)

## **Other issues**

UNCTAD (United Nations Conference on Trade and Development) studies highlight that more than 60 countries in the world depend on non-fuel commodities for almost half of their export earnings (UNCTAD 2002). If we include fuel, the number goes up beyond 90. For many of these countries, export earnings are derived from only a very small number of commodities. Sixty-nine countries received more than half of their export earnings from three commodities (including fuels, and counting different processing stages as individual commodities) in 1990/92, and 70 during 1998–2000. Thus, commodity export dependence and export concentration have not decreased significantly. The main reasons due to which these countries are unable to confront the price fluctuations include the lack of diversification and supply capacity. As mentioned above, the real challenge during the time of rising commodity prices are (1) how to improve the supply capacity and (2) how to transfer the gain to broad-based development. Price increase is not symmetric across the products and several food-importing countries are facing a crisis due to their difficulties in paying the food bill. The food security issue has also come up due to increasing use of food crops for production of biofuels, which have led to large increases in the prices of vegetable oils and grains.

Studies have made attempts to identify the reasons behind commodity-trade-related distress in many LDCs. The secular decline in prices (with occasional rise and high volatility) has created havoc. Farm gate prices always remained depressed and farmers could not get much benefit. Price fluctuations increased income uncertainty, and hence, farmers were unable to make sufficient investment, which hampered productivity. The economics of low price forced several countries to produce more, so that their export revenue remained buoyant. However, this created oversupply and prices fell further. A number of commodity markets, particularly coffee and cocoa, have had sustained oversupply of commodities for over a decade. Technological changes also contribute to oversupply by increasing productivity and expanding production at a rate that outstrips both population and demand growth. Technological advances have also allowed the introduction of synthetic substitutes, displacing commodities as primary or intermediate inputs in the production process.

The change in institutional environment in most of primary producing developing, as well as in LDCs, have

also played a role in creating problem. In the 1970s and 1980s most governments had interventionist policies related to commodity markets, which contributed to stabilizing the prices. International commodity agreements also used to play a crucial role. The elimination of international and national stabilization mechanisms due to a wave of globalization based on the Washington Consensus policy exposed commodity producers in developing countries to the vagaries of market forces and to the resulting increased swings in international prices of commodities and ensuing commodity crises. The commodity market reforms in developing countries created institutional vacuums, in the sense that centralized mechanisms such as marketing boards, (which were once used to organize the flow of inputs, outputs, credit research, market information and training) were no longer available and no other institutional mechanisms were put in place to replace them to handle market failure in commodities. In the absence of government-guaranteed minimum prices, the control of prices by corporate buyers was reinforced. Since these mechanisms disappeared, a weaker cohesion between actors (for instance, within farming organizations and within farming enterprises) is now being observed.

Increased vertical concentration along value chains of commodities and the role played by MNCs (multinational corporations) in commodity markets are also responsible for developing countries not deriving the benefits from commodity markets. This is very common in food commodities, where trade within MNCs account for about 60% of all global trade (South Centre 2005). Due to monopolistic power at different stages of the value chain, these companies have the capacity to develop efficient market intelligence and facilitate large-scale operations. Most large trading companies are also engaged in commodity processing, sourcing them directly from exporting countries to take advantage of economies of scale in transport, storage and processing. As a result of these, prices at the farm gate or mining pit remain depressed but prices at the higher end of the value chain increase. In view of the asymmetry in market power, although producers in developing countries may associate themselves in order to sell to manufacturing companies, they cannot influence prices. As a classic example, we can mention that only four large companies account for nearly 80% of the global trade in cocoa, and another four cover 75% of the coffee

trade and just three companies now control almost half the coffee roasting in the world (South Centre 2005)

Market access barriers undermine developing countries' ability to enter into high-value added segments of commodity value chains. As a result, commodity-dependent developing countries find themselves confined to the production of primary commodities. Developed country markets are protected due to tariff escalation, SPS (sanitary and phytosanitary) and TBT (technical barriers to trade) standards. Standards in developed countries vary from time to time and become more stringent and as a result, developing country exporters are not able to adjust (for example, SPS levels in Quad countries in case of vegetables and fruits move upward) (South Centre 2005). On the other hand, subsidies have pushed down world prices for many agricultural commodities such as cotton and sugar by inducing surplus production, and by financing dumping in international markets, have shielded non-competitive producers in developed countries.

## **Conclusion**

The strategies to handle the problems in the commodity market may be divided into direct and indirect approaches. The direct approach is required to deal with short-term problems such as price fluctuation and risk management. The indirect approach is necessary for medium and long-term development, which includes diversification of products, possibility of regional trade, investment in human capital and technology, and so on. Under the direct approach, supply management programmes may be reintroduced considering the existing ground reality. A supply management programme can be defined as a policy tool in case of market failure, which controls the production and supply of a commodity in order to achieve a desirable price objective in a relevant market (domestic or international).

In the short run, to handle the risk and uncertainty, investment is required for developing information network for commodities, so that growers have full knowledge about price and other information that can help them to bargain properly. Reduced asymmetries of information will enhance market transparency and enable farmers to take a right decision. Improvement in infrastructure for the entire logistic chain is also necessary for better value realization. Procuring from the hinterland is sometimes difficult due to information

failure and poor infrastructure. To mitigate the short-run uncertainty, attention may be given in this direction.

It was recognized that lack of access to credit was one of the main bottlenecks for farming activities, especially in developing countries. In a risky environment, structured finance provides tools for improving access to credit along the supply chain. Several countries are making an attempt to handle credit-related issues through innovative ways. FIRA (the Mexican trust fund for agribusiness and fisheries) is an example of an innovative way to integrate small producers into the supply chain and cope with market failures/imperfections (UNCTAD 2007b). FIRA acts as a second-tier bank, which provides funding and credit guarantees to the banking system. It designed a facility that allowed trading companies to maintain the current relationship with suppliers while reducing the leverage of its balance sheet and its credit exposure. Commodity suppliers were to receive loans in a timely manner and in a sufficient amount that allowed them to reduce their financial expenses and the financial system to expand its investment opportunities by creating debt instruments that could be easily assessed and priced by banks, with reduced risk and transaction costs. FIRA is a successful example in tackling traditional problems in credit markets, such as asymmetric information, transaction costs, insufficient collateral, and weak enforcement of property rights. This concept may give Indian policy-makers an idea about how to handle agriculture loans, which itself is a prime economic concern at this moment. Instead of developing a sustainable credit market since independence, the Indian government has always sought a short-term solution, which never improved the market situation even in the medium term.

In the long run, growers need to diversify their product basket to reduce their dependence on the limited number of products. Horizontal diversification involves encouraging farmers to grow an alternative cash crop to augment their income. Vertical diversification, on the other hand refers to the transformation, through processing and marketing, of the original commodity into a higher value-added product that may have better prices once marketed. However, the right strategy of diversification requires proper understanding of all related issues. There are examples of a number of

failed attempts worldwide where mindless investment has been made (sometimes with government support) without taking into account the consequences.

Policy coherence at the national level is also very important for sustainability of the commodity market. It is important to draw lessons from history in order to identify appropriate conditions in which various policies could have an effective impact on development. Different policies of other countries should be closely observed to identify the right policy mix to increase the capabilities and competitiveness, including in the areas of education, human capital, and acquisition of technology. State support to infant industries is important; however, it should be well conceived and time-bound. Under the current situation, regional trade may be an instrument to increase the market access in other developing countries. South–South trade is currently increasing by leaps and bounds and hence poorer countries will find a market in other developing countries for their commodities.

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# Volatility of international commodity prices

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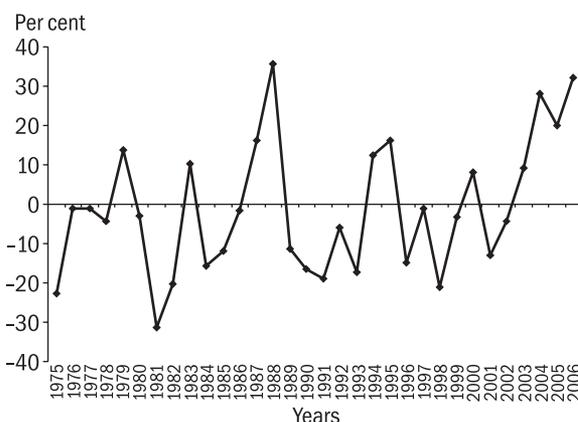
## Introduction

The upswing in prices of fuel and non-fuel commodities over the last few years has been a much talked-about development, with different observers putting forward different arguments in this regard. The prices of non-fuel commodities such as metals and minerals in international markets have risen quite sharply in recent years. This development with regard to metals has been rather exceptional; as their prices have increased by nearly 240% since early 2003. Figure 1 shows that this is the biggest increase experienced by real prices of metals since the late 1980s.

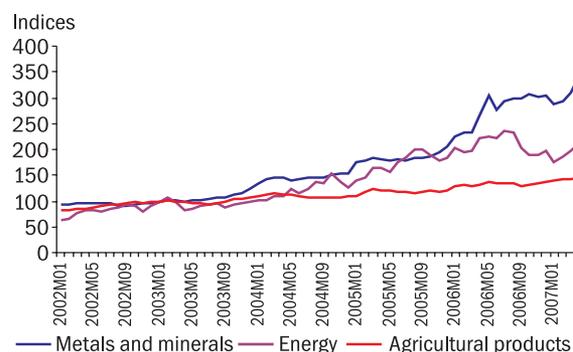
The prices of agricultural commodities too have registered an increase; although this increase has been relatively moderate—around 44% during early 2003 to April 2007 (Figure 2).

Many observers opine that the high metal prices have been mainly responsible for the recent upsurge in non-fuel commodity price indices. The present surge in the prices of metals and minerals is widely seen as a result of rapid economic growth of developing countries, particularly China. China's rapid economic growth since early 2000s, its industrial expansion, in particular, has boosted its demand for metals like steel, aluminium, and copper. For instance, during 2002 to 2005, China accounted for almost the entire increase in the world consumption of nickel and tin. And, for aluminium, copper and steel, China accounted for almost 50% of the world consumption growth (IMF 2006). Thus, the world demand for these metals has increased significantly, affecting their international prices.

Also, several observers have pointed out that the recent surge in interest of financial investors in the commodity market has played a significant role in pushing up the commodity prices in international markets. Driven by the low interest rates on US treasury bonds, many financial investors have opted for other



**Figure 1** Annual growth of real price of metals (%)  
**Source** IMF (2006)



**Figure 2** Global commodity prices  
**Source** World Bank (2008)

assets such as future contracts based on commodities, pushing prices further and increasing their volatility (CBB 2006).

Moreover, the prices of many metals have increased also because of a host of other factors, such as low stocks, rising production costs, and supply shortfalls. For instance, the world stocks of nickel, lead, copper, aluminium, and zinc are at their lowest levels, and their prices have soared (CBB 2006).

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Prices of some of the agricultural commodities, such as coffee, natural rubber and sugar, have also increased in recent years. This price rise, according to some observers, has been mainly because of a weaker dollar, high fertilizer and energy prices, some crop-specific supply shortfalls, low stocks, and droughts. A growing interest in biofuels, because of high oil prices, has also stepped up the demand for many agricultural commodities. For instance, sugar prices rose mainly because of the increasing demand for production of ethanol for automotive fuel in Brazil. Likewise, there was a rise in the prices of natural rubber because of its use as a substitute for synthetic rubber made from petroleum products. Although agricultural commodity prices have increased in recent years, this price increase is quite moderate in comparison to their historical levels (in fact, agricultural commodity prices have fallen by 56% in terms of US\$ over the last 46 years (World Bank 2007). However, it must be kept in mind that despite recent increases, the prices of most non-fuel commodities remain below their historical peaks in real terms. According to the *World Economic Outlook 2006*, over the past five decades, commodity prices have fallen relative to consumer prices at the rate of about 1.6% a year. Compared with the prices of manufactures, however, commodity prices stopped falling in the 1990s as the growing globalization of the manufacturing sector slowed producer price inflation.

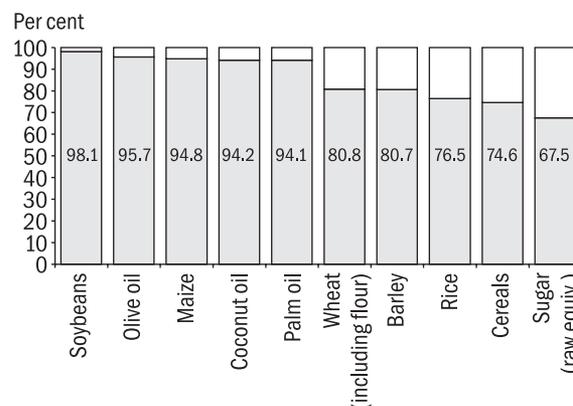
The question that has caught the attention of analysts to a far greater extent is: for how long would the recently observed rise in commodity prices sustain? The decline in the growth of the US housing and automotive sectors could dampen the growth of several economies across the world. Chinese consumption of metals could decline in the coming years, and creation of additional capacity could ease the supply constraint in non-fuel commodities. Because of all such factors, metal prices could decline in the coming years. Some observers are of the opinion that agricultural commodity prices too could decline over the next few years.

Thus, along with the rise in prices of the non-fuel commodities in the international market, volatility of these commodity prices has also increased. A sizable number of developing countries are exposed to this price volatility, especially that relating to agricultural commodities. Given the importance of agricultural trade for developing countries, the volatility of

agricultural commodity prices could have serious implications for them with regard to food security, livelihood security and rural development. The following section of the paper focuses on the issue of volatility of agricultural commodity prices.

### Volatility of agricultural commodity prices<sup>3</sup>

Historically, agricultural commodity prices have been quite volatile. A number of factors, both from supply and demand side, contribute to this high volatility. From the supply side, a distinguishing feature of international agricultural trade is that only a limited number of exporting countries dominate international trade (Figure 3). The figure shows that for certain crops, the share of the top five exporters can account for as much as 98%. Even for a widely produced crop like rice, the share of the top five exporters is more than 76% and for all cereals, the share of the top five is almost 75%. As a result of this trade pattern, abnormal weather conditions or any other supply shocks in those exporting countries tend to have a very high impact on the aggregate supply and hence on international prices. The supply side scenario is further complicated because exports of some major agricultural commodities are dominated by a few large-scale multinational 'grain majors' and export state trading enterprises ('single desk sellers'). Therefore, any disturbance affecting a small number of suppliers tends to have an exaggerated reaction on the commodity prices at the international level.<sup>4</sup>



**Figure 3** Share of top five exporters in the world market

**Source** Grethe and Nolte (2005)

<sup>3</sup> This section of the paper draws substantially from Pal and Wadhwa (2007).

<sup>4</sup> It is interesting to note here that to describe the current structure of agri-business, the analogy of an hourglass is often used, with a large number of producers and buyers at the two ends and a very small set of processors and sellers in the middle.

Furthermore, for agricultural commodities, a small percentage of the total production actually enters trade. Therefore, compared to total usage of these commodities, the exportable surplus is very low. For example, only about 4.5% of the total rice production is destined for the international market. For wheat, the ratio is about 18.5% (FAO 2008). To put these figures into perspective, world rice trade is only about 20%–22% of India's rice production. Because of this 'thinness' of the world agricultural market, any large import demand from any of the medium or large importing countries can have a major impact on world prices (Parikh 1998).<sup>5</sup> An example of such an experience was the sudden rise in the price of major agricultural commodities in 1972, when world agricultural production fell because of abnormal weather conditions worldwide. The former Soviet Union's purchase of a huge amount of food from the world market further aggravated the situation. A more recent example is the large amount of grain purchase by Indonesia in face of the Asian financial crisis (WTO 2000).

To a certain extent, the shallowness of world commodity markets is attributable to measures like domestic and export subsidies undertaken in the developed countries. Subsidization results in depressed world prices and keeps many potential exporters away from the market. Recent findings of the WTO (World Trade Organization) DSB (Dispute Settlement Board) on sugar and cotton subsidies have established the causal relationship between farm subsidies, overproduction of subsidized products and the consequent decline and volatility of international commodity prices.<sup>6</sup>

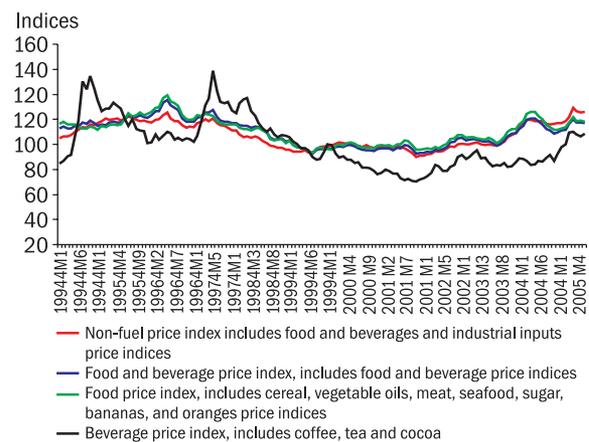
The problem of commodity price instability was recognized during the Uruguay Round and one of the major objectives of the Agreement on Agriculture was to reduce the instability of international agricultural trade. The Ministerial Declaration launching the Uruguay Round says: *'There is an urgent need to bring more discipline and predictability to world agricultural trade by correcting and preventing structural surpluses so as to reduce the uncertainty, imbalance, and instability in world agricultural markets.'*

It was expected that once AoA (Agreement on Agriculture) managed to remove distortions that plagued global farm trade, more countries would be in a position to participate in the international trade in agricultural goods. By increasing the number of countries that are open to world price signals, 'shocks' (arising, say, from unexpected production shortfalls) would be absorbed by a greater number of markets, thus cushioning the effect of such shocks on world prices. Therefore, it was hypothesized that the UR (Uruguay Round) AoA would bring down price instability in global farm trade.

However, if one looks back it appears that agricultural prices have remained quite volatile (Figure 4). To ascertain whether international agricultural price instability has reduced since the implementation of the AoA, we calculated the volatility of international commodity prices for the pre- and post-WTO period.

We have used two methods to calculate the volatility of international commodity prices. The first method is the standard measure of coefficient of variation, which is calculated as a ratio of standard deviation and mean.

The second measure is taken from UNCTAD (United Nations Conference on Trade and Development) and is called the 'Instability Index'.



**Figure 4** Movement of price indices during the WTO implementation period

Source IMF (2006)

<sup>5</sup> The author has estimated that if India enters the world rice market as an importer of 2.5 million tonnes, it will increase the international price by 24% and if it imports 5 million tonnes of rice, it will increase the international rice price by 72%.

<sup>6</sup> United States - Subsidies on Upland Cotton, Report of the Panel, WT/DS267/R (8 September 2004), appealed by the United States at the meeting of WTO Dispute Settlement Body (18 October 2004) (hereinafter Cotton Panel Report) and European Communities - Export Subsidies on Sugar, Reports of the Panels, WT/DS265/R, WT/DS266/R, & WT/DS283/R (Oct. 15, 2004), Report of the Appellate Body, WT/DS265/AB/R, WT/DS266/AD/R, & WT/DS283/AB/R (28 April 2005).

Instability Index is represented in the following way.

$$\text{Instability Index} = 1/n \sum [ ( | Y(t) - y(t) | ) / y(t) ] \times 100$$

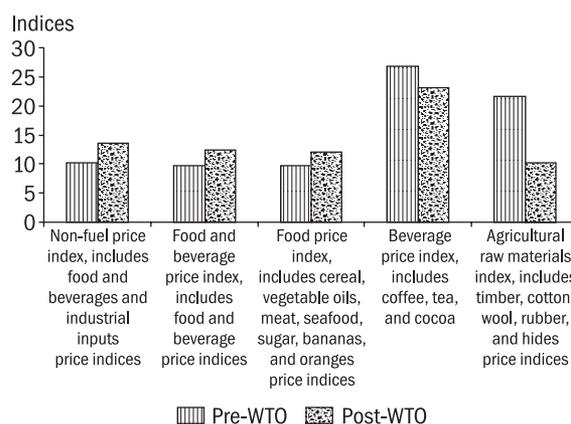
where Y(t) is the observed magnitude of the variable, y(t) is the magnitude estimated by fitting an exponential trend to the observed value and n is the number of observations. The vertical bar indicates the absolute value (that is, disregarding signs). Accordingly, instability is measured as the percentage deviation of the variables concerned from their exponential trend levels for a given period.

We have used the monthly commodity price data available from the website of the IMF (International Monetary Fund). Monthly data for the period January 1980 to February 2006 have been used for the calculation. We have divided the data into two parts; for pre-WTO period, data for the months January 1980 to December 1994 has been used. For post-WTO period, we have used data for the period January 1995 to February 2006.

Figures 5a and 5b show the volatility trends of some major commodity groups. These results show that, contrary to *a priori* expectations, there has been no systemic decline of volatility in the post-WTO period. In fact, in the post-UR period, price volatility has gone up for a number of agricultural commodities. This is not surprising because the continued subsidization of agriculture and the dominance of a few developed countries in world agricultural trade have not allowed other countries to join the international farm trade. As a result, the depth of international agriculture trade market has not increased. Therefore, prices of agricultural goods have remained as volatile as before.

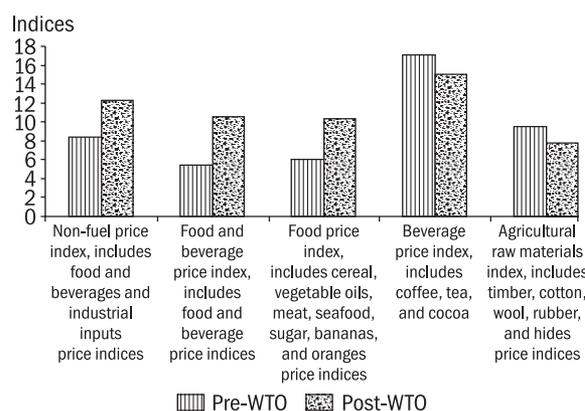
Also, international commodity prices tend to be more volatile than domestic prices. In India, a study done by Nayyar and Sen (1994) in the early nineties revealed that the variation in price in world market for agriculture is much more than that in the domestic market. Similar results have also been found by Bhattacharyya and Pal (2000) and Sekhar (2003).

The apprehension among the economists is that in a tariff-only regime, high international commodity price volatility will get transmitted to the domestic market and will increase the price instability of the domestic market. High volatility of agricultural commodity prices alters the risk perception of farmers and introduces a speculative element in agricultural prices. This is likely to have serious implications for farmers in developing countries. Recently, a committee looking at the issue of



**Figure 5a** Volatility of international commodity prices (measured by coefficient of variation)

**Source** Authors' calculation based on data from the IMF (International Monetary Fund)



**Figure 5b** Volatility of international commodity prices (measured by Instability Index)

**Source** Authors' calculation based on data from the IMF (International Monetary Fund)

suicide by farmers in Andhra Pradesh has found that the volatility of crop prices has been a major source of income instability and distress for farmers.

There might be an argument that currently the world commodity prices are quite high and if high prices prevail in the international market then, even with volatility, the threat of import surges is less. One should be careful about this line of argument because, as the *Global Economic Prospects 2006* points out, the period of rising agricultural commodity prices seems to be over and there are indications of a stabilization and even reversal of gains in the markets for agricultural products.

## Conclusion

The increased volatility of food and fuel are going to be major problems for developing countries in the years to come. Post WTO and after the removal of quantitative

restrictions, developing countries have been significantly exposed to the volatility of international commodity prices. Volatility of international fuel prices is causing massive problems for oil-importing countries in many parts of the world. It has affected the foreign exchange earning and growth prospects of these countries. Another big problem faced by developing countries comes from increased volatility of agricultural commodity prices. Evidences presented in this paper suggest that recent developments in international agricultural trade have not been successful in bringing down the volatility of agricultural commodity prices over the last decade. The volatility of agricultural commodity prices alters competitiveness of domestic farmers in the international market. This volatility can also increase the threat perception of the stakeholders and negatively affect the issue of food security in many countries. The commodity price volatility and the resultant uncertainty regarding food and fuel security are going to be important challenges for the policy-makers of developing countries in the years to come.

A new challenge facing the food sector is also coming from increased demand for biofuels. IMF analysts suggest that if tariffs and subsidies in the US and EU were eliminated, biofuels would likely be produced largely by lower-cost producers such as Brazil and other Latin American countries. They also project that under such a scenario, bio-diesel would be produced mostly by Malaysia, Indonesia, India, and some African countries (Mercer-Blackman, Samiei, and Cheng 2007). Increased demand for biofuel and the resultant shrinkage of land devoted to producing food is likely to have inflationary impact in some developing countries.

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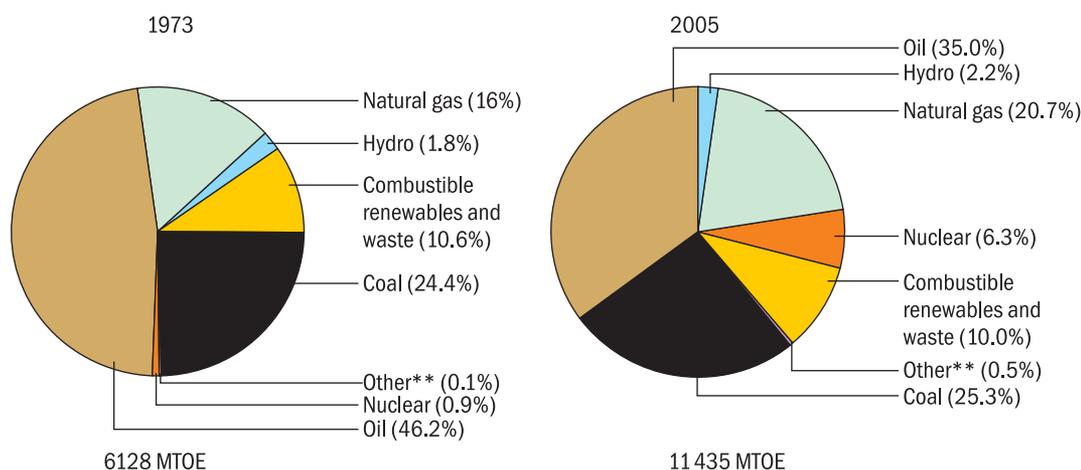
# Trade in energy commodities: the global scenario<sup>1</sup>

Nitya Nanda and Anandajit Goswami<sup>2</sup>

## Introduction

The importance of trade in energy commodities has grown manifold in the global context of growing trade in commodities. Globally, oil is the most important source of energy, followed by coal and natural gas. While about 35% of the TPES (total primary energy supplies) come from oil, coal and natural gas constitute about 25% and 21% of TPES respectively. The share of oil – which was 46% in 1973 – however, has shown substantial decline over the last couple of decades. This loss in the share of oil has been, more or less, compensated by gains in the share of natural gas and nuclear energy, which increased from about 16% to 21% and less than 1% to more than 6% respectively (Figure 1).

Among the three important energy products, oil is different from the other two – coal and gas – with respect to place of production and consumption. As of now, about 4000 MT (million tonnes) of crude oil is produced globally and about 57% of that is traded internationally. This means, more than half of the crude oil is consumed in a country different from the country of production. In case of coal and gas, the picture is, however, just the reverse. The general perception about trade in energy commodities is often pessimistic across the world due to speculative trading activities and high volatility in the prices of energy commodities. However, the truth is that the market for energy commodities today is worth approximately close to \$2 trillion (Vasey 2004), with a physical market of energy commodities



TPES – total primary energy supplies; MTOE – million tonnes of oil equivalent

**Figure 1** Fuel shares in global TPES (total primary energy supplies)\*

Source IEA (2007)

\*Excludes international marine bunkers and electricity trade.

\*\*Includes geothermal, solar, wind, heat, and so on.

<sup>1</sup> This article is based on the research supported by the Nand and Jeet Khemka Foundation in the project 'Building an energy-secure future for India through a multistakeholder dialogue process'. Excerpted from the 'Trade and Geopolitics' chapter of 'Building an energy secure future for India: year 1 report, submitted by TERI to the Nand and Jeet Khemka Foundation (Project Report No 2006 RS22).

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close to \$ 4 trillion. Trade in energy commodities is dominated by multinational energy companies, hedge funds, and investment banks. The projections show that in the near future, the volume of physical trading of energy commodities would grow. Such trading would happen in various energy commodities like gas, oil, coal, and other forms of energy. Thus it is critical to understand the global picture of trading in these commodities in order to visualize the future trends in trading of these energy commodities. The next section highlights the global scenario and various other facets related to trade in various energy commodities across different nations of the world.

### Production, consumption, and trade

The shares of trade in total global production in coal and gas are about 13% and 29% respectively. The relatively higher transportation costs, the ease of use (or lack of it) or just its availability in the consuming countries could be the possible reasons for a low share of trade in coal and gas. It is, however, interesting to note that though the share of trade in crude oil production is as high as 57%, when it comes to refined petroleum products, the share of trade in total global production is just about 22% , demonstrating that the consuming countries prefer importing crude oil to refined products. The major importing and exporting countries of energy products like crude oil, gas, and coal are given in Table 1.

The US and Russia are the only two countries who are both major producers and consumers in all the three energy products. However, the basic difference between them is that Russia produces much more than it consumes, and hence is a major exporter in all the three products, but the US consumes much more than it produces, particularly oil and gas. For example, in 2004, with a share of 7.8% in global production, the US was the third largest producer of crude oil, only after Saudi Arabia and Russia, yet it was the largest importer of crude oil, with a 25.8% share in global imports (IEA 2006). China is a major producer as well as consumer of both oil and coal. India is a major producer and consumer only of coal. Overall, however, the major consuming nations and the major producing nations are, more or less, different groups of countries (Table 1). Energy products are also necessary goods. Thus, they become extremely important commodities in international trade. The major buyers of energy commodities are also quite common in all the three commodities (Table 1). There are just 13 countries that share the top 10 positions in all the three commodities. Comparatively, the sellers in the global energy market are more dispersed, as there are 23 countries that share the top 10 positions in the three commodities. The major exporters of energy commodities except Norway and Canada<sup>3</sup> are all from the developing world, while the major importers, except China and India, are all from the developed world. The entry of China and India

**Table 1** Major exporters and importers of oil, gas, and coal in 2006\*

Crude oil		Gas		Coal	
Exporters	Importers	Exporters	Importers	Exporters	Importers
Saudi Arabia	US	Russia	US	Australia	Japan
Russia	Japan	Canada	Germany	Indonesia	Korea
Iran	China	Norway	Japan	Russia	Taiwan
Nigeria	Korea	Algeria	Italy	South Africa	UK
Norway	Germany	Netherlands	Ukraine	China	Germany
Mexico	India	Turkmenistan	France	Colombia	India
Venezuela	Italy	Indonesia	Spain	US	China
UAE	France	Malaysia	Korea	Canada	US
Kuwait	Netherlands	Qatar	Turkey	Kazakhstan	Russia
Canada	Spain	US	Netherlands	Vietnam	Italy

\*in order of their share in global exports/imports

**Source** IEA (2007)

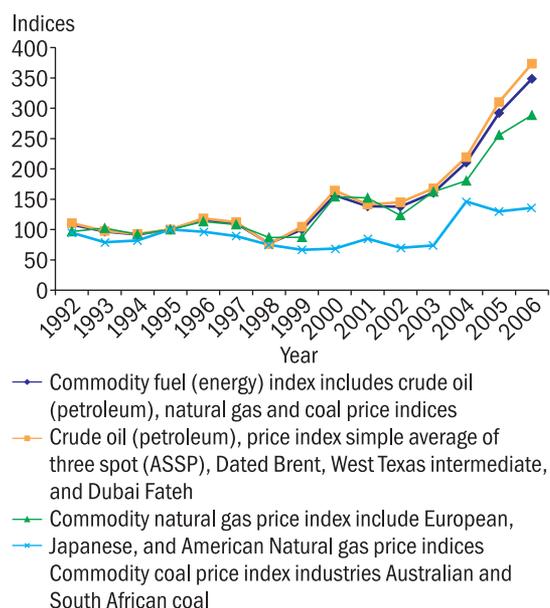
<sup>3</sup> In gas, the US is the 10th largest exporter, but this is because of its special arrangement with Canada, while in coal, both Australia and US are among the 10 largest exporters. Trade in coal, however, is much less significant compared to trade in oil and gas.

in the global energy trade as major buyers, however, is a recent development. While India has, all along, been highly dependent on foreign energy (oil), China became a net importer of oil only in 1993. But both became among major buyers only around the turn of the century.

The production and consumption of energy commodities impact the price trend of energy commodities. This is discussed in the next section.

### Prices of energy products

The prices of all the three energy products – oil, gas, and coal – were more or less stable from 1992 to 1998. In fact, the prices showed a declining trend during this period. They increased for two consecutive years and again showed some stability till 2003. However prices zoomed thereafter (Figure 2). In fact, the price of crude oil fell from \$35.95 per barrel in 1980 to just \$14.17 in 1986. The oil price rose substantially in the wake of the Gulf War and reached \$22.99 in 1990 but started falling again, reaching \$15.95 in 1994. They were quite stable thereafter but reached \$13.08, the lowest price in a long period. The oil price showed moderate increase till 2003, but the next three years saw sharp increases, unprecedented over more than two decades. Figure 2 highlights the behavioural pattern of the



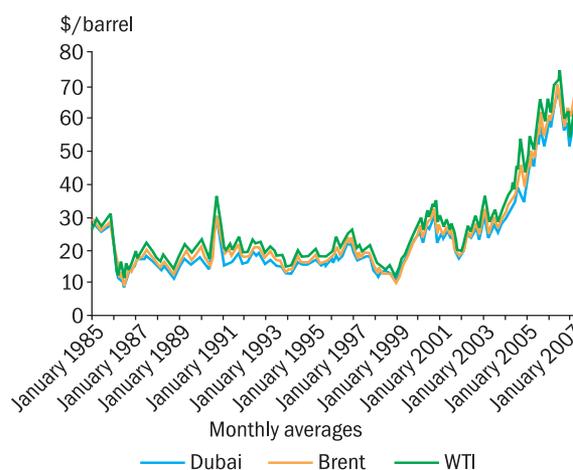
**Figure 2** Price indices of commodity fuel, crude oil, natural gas and coal  
**Source** IMF (2006)

price indices of energy commodities like commodity fuel, crude oil, natural gas, and coal.

The price of natural gas has more or less followed that of crude oil for a long time, but over the last few years it has been moderate compared to oil. In case of coal, however, the price increase has been more or less constant in 2004 though preceded by a moderate rise in 2003. Otherwise, it has, on average, shown a declining trend (Figure 2).

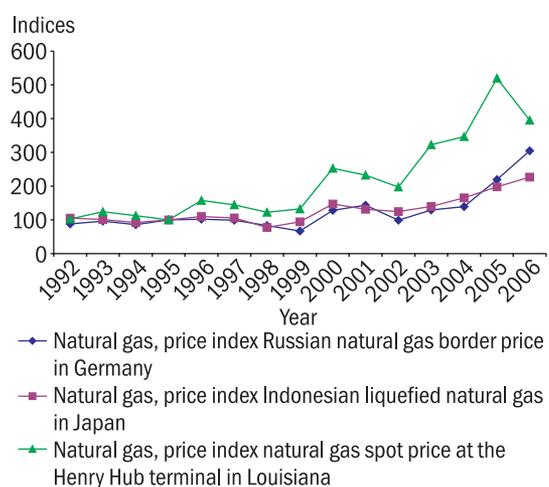
One important aspect of price or market behaviour of energy commodities has been that they have been quite different for different commodities and regions. As we just discussed, coal prices have moved in very different ways than those of oil and gas. Price behaviours of oil and gas have also been different. If one looks into the details of the movements, the differences become even more stark and interesting.

The prices of oil in the US and Europe have always been higher than the price in Dubai. This is quite natural, as Dubai is in the middle of the major producing zone, West Asia, while the other two regions are essentially net importers and largely source from West Asia. Moreover, while Brent and WTI (West Texas Intermediate) are of light sweet crude, Dubai is a heavy sour crude, which is cheaper than light crude. However, the movement of prices in all these markets followed a similar pattern keeping the relative positions unchanged (Figure 3). However, the natural gas markets have shown interesting developments. The global natural gas market can be segmented from two perspectives—mode of transportation and geographical regions.



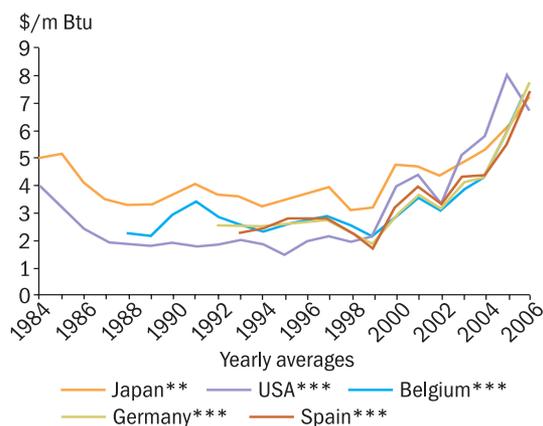
**Figure 3** Major crude oil spot prices (in \$/barrel)  
**Source** IEA (2007)

If one compares the three main markets – the US, Europe, and Japan – the price increases in the US have been the sharpest and most unstable, with wide fluctuations, while in Japan, the price rise has been most modest and least fluctuating. In Europe, it has been less sharp and less fluctuating than in the US but sharper and more fluctuating than in Japan (Figure 4). As far as the mode of transportation of gas is concerned, Japan is entirely dependent on LNG (liquefied natural gas), while the US and European imports are overwhelmingly dominated by transportation through pipelines. This implies that prices of LNG have seen less rise and less fluctuations compared to those of gas transported through pipelines. Import of LNG has always been considered an expensive option compared to import of gas through pipelines. However, by the end of 2005, the price of gas imported as LNG became comparable to those imported through pipelines in the European markets and much cheaper than the prices of gas imported through pipelines in the US (Figure 5). This could be partly because of the fact that the costs of liquefaction and regasification, which are important processes in transportation of gas as LNG, have gone down as a proportion of the ‘basic price’ of gas, due to improvement in technology as well as a rise in the basic price of gas itself. It could also be due to the fact that while trade in gas through pipelines is between fixed traders, in LNG, there could be options for alternative buyers and sellers, allowing some scope



**Figure 4** Price indices of natural gas in different markets (1995=100)

**Source** IMF (2006)



**Figure 5** Natural gas import prices (\$/mBtu) mBtu – million British thermal units  
\*\*LNG (liquefied natural gas) \*\*\*Pipeline  
**Source** IEA (2007)

for market mechanism to work. This could also be due to the fact that market dynamics have been different in different markets, particularly for Indonesian gas in the Japanese market. Japan gets its supply from Indonesia under long-term contract, where the price is linked to the JCC (Japanese crude cocktail). In the US, prices could have been dictated by local trading, while in Europe, prices might also have been influenced by Russia, which is the major supplier of gas to Europe.

## Factors affecting energy commodity prices

### **Demand**

The moot issue in the global market for energy commodities is whether the current high prices will continue or they will come down.<sup>4</sup> It is indeed difficult to answer this question. An analysis of the possible reasons for the current high prices can throw some light on the issue. Several reasons have been advanced for the price rise. One of them is the rising consumption of oil in China. Other reasons that have often been cited are the geopolitical events like the war in Iraq, violence in Nigeria, as well as increased activities of the hedge funds and other speculators (Cantrell 2006).

The growing demand for oil in China is one of the important reasons but it cannot be the only major reason. Sometime in 1993, China turned to be a net importer of oil from being a net exporter. Since then, it has been increasingly importing oil. Yet the price of

<sup>4</sup> It may be noted in this context that the real price of oil at present is still lower than its 1986 level.

crude oil continued to fall till 1998. For the next five years, the price of oil showed an upward trend but the increase in prices was not as drastic as we find today. The year 2003 was the time when there was a violent break from the trend (Figure 3). This was also the year when the Iraq war was launched. It may also be noted that a substantial price increase was observed in the oil market even at the time of the first Gulf War in 1989. But that price increase was more temporary and the price of oil in 1998 was lower even than the price level of 1988.

### **Speculators**

The role of speculators in increasing prices in a market is well recognized. So this can be the reason that the price rise during the second Gulf War was much sharper than during the first Gulf War. Indeed, hedge funds are now more active in the oil and gas future markets than they used to be before 2003 (Fusaro and Vasey 2004). However, speculators often need some reasons to go bullish. The Iraq war could have provided that reason. Moreover, speculators impact more of short-term price changes than long-term price movements. However, the continued violence in Iraq and the uncertainty over Iran have convinced the speculators to hold on, leading to persistent high prices.

### **Geopolitics**

The price of gas moved hand in hand with that of oil for some time (till about 2004), but it parted ways with oil price afterward. This could also be because of geopolitical reasons. As can be seen from Table 1, the importance of West Asia region as a source of oil is much higher compared to that of natural gas. The major exporters of gas are much more dispersed, and hence a disturbance in West Asia creates much less impact on the gas price. Nevertheless, gas being a substitute of oil, to some extent, a hardening oil price has led to hardening of gas price as well. The price of coal has not been affected much, as it is a poor substitute of oil and gas and also because of the fact that West Asia does not export coal.

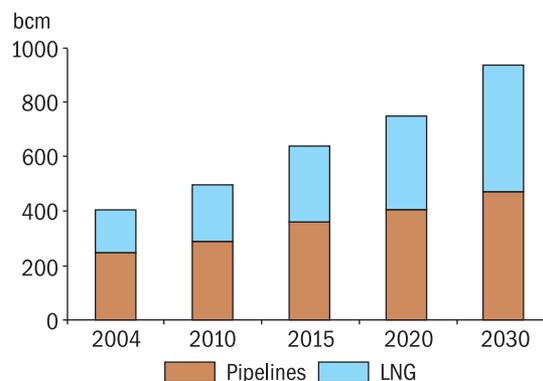
Given this, it is likely that the oil price may soften if there is improvement in the geopolitical situations. The instability in Iraq is unlikely to have too strong an impact on the oil price any more. However, the continued uncertainty over Iran is a sufficient reason to convince the speculators to remain active in the oil and gas futures market. Nevertheless, even if the tension over Iran gets diffused soon, it is unlikely that the oil prices will get

back to the 2002 level. It is more likely that the price will gravitate towards the trend that was set in 1998. In other words, the price of oil is likely to show an upward trend.

### **Resource exhaustion**

A study by Douglas-Westwood Ltd – *The World Oil Supply Report* – suggests that the world is drawing down its oil reserves faster than ever. At the beginning of 2003, 99 countries had produced oil or were expected to produce it in the future. Of these, 49, including the US and Russia, are well past peak; 11, including the UK and Norway, are just beginning to see declining production; and 12, including Australia and China, will reach peak soon. The rest will see peaks within the next 25 years. In non-OPEC (Organization of Petroleum Exporting Countries) countries as a whole, production is expected to start declining any time soon. It is expected that by the end of the decade, OPEC will have to increase its output by over 1 million barrels/day per year, every year, to offset declines in non-OPEC output, just to maintain the current level of production. A dearth of such levels of output would create an excess demand and would contribute in raising prices.

According to the IEA forecast of 2004–30, West Asia and North African countries account for the bulk of the growth in the global gas production, followed by transition economies, developing Asian countries, Latin America, and OECD (Organization for Economic Cooperation and Development) countries. In such a scenario, according to the IEA, the global gas trade is going to double with two-thirds of the trade coming from Russia, West Asia, and North Africa. According to the IEA, a larger part of this increasing trade would come from an increase in LNG trade. A break-up of this trade is given in Figure 6.



**Figure 6** Inter-regional gas trade: reference scenario  
**Source** IEA (2004)

**Table 2** Indicators of global market structure in 2004

Indicator	<i>Oil</i>	<i>Gas</i>	<i>Coal</i>
Reserves–production (R-P) ratio	44.2	64.3	180
Four-country concentration ratio (production)	38.2 (67.6)	49.5 (64.3)	77.9
Eight-country concentration ratio (production)	55.4	61.4	92.0
Four-country concentration ratio (exports)	39.9 (74.0)	54.4	63.3
Eight-country concentration ratio (exports)	59.2	74.5	89.4
Four-country concentration ratio (reserves)	53.5 (98.5)	62.2 (82.6)	67
Eight-country concentration ratio (reserves)	79.7	74.4	—

**Note** Figures in the parentheses are concentration ratios considering OPEC as a single country.

**Source** IEA (2006) and EIA (2006)

### **Market structure**

It would be also interesting to see the structure of the global markets for energy products, which might throw further light on the likely price scenario (Table 2).

Though the market structure is normally understood from the number of firms and their relative position in the market, in terms of energy products, it would be more appropriate to look at the relative position of producing or exporting countries, particularly because countries are known to use their sovereign power on production and export of energy products, especially oil. Since all these products are exhaustible resources, reserves would be another important aspect to look at. Two measures of concentration are derived for this analysis – four-country and eight-country concentration ratios – estimated as combined share of the top four or eight countries in production, export and reserves. It is believed that greater the concentration, higher will be the upward pressure on the price *a la*, the SCP (structure-conduct-performance) paradigm of industrial economics. As of now, oil seems to be the least concentrated market compared to natural gas and coal both in terms of production and exports.

When it comes to reserves, the picture, however, changes. While coal remains the most concentrated market, structures of the oil and natural gas market become comparable. In fact, in terms of the eight-country concentration ratio, the oil market becomes more concentrated than natural gas. Thus, it seems that the oil market is likely to be more concentrated in the future than it is now while the structure of the gas market may remain as concentrated in future. However, as of now, Iran has the second largest reserves of natural gas, yet it is not among the major (top 10) producers or exporters of gas. But it wants to enter the market in a big way. If that happens, then it would definitely

change the market dynamics. Thus, pressure of prices would be higher on oil than in gas. Moreover, the R-P (reserves-to-production) ratio is also lower in oil than in gas, implying that supply constraints are going to be more prominent in the oil market, putting further pressure on the price.

However, if one considers OPEC as a single country, the picture changes totally. OPEC has a share of 43% in global production, 51% in global trade and a whopping 79% in global reserves. The four-country concentration ratio for oil reserves, taking OPEC as a single country, is as high as 98.5%. This shows the kind of pressure one can expect on the price of oil. OPEC does not control production of natural gas and their share of global production at present is only about 18%. However, OPEC countries hold about half of the global gas reserves. Hence, if OPEC becomes active in the area of natural gas as well, its impact could be significant though less than that in the oil market.

As with current production and exports, concentration is very high in coal reserves as well, implying that the suppliers will have high market power in the long run. As of now, such global market structure is not reflected in the price of coal as it is not widely traded and countries are producing it mostly for domestic consumption. It is also interesting to note that countries with high reserves or production are not the major exporters of coal. One positive aspect of the coal market is that the current R-P ratio is quite high, almost four times that of oil and three times that of gas. It may, however, be also noted that a significant component of coal reserve (21%) is of lignite type, which is not tradable. Moreover, while historically, the world reserves for oil and gas (more so in gas) have seen upward revisions, in case of coal the revisions have been downward.

## Conclusion

The energy prices are likely to remain steady in view of the growing emerging economies like China and India. Nevertheless, it is next to impossible to predict the price behaviour mainly due to the important role played by non-market factors like geopolitical developments and government actions, as well as the actions by speculators and hedge funds. Interestingly, despite the countries adopting market-oriented policy regimes in general, there are no signs of the importance of non-market factors getting reduced in energy commodities. One such indicator is that the proportion of global reserves of oil and gas under the control of OPEC countries are on the rise.

Another important trend is that, though oil will remain a major source of energy, natural gas will see its increased use, particularly due to the fact that it is relatively cleaner. However, coal is also not going to be out of use just because it pollutes more. Coal being relatively abundant, may not see similar increase in prices as oil and gas and hence may remain an important source of energy. It is also noteworthy that natural gas, being predominantly delivered through pipelines, its market will remain influenced by non-market factors.

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# Barriers to exploiting comparative advantage: solving the Indian puzzle

Nidhi Srivastava<sup>1</sup>

## Book review of

*From Competition at Home to Competing Abroad: a case study of India's horticulture*

Aaditya Mattoo, Deepak Mishra, and Ashish Narain

New Delhi, Oxford University Press (2007), 92 pp.

ISBN 0-19-568593-8 (paperback), \$30

*'There is persuasive evidence that India has a comparative advantage in agriculture. Yet its share in global agriculture exports is miniscule and domestic market is increasingly protected.'* The book opens with this statement and tries to address questions and issues surrounding this very assumption. It undertakes a 'supply chain analysis of 13 high-value agricultural commodities'. The book attempts at 'laying out the cost and price structure of all agents and all markets in the supply chain'. The study is divided into six chapters.

Chapter one, which provides an overview of the Indian agriculture sector and horticulture in particular, also identifies certain potentials and problems therein. In identifying the impediments to competitiveness of Indian exports, the study places these outside the agricultural sector. According to the study, barriers to export are attributable to logistical tax, gap between high standards required by governments and buyers, and low standards and weak conformity assessment mechanisms in India.

Chapter two of the study looks at the international trade in horticulture, charting out the trade patterns. Indian trade in horticulture is studied in terms of its contribution, composition, and destination. Overall, India is seen as a net exporter of horticulture products. Commenting on the quality of horticulture products exported from India, the study observes that based on

the perception of Indian exporters about the quality, it seems that 'Indian products could be potential candidates for upper end of the quality spectrum.'

In Chapter three, the authors go back to the question they ask in the beginning of the book, that is, 'why is policy so defensive for a sector that is so competitive?' With a view to addressing the issue of tariffs, this chapter questions the very rationale of protection.

Although India is one of the largest producers of fruits and vegetables worldwide (10%) and lowest cost producers of horticulture, its share in international trade is miniscule amounting to 'a small fraction of both world horticulture exports and domestic production'. The next two chapters focus on the limitations to exploiting the comparative advantage India can possibly have in international trade in horticulture. While Chapter four assesses the role of domestic constraints, Chapter five evaluates the external scenario.

Chapter four analyses the delivery costs of Indian export items, which account for about 25% -40% of the retail price. These high delivery costs, according to the study, are caused by (1) poor transport infrastructure, uneven utilization of existing infrastructure, and slow creation of new infrastructure and (2) fragmented supply chain and limited storage infrastructure resulting in high storage and marketing costs. The study estimates that India spends approximately 20%-30% more on international transportation costs as compared to most other countries. According to the survey conducted, high international transportation cost is perceived as the biggest barrier to trade in horticulture. This is illustrated by the case of grape exports from India and Chile to the Netherlands. Although the distance between the Netherlands and India is half the distance between the Netherlands and Chile, the cost of transportation from India is estimated to be 270% higher than from Chile.

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Besides, geographical disadvantage in terms of distance and high costs of transportation are attributed to government policies and institutions. The book studies in detail the air, marine and surface transport situation, and policies to address the problems faced by these sectors.

The domestic constraints to trade in horticulture include lack of adequate storage and marketing infrastructure, which is indicated by, as the book cites, 20%–40% wastage of the total production. According to the study, this wastage is caused by ‘poor and multiple handling, improper bagging without crating, lack of temperature-controlled vehicles, and storage facilities’ and inadequate infrastructure in the market yards. These hurdles are not uniform across India and are found to be varying according to the economic condition of the states. Long fragmented marketing chains with numerous intermediaries result in adding up of incremental costs. This has been largely due to restricted mobility across states and consequent fragmentation into small markets and unfavorable environment for investments, both of which result from the various laws and policies enacted to exercise control over the commodities, during periods of food shortage.

The authors mention that ‘given the serious domestic problems identified, it is difficult to establish how far the external trade regime is a binding constraint... but there is little doubt that it would be a serious impediment if India were to emerge as a major exporter’. In Chapter five, these external barriers have been classified as domestic support, border protection, and differences in standards. Major importing countries such as the US, EU, and Japan employ protection tools such as ad valorem tariffs, specific duties, seasonal tariffs, and preferential access cum tariff-rate quotas. The study observes that the average tariff may be low but that does not reflect the level of protection and goes on to discuss other factors disincentivising exports at a low price.

The book notes that the evidence of standards being a major barrier to trade is mixed and the impact also varies, depending on the destination markets. For instance, standards in general are very stringent in countries like the EU, US and Japan. According to the sample surveyed for the study, the problem is not so much in the form of restrictions but warning and reductions in price and demand from foreign buyers. The book refutes the common perception that all standard related problems are manifestations of protectionism. In fact, it alleges that ‘inadequacies in

domestic standard setting legitimize foreign barriers.’ Drawing from another World Bank study (Jaffe and Spencer 2004), the book highlights how rising standards show the supply chain weaknesses and strengths and how India should take advantage of the opportunity and play a more proactive role rather than defensive.

The book concludes with a two-pronged approach to optimizing the export potential of horticulture from India—first, by lowering the logistical tax at domestic level and second, by adopting an aggressive position in WTO (World Trade Organization) negotiations to tackle the external barriers. The study goes on to advocate greater liberalization of services supporting agriculture, including air, rail, and road transport, as well as storage and marketing infrastructure and services. To this effect, the book makes certain policy suggestions, including removal of reservations of agro-industrial activities for SSI (small-scale industry) and government fostering development of contractual arrangements in agriculture.

The book, although giving a vivid account of barriers faced by exporters, does not adequately take note of certain key facts about India’s horticulture industry. The premise on which the book is based is that despite producing approximately 10% of the world horticulture products, India’s share in world trade is minuscule. It is true that 10% is being produced in India, but it is also true that India has a huge population to support and the consumption of fruits and vegetables has been growing at a faster pace than that of other food products. In fact, this trend is likely to increase with the growing economy and the increase in per capita income. The huge demand that the Indian horticulture industry has to meet and its importance in the total production is not discussed anywhere in the book.

Moreover, the general preference of Indian consumers has traditionally been more towards fresh fruits and vegetables rather than processed foods. Therefore, demand for fruits and vegetables domestically will continue to be substantial. It is not feasible or even possible to develop a processed food industry based on export potential alone as domestic scenario, especially where the demand is so high, will play a significant role. Thus the importance and centrality of the fact that Indian horticulture producers will have to cater primarily to the domestic market is ignored by the authors.

The World Bank authors identify high transport costs and fragmented supply chain as the biggest hindrance

to a flourishing export in horticulture and, therefore, suggest that addressing these could improve the farmers' share in the retail market price, which is currently around 12%–15%. The book talks about how 'vertical integration' is a common feature of efficient food marketing systems in many countries and its nascent stage in India. However, the discussion does not get into the depth of the matter and ignores the socio-economic and socio-cultural issues involved in a transition from 'mom & pop' shops to organized retail in India. The authors recommend dereservation of agro-industrial activities for SSI, but it is not clear what value it is going to have for improving our exports. The only agro-food products reserved for SSI are pickles and chutneys, which in any case do not constitute a major portion of India's exports.

The Indian agricultural supply chain is compared with that of the US, which is a little difficult to accept. There seems to be some amount of naiveté in the choice of countries itself. The base is too lopsided as the 15 years that the book talks about have been different in the two countries in almost all aspects. It would have been better to compare with other markets, such as that of Thailand, whose horticulture export has been increasing over the years. Thailand's experience with large retailers and government's initiatives in the form of supply chain units would have served as a better comparison to India's case.

As the authors themselves note, there is a bias in the sample group selected for survey. According to the units surveyed, less than half of them faced decline in exports due to rising standards or had to change or modify their production process in response to these

standards. In fact, 15% reported that rise in standards had a beneficial impact on their exports. The study surveyed 65 'exporters' across states and there is strong likelihood that these are the exporters who have been successful in continuing to export despite stringent standards. So the companies, which faced restrictions in the past, have either reformed themselves or have ceased to be exporters, as they have not invested in upgrading or changing their production process to be consistent with standards. Thus, the 'exporters' surveyed leave out those units that have actually been at the receiving end.

Occasionally, the study appears to be dated. In its critique of domestic standards, it is observed that there is a plethora of authorities and a revamp of food law is under way but does not mention the Food Safety and Standards Act, 2006, an Act that had already received presidential assent in August 2006, or the possible impacts that its enforcement could have on the standards process.

These few omissions apart, the book makes a good reading and a ready reference to export constraints in horticulture products. The in-depth analysis of the transport costs and the existing framework and policies in the air, railroad, and maritime transport sectors of India, are particularly discussed in sufficient detail.

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# NEWS IN BRIEF

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## Trade winds

### Doha Round impasse

Some WTO (World Trade Organization) members have been toying with the idea of a 'mini-ministerial' meeting around Easter to finalize a framework global deal on the Doha Round. However, the prospect of such a meeting has faded out. The draft texts by the Chairs of both Agriculture and NAMA (non-agricultural market access) have left the members sharply divided, and cutting tariffs and subsidies

is not a realistic possibility. In agriculture, there are relatively lesser problems though the G-33 countries are unhappy with not much of flexibilities on special product. The NAMA text, however, attracted much sharper criticisms. Not only that, some developing countries feel that the present text is, in fact, worse than the previous one. They also feel it is an attempt to break the powerful NAMA-11 group. Some verbal proposals made by the NAMA Chair, Don Stephenson, has attracted even sharper reactions.

*Bridges Weekly*, 12(8)

### Canada concludes FTA with Peru, EFTA

Canada has concluded free trade negotiations with Peru and signed an FTA (free trade agreement) with EFTA (European Free Trade Association) countries of Iceland, Liechtenstein, Norway, and Switzerland. The agreement with Peru will lead to the elimination of all trade barriers between the two countries within 10 years. The FTA includes provisions on environmental and labour standards.

The EFTA agreement calls for the elimination of all tariffs on non-agricultural products. However, for agricultural products, the EFTA states each arrived at bilateral agreements with Canada to reduce tariffs.

<http://news.gc.ca/web/view/en/index.jsp?articleid=374859>

### WTO membership for Ukraine

After 14 years of protracted negotiations, Ukraine has cleared the way for WTO (World Trade Organization) membership. The Ukrainian plan for joining the WTO has been accepted by the governments in the WTO working party on the country's accession.

Under WTO accession rules, a prospective member is required to complete bilateral market access agreements with any WTO member that might seek one, and then extend the deepest liberalization promises made to the entire WTO membership. The last of those agreements, between Ukraine and the EU, was signed on 18 January 2008.

[ipsnews.net/news.asp?idnews=41105](http://ipsnews.net/news.asp?idnews=41105) - 60k -

### Antigua considers cross-retaliation

In a rare move, the WTO (World Trade Organization) awarded Antigua and Barbuda the right to place sanctions on US patents, copyrights, and other intellectual property, as compensation for being unduly shut out of the US online gambling market. However, little precedent exists for exactly how it might go about suspending standard WTO protections for US intellectual property that it has been authorized to levy annual penalties worth \$21 million on both IP (intellectual property) and services companies. No government has ever actually suspended intellectual property rights as a result of a WTO dispute. Ecuador, the only other country to receive permission to do so, never went through with suspending EU patents and copyrights.

Meanwhile, a senior official of WIPO (World Intellectual Property Organization), Jorgen Blomqvist, the director of WIPO's copyright law division, created a stir by suggesting that suspending certain intellectual property protections could leave the Antiguan government in breach of international treaty obligations under WIPO. Some experts have, however, questioned this view. Even a WIPO spokesperson observed that Blomqvist's comments were personal views.

[www.antiguawto.com/WTOArticlesPg.html](http://www.antiguawto.com/WTOArticlesPg.html) - 85k

### US Senate dares WTO

The US Senate voted overwhelmingly to extend existing farm subsidy practices, despite threats of a presidential veto and

litigation at the WTO (World Trade Organization). The bill approved by the Senate on 14 December 2007 proposes to spend some \$286 billion over five years on farm payments. The House of Representatives had approved a largely similar bill earlier last year. In approving the bill, the Senate turned down the modest reforms proposed by the Bush administration that would have insulated US farm subsidy programmes from challenge at the WTO.

Not only did US farm subsidies come under scrutiny at the WTO only days after the Senate vote, on 18 December 2007, a separate WTO compliance panel issued a final report confirming that the US had complied with an earlier ruling, potentially opening the door to billions of dollars in sanctions from Brazil.

[http://www.freshplaza.com/news\\_detail.asp?id=14768](http://www.freshplaza.com/news_detail.asp?id=14768)

## Investment currents

### Growth in FDI predicted

UNCTAD's (United Nations Conference on Trade and Development's) *Global Investment Prospect Assessments* highlights that there would be an expected growth of FDI (foreign direct investment) in 2007/08 in the emerging markets of Asia and Eastern Europe. According to the report, the top five destinations for FDI are China, US, India, Russia, and Brazil. The report states that the prospective sectors where FDI would take place are computing/ICT (information and communications technology), public utilities, transportation and tourism-related services in the services sector; electrical and electronic products, machinery and metals in the manufacturing sector; and mining and petroleum in the primary sector. According to the findings of the report, more than 50% of the FDI would be through the mergers and acquisition route.

<http://www.unctad.org>

### Impact of investment agreements on FDI

The First Annual Forum of Developing Country negotiators held in October 2007 in Singapore made important recommendations on investments. The summary report of the forum concluded that there was no certainty in the relationship between the BIT (bilateral investment treaty) and FDI (foreign direct investment). However, BITs could have a positive impact on FDI flows, which is also dependent on domestic institutions and regulations. The report also suggests that often there is a diminishing return in signing up of BITs as after a threshold, signing up of one more BIT does not add significantly to FDI. The summary report of the forum also concluded that although FET (fair and equitable treatment) was common to most BITs, difference in interpretation by the investment tribunals had led to a state of confusion between the government and investors. In order to avoid such uncertainty, drafters of some agreements like NAFTA (North American Free Trade Agreement) had added a note of interpretation, stating

that FET was equivalent to customary treatment standard under international law.

[http://www.iisd.org/investment/capacity/dci\\_forum\\_2007.asp](http://www.iisd.org/investment/capacity/dci_forum_2007.asp)

### Indo-US BIT?

India and the US plan to explore the possibility of a BIT (bilateral investment treaty). Some of the issues that could be discussed in the agreement include removal of ownership caps and reduction in high tariff rates and drawing foreign investments. The agreement might also include discussion regarding plans of American businessmen who are keen to build infrastructure worth \$500 billion in India.

*The Economic Times*, 10 January 2008

### Indian BIT with Trinidad and Tobago

A Bilateral Investment Promotion and Protection Agreement – BIPPA – has been signed between India and Trinidad and Tobago in order to foster bilateral investment and technology flow between the countries. The agreement aims to create favourable conditions for investments for the investors of partner countries. This would include mutually acceptable definition of investment, NT (national treatment) and MFN (most favoured nation) treatment, protection against expropriation, and assurance on investment returns. The agreement also includes elaborate dispute-resolution mechanisms to settle disputes between an investor and the host government or between the two governments. The dispute-resolution mechanism would include recourse to negotiations, conciliation, domestic dispute-resolution mechanism and international arbitration. The agreement would be for 10 years. After that, it would be deemed to be automatically extended unless one of the countries gives the other country a written notice of terminating the agreement.

<http://www.cbec.gov.in/newsitem4.htm>

### Amendment of UNCITRAL Rules

The UNCITRAL (United Nations Commission on International Trade Law) is amending the arbitration rules that were drafted 30 years ago. The drafted Arbitration Rules regarding investment-related disputes are more aligned to settle private commercial disputes. The recent amendments are being done to address the public interest implications of investor-state disputes.

<http://www.iisd.org/investment/>

### Peru-Canada BIT

Peru and Canada recently signed a BIT (bilateral investment treaty), where transparency requirements in investment have been mentioned. In addition to this, the important point to ponder is that Canada's new model of Foreign Investment Protection and Promotion Agreement consists of provisions stating investor-state arbitrations, which would be disclosed in the public domain and would be arbitrated in a transparent manner.

<http://www.investmenttreatynews.com>

## Energy and resources

### Extending WTO to energy goods and services

The World Energy Congress 2007, held in Rome, discussed possible global rules of energy trade and investment as a responsibility area for furthering its mandate. At the Congress, WTO (World Trade Organization) Director General, Pascal Lamy, discussed energy within the WTO. He mentioned that the 'rules of the WTO do not deal with energy as a distinct sector. Yet, since the basic rules are applicable to all forms of trade, they also apply to trade in energy goods and services. And these rules can be enforced through the WTO dispute-settlement mechanism even if they were not negotiated with energy in mind.' He discussed the relevance and applicability of trade rules for trade in energy goods by highlighting the services negotiations, clean technology in the Doha agenda, and trade facilitation negotiations.

[http://www.worldenergy.org/documents/kn2\\_151107\\_lamy.pdf](http://www.worldenergy.org/documents/kn2_151107_lamy.pdf)

### Brazil pushes for treating biofuels as environmental goods

At the WTO Committee on Trade and Environment-special session (CTE-SS), Brazil proposed to include ethanol and other biofuels as environmental goods qualifying for tariff cuts. However, the proposal was not accepted by other countries. The EU and the US claimed that expedited liberalization was reserved solely for industrial goods, and not farm products. The proposal was criticized on other grounds as well, for example, food security and environmental considerations, as raised by Cuba.

*Bridges Weekly*

<http://www.ictsd.org/biores/07-11-16/story3.htm>

### Brazil likely to join OPEC

There has been news of Brazil joining the OPEC, the 13-nation cartel that has a huge influence over oil prices. This news was preceded by discovery of huge offshore oil and gas deposits in Brazil, which could turn the country into a major oil exporter. Many have linked Brazil's decision with the consequent political clout for the domestic government. Analysts have predicted that Brazil's membership could push crude prices higher, as more oil would be under OPEC control, 'but this membership and significant crude exports from the country won't happen anytime soon.' The delay could be due to many factors such as internal demand and lack of capacity and unwillingness to adhere to quotas.

*CNN*, 22 February 2008

[http://money.cnn.com/2008/02/22/news/international/brazil\\_opec/index.htm?postversion=2008022218](http://money.cnn.com/2008/02/22/news/international/brazil_opec/index.htm?postversion=2008022218)

### Coal prices may set new record on Asian demand

It is expected that coal prices will break records by reaching a new high on account of growing demand in Asia, led by China and India. Demand from India will rise at a faster pace in the coming two years as power plants move towards

completion. Indonesia, which is the world's second-biggest thermal coal exporter, is promoting coal-fired power output to cut oil use. Growing demand is also being coupled with lower export projections.

*Business Standard*, 28 February 2008,  
[http://www.business-standard.com/common/news\\_article.php?leftnm=0&autono=315150](http://www.business-standard.com/common/news_article.php?leftnm=0&autono=315150)

#### **Russia strengthens energy ties with Iran**

Ignoring US warnings for the world to keep away from doing business with Iran, Russia went ahead to tighten its energy ties with Iran. In a new deal, the Russian state-controlled energy giant Gazprom will take on big new Iranian oil and gas projects. Gazprom, the world's biggest gas producer, will play a larger role in developing Iran's giant South Pars gas field and will also drill for oil. Despite voicing its own concerns about Tehran's ambitions, Russia is building Iran's first nuclear power plant and has supplied the fuel it will use.

*Financial Express*, 21 February 2008

## **Environment and development**

#### **Climate change cause gets Nobel Peace Prize**

The Norwegian Nobel Committee awarded the Nobel Peace Prize for 2007 jointly to the IPCC (Intergovernmental Panel on Climate Change) and Albert Arnold (Al) Gore Jr for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change. By awarding the Nobel Peace Prize for 2007 to the IPCC and Al Gore, the Nobel Committee has sought to contribute to a sharper focus on the processes and decisions that are necessary to protect the world's future climate, and thereby reduce the threat to the security of mankind.

[http://nobelprize.org/nobel\\_prizes/peace/laureates/2007/press.html](http://nobelprize.org/nobel_prizes/peace/laureates/2007/press.html)

#### **Indian Tribal Act notified**

The Government of India, after more than a year of hectic lobbying, political interventions, and bureaucratic twists, notified the rules of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act. Reacting immediately, tribal groups condemned the drastic changes in rules (compared to the draft version that was put out for public comment) while the wildlife lobby seemed relieved about some dilution of the final version of the rules.

*Times of India*, 2 January 2008  
[http://timesofindia.indiatimes.com/India/Forest\\_Act\\_notified\\_tribals\\_unhappy/rssarticleshow/2667409.cms](http://timesofindia.indiatimes.com/India/Forest_Act_notified_tribals_unhappy/rssarticleshow/2667409.cms)

#### **United Nations Climate Change Conference, Bali, 3–14 December 2007**

The Bali conference, hosted by the Government of Indonesia, took place at the Bali International Convention Centre and brought together representatives of over 180 countries, together with observers from intergovernmental and non-governmental organizations, and the media. The two-week period included the sessions of the Conference of the Parties to the UNFCCC, its subsidiary bodies, as well as the Meeting of the Parties of the Kyoto Protocol.

<http://unfccc.int/2860.php>

#### **CoP 13 develops Bali Action Plan**

The Conference of the Parties, at the CoP13 of the UNFCCC adopted a plan of action, 'Bali Action Plan'. The countries decided to launch a comprehensive process to enable the full, effective and sustained implementation of the Convention through long-term cooperative action, now, up to and beyond 2012, in order to reach an agreed outcome and adopt a decision at its fifteenth session. The action plan calls for a shared vision for long-term cooperative action, enhanced national/international action on mitigation of climate change, adaptation and enhanced action on technology development and transfer, provision of financial resources and investment to support action on mitigation and adaptation and technology cooperation.

[http://unfccc.int/files/meetings/cop\\_13/application/pdf/cp\\_bali\\_action.pdf](http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf)

#### **EU nations object to EC's climate change plan**

The EC (European Commission) set targets for EU (European Union) member states to slash greenhouse gases and boost renewable energy use, calling for plans to make industry pay for the right to pollute in January 2008. The purpose of these targets is to agree on 'cutting the bloc's overall greenhouse gas emissions by at least 20% by 2020, compared to 1990 levels' before it is proposed to the European Parliament in 2009. EU member countries have responded to the strategy asking for 'more flexibility and greater attention for industrial competitiveness while also pushing their national wish-lists'. Countries have demanded that individual circumstances should be taken into account.

AFP, 28 February 2008; [<http://afp.google.com/article/ALeqM5jawK24WdRH03CgH-9oVYFVevh4wg>]

#### **2008 announced as the Year of Coral Reef**

The ICRI (International Coral Reef Initiative) has designated 2008 as the International Year of the Coral Reef. Understanding the significant role the reef plays as protector and provider for islands nations, 2008 is being endorsed as the year of the coral reef.

*International Coral Reef Initiative*  
[www.icriforum.org](http://www.icriforum.org)