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CHAPTER 6[1]

HOW DOES IT ALL ADD UP? CAUGHT BETWEEN A ROCK AND A HARD PLACE

In Chapter 5 we charted the patterns of globalisation in three key sectors – textile and clothing, furniture, and autos and auto components. In each case we showed how the centre of gravity of the industry has shifted over the past three decades – in textiles and clothing to the developing world in general (and prospectively to China in particular), in furniture to an increasing number of low and lower-income countries, and in autos and auto components to a limited number of low- and middle-income countries. Each of these industries has specific characteristics, but they reflect a growing pattern of dispersion of industrial activity, the growing participation of lower income countries in global trade, and the looming spectre of China's growing presence in global production and trade. In this chapter we ask the question – how does it add up, what is the general picture which emerges beyond these three sectors? This will be followed in the next two chapters with an examination of the consequence of this adding-up process for the global distribution of income.

We begin the discussion in Section 6.1 by examining the broad trends of dispersion of global production and trade across a number of sectors and countries. Having considered this pattern of global dispersion of production and trade, we then chart a complementary process in Section 6.2, where we focus on the growing concentration of buying power across the global economy, particularly in those buyer-driven sectors where developing country producers predominate. In Section 6.3 we show the consequences for developing country producers of these twin and complementary trends in the growth of global production capacity and in concentration in buying. The result is that producers in low income economies (and, as it happens producers in the high-income countries who engage in low technology activities) are increasingly caught in a pincer-like vice – or, to mix metaphors, between a rock and a hard place. This results in a severe squeeze on the prices of their output and hence in their terms of trade as they deepen their participation in global processes. In Chapter 7 we show how this is a process which is likely to increase in severity, and thus to further exacerbate the inequalities in global income distribution and poverty which we charted in Chapter 2. Section 4

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[1] This is the first draft of a chapter for a MSS provisionally entitled "Between a Rock and a Hard Place: Globalisation, Poverty and Inequality". It lacks footnotes and appropriate referencing for both the text and the data. Ideally I would have preferred to circulate a second draft, but have not had the time to redraft. So, whilst this can be cited, please do not quote directly from the text or data without checking with me at Kaplinsky@ids.ac.uk.

concludes the chapter and focuses on the growing role which China plays in the global economy, and the impact which this is having on global manufacturing prices.

Since the discussion in Sections 6.1, 6.2 and 6.3 is necessarily data-intensive in each case we summarise the data in a Box for those readers who wish to skip the detail.

6.1. THE ROCK – PRODUCTIVE CAPABILITY DIFFUSES WIDELY

Before reporting trends in global production and trade in manufactures, a "health-warning" is necessary. The calculation of global production shares is based on data collected by the United Nations Industrial Development Organisation, drawn from the data supplied by individual countries. This calculates the value of output in domestic prices, which are then translated through prevailing exchange rates into US$ equivalents to facilitate international comparison. However, as we saw in Chapter 2 in the discussion of income distribution, this form of translation is very unsatisfactory, since it takes no account of the purchasing power differences between countries. Unlike the measure of comparative income, where the purchasing power parity dollars are used, there is no accepted methodology which has been used to measure the comparative value of manufacturing production across countries. This leads to an overvaluation of manufacturing value added (MVA) in countries (such as China) which have undervalued exchange rates. which There is a second caveat on data which concerns the measurement of global exports. Each country provides data on the gross value of exports in each product groupings. But as we saw in Chapter 1, one of the key characteristics of the recent global economy has been the increasing "vertical specialisation" of trade, that is the fracturing of production processes which are then parcelled around the global economy. For example, in the Dominican Republic in the early 1990s, on average, the added value in the export of a "shoe" was less than $0.30; this is because rather than exporting shoes, Dominican Republic producers were exporting labour, merely sewing together the components imported from other countries, and wrapping them in imported material, paper and boxes. Yet, in international trade statistics, the unit value of shoe exports was not the added value of $0.30, but the gross value of the final product which was more like $15. This vertical specialisation has been growing, and Martin, for example, calculates that between 1980 and 1998, the share of China's exports which reflect this form of trade grew from 14.9 to 22.6 percent, and for India, it fell from 7.3 to 11 percent. The unevenness of this verticalisation urges caution in comparing export performance across countries and over time.

6.1.1. Manufacturing value added (MVA)

Box 6.1. Major trends in production and trade in manufactures

Manufacturing value added
With regard to the global spread of manufacturing value added, developing countries doubled their share between 1975 and 2000, coming very close to meeting the Lima Target of 25 percent of global value added. The major reason for this rapid growth in global market share was the performance of East Asia in general and China in particular. Both Latin America and the Caribbean and sub-Saharan Africa saw significant losses in market shares, globally and within the developing world.

Manufactured exports
Manufactured exports grew rapidly from developing countries, accounting for more than 70 percent of all their merchandise exports by 2000. Even in sub-Saharan African and the Middle East and North Africa, exports of manufactures exceeded agricultural products. Once again, the influence of China is particularly marked, both in its share of global manufactured trade and developing country manufactured exports.

Exports by sector
Considered by sector, there was a pervasive shift in the developing world away from resource-based manufactures to low-tech products. There was also a rapid growth in the export of high-tech manufactures, but much of this was probably due to the labour-intensive and low-tech processes within these high-tech products.

In 1975 the Second General Conference of the United Nations Industrial Development Organisation adopted the Lima Plan. Its primary target was to double the share of developing countries in global manufacturing added from 12.6 percent in 1975 to 25 percent in 2000. At the time, this target seemed fanciful (about as fanciful as the Millennium Goals adopted at the end of the twentieth century which are to halve the proportion of the world's population living in absolute poverty by 2015 - Chapter 2). The industrially advanced countries had experienced centuries of industrial growth, and countries such as France and Germany took many decades to push up their share of global manufacturing value added during the nineteenth century. Yet the Lima Target aimed to double the share of developing countries in a mere two decades. As we saw in the previous chapter, developing country productive capacities in manufacturing grew not just in labour-intensive production, but in key sectors such as automobiles and components. This sectorally specific progress was matched across a wide range of other sectors so that by 2000 the Lima Target has almost been met, with the share of developing countries in global manufactures rising to 24 percent (Figure 6.1).

Figure 6.1 Share of developing countries in global manufacturing value added
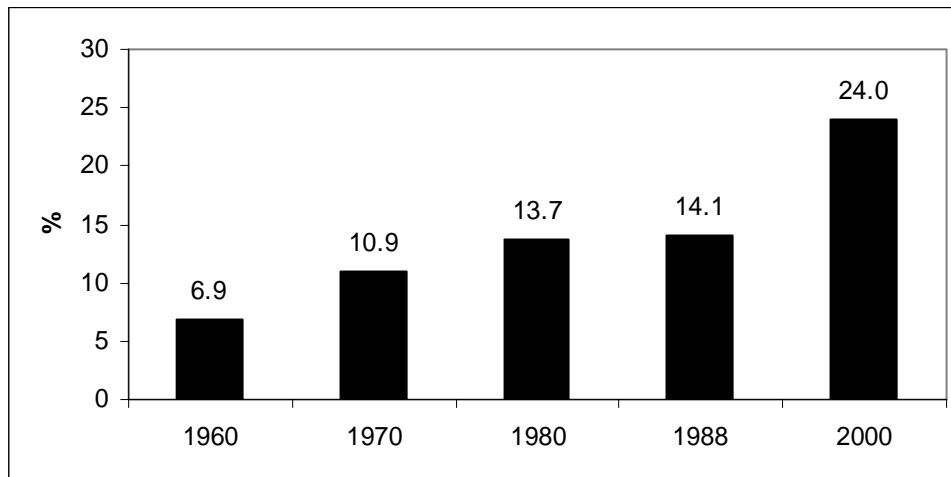
This growth in productive capacity was naturally uneven, between the types of economy involved (levels of per capita income), their geographical location and their sectoral characteristics. Table 6.1 shows the changing geography of production by their income group and their geographical location between 1985 and 1998. Considered by income group, the major gains were made by the low-income group of developing countries, whose share of global manufacturing output rose from 6.5 to 8.1 percent. But this was entirely due to the rapid industrial growth in China and India. Other than these two countries, the shares of global manufacturing output only rose for the upper-middle income group of countries, and by a smaller proportion than for China and India. Considered by geographical location, the striking feature is the declining share of Latin America and the Caribbean and Sub-Saharan Africa, both in global production and as a share of developing country production. Conversely, there is a dramatic increase in China's share – from 1.4 to 7.0 percent of global manufacturing value added, and from 10.2 to 29.3 percent of developing country manufacturing value added.

Finally, if we group sectors into resource-based, low-technology and medium/high-technology sectors, the major changes in global production have been as follows:

o In the resource-based sector group, the only major change in global share between 1981 and 2000 was that of East Asia (which grew from 4.8 to 13.9 percent), and within that China (from 1.5 to 7.5 percent)

o In low-technology sectors, once again the major beneficiaries were East Asia (from 5.9 to 14.8 percent) and China (2.0 to 7.2 percent); however, the global share of Latin America and the Caribbean fell from 7.1 to 4.1 percent

o In the medium- and high-tech sectors, there has been a familiar pattern of rising shares in East Asia (3.2 to 13.6 percent) and China (1.3 to 6.8 percent).

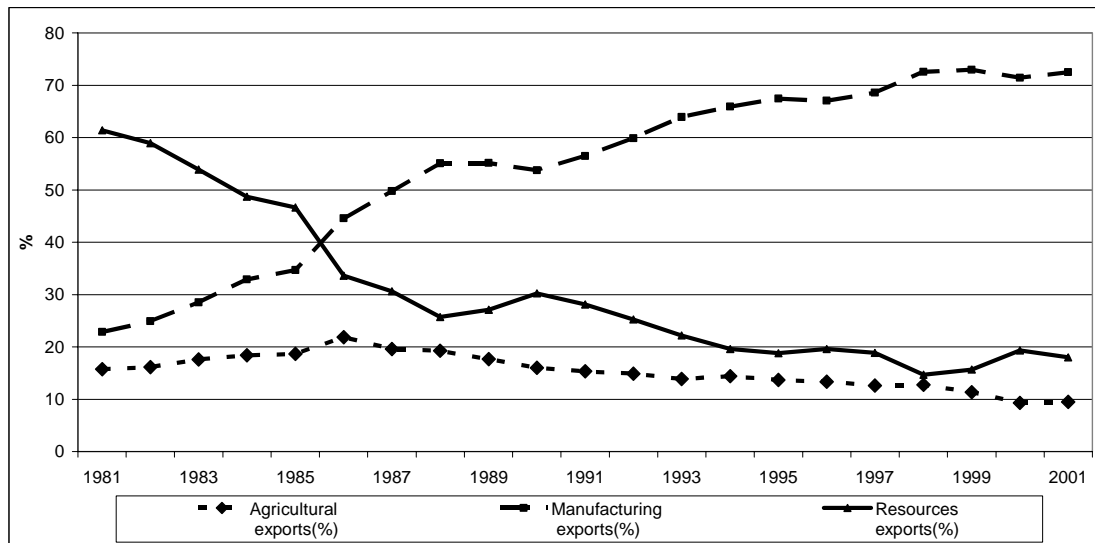**Table 6.1 Share of global manufacturing value added**

	Share of the world		Share of developing countries	
	1985	1998	1985	1998
By Income Group				
Upper-middle income	9.0	9.9	46.8	45.7
Low-middle income	3.7	3.7	19.4	17.2
Low-income	6.5	8.1	33.8	37.1
Low-income excl. China, India	0.9	0.6	4.7	2.9
Least-developed	0.2	0.2	0.7	0.6
	1985	2000	1985	2000
By Geography				
East Asia	4.1	13.9	29.2	57.7
China	1.4	7.0	10.2	29.3
South Asia	0.8	1.8	5.9	7.3
Latin America and Caribbean	6.7	5.2	46.9	21.8
Sub-Saharan Africa	1.0	0.8	7.1	3.4
Middle East, North Africa, Turkey	1.5	2.4	10.8	9.8

Source: Calculated from UNIDO database

6.1.2. Trade

A similar pattern can be seen when we focus on the participation of developing countries in global trade, as measured by their share of global exports. Although the Lima Declaration did not explicitly target the share of developing countries in trade in manufactures, It is notable that these grew even more significantly than manufacturing value added, rising from 6.3 percent in 1975 to 27 percent in 2000, growing particularly rapidly during the 1990s. This growing participation in global trade in manufactures reflects the general transition in the export structure of developing countries, with a rise in the share of manufactures, a relatively stable share of agricultural products and a concomitant fall in the share of resources. By 2000, more than 70 percent of all developing country merchandise trade was in manufactures (Figure 6.2). The only outliers to this pattern were the Middle east and North Africa and Sub-Saharan Africa regions – in both cases manufactures were around 30 percent of total merchandise exports, exceeding agricultural products but being dwarfed by resource exports

Figure 6.2. Sectoral shares of developing country exports

Source: W. Martin (personal communication)

Looking at the geography of trade, we see a familiar pattern (Table 6.2). By income category, the major gain in share was by the low-income group; between 1985 and 1998, it raised its share of global manufactured exports from 1.4 to 5 percent, and of developing country manufactures, from 9.0 to 21.6 percent. But virtually all of this was due to the rapid rise in manufactured exports from China and India. China's share of developing country manufactured exports rose from 7.6 percent in 1985 to 24 percent in 2000. By region, the East Asian share grows sharply, whilst that of Latin America (excluding Mexico), sub-Saharan Africa and the Middle East and North Africa fell. Finally, considered by technological intensity (Figure 6.3), the share of resource-based manufactures fell sharply, whilst those of low-tech manufactures rose. It is also evident that the share of high-tech manufactured exports grew, but much of this was probably in the export of sub-assemblies of high-tech products which marks the vertical specialisation of trade (for example, low-tech assembly of high-tech products).

Table 6.2. Share of manufactured exports

	Share of the world		Share of developing countries	
	1985	1998	1985	1998
By Income Group				
Upper-middle income	11.5	14.5	73.6	62.2
Low-middle income	2.7	3.8	17.4	16.2
Low-income	1.4	5.0	9.0	21.6
Low-income excl. China, India	0.4	0.5	2.7	2.0
Least-developed	0.1	0.1	0.7	0.6
	1985	2000	1985	2000
By Geography				
East Asia	6.8	18.4	51.9	68.7
China	1.0	6.5	7.6	24.0
South Asia	0.6	1.1	4.6	4.1
Latin America and Caribbean	3.2	5.1	24.5	19.0
Mexico	0.5	2.9	3.8	10.9
Sub-Saharan Africa	0.7	0.6	5.6	2.3
Middle East, North Africa, Turkey	1.8	1.6	13.4	6.0

Source: UNIDO (2002) WIDR

Figure 6.3. Structure of developing country exports
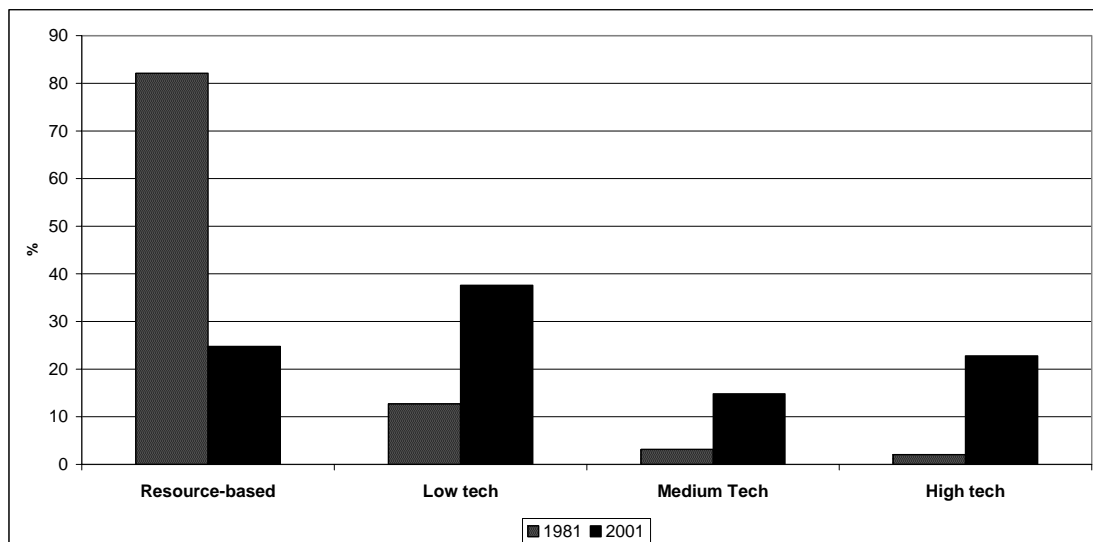
Source: W. Martin (personal communication)

6.2. THE HARD PLACE – GROWING CONCENTRATION IN BUYING

Box 6.2. Major trends in global buying

Garments, furniture and auto components
In each of these sectors there is detailed evidence of high and growing degrees of concentration in major markets in high-income countries, reflected in increasingly concentrated buying.

Food retailing and food manufacture
Both in the US, and especially in Europe, levels of concentration have grown rapidly. In the EU, only in Italy, Greece and Portugal do the five largest firms account for less than half of total retail sales; in Austria, the Netherlands and Sweden the five largest firms account for more than 90 percent of total industry sales.

Concentration in the retail sector is matched by extensive concentration in food production. In the EU, on average, the largest three firms across 17 sectors and nine countries account for 68 percent of total production.

Not just in retailing
Many producers in poor countries sell to specialised buyers rather than to final retailers. Although the evidence is more partial here, it appears as if concentration amongst specialised buyers is also growing.

Not monopoly but competitive oligopoly
Growing concentration in global buying is not leading to monopoly pricing and super-profits as some theory might predict. To the contrary, retailing is becoming increasingly competitive. The consequence is that global buyers are sourcing dynamically to find the lowest cost producers (meeting their demanding delivery, quality and product requirements). All of this sums up into fierce cost pressure being exerted on exporters from poor countries.

In Chapter 5 we examined the nature of the globalising trends in three sectors which have become key in the expansion of manufacturing exports from poor countries. In each case, there is evidence of growing concentration in global buying power. To briefly summarise these trends:

- In garments, in the US, the largest five retailers raised their share of the final market between 1987 and 1991 from 35 to 68 percent. In both the UK and Germany, concentration was less marked, but the largest five retailers still accounted for around one-third of the final market, and in France, Italy and Japan there has been a pervasive trend for independent retailers to be supplanted by large chains.

- In furniture, there has been a similar process of market concentration. Retail multiples control more than 40 percent of the UK market, and in Germany a single group and its affiliates controls 60 percent of the final market.

- In the auto sector, the buyers have concentrated on consolidating their supply base. The number of component suppliers was reduced by two-thirds in North America between 1990 and 2000, and is projected to fall by a further two-thirds by 2010. In Europe, major buyers have halved their supply-base in the past decade. The consequence has been a growth in very large 0.5-tier component suppliers with global buying power of considerable significance – each of the largest eight component suppliers had global turnovers exceeding $10bn.

What is happening beyond these three sectors? Unfortunately there is not sufficient evidence available to detail the widespread concentration of buying power which is associated with the global sourcing that has become prevalent in the global economy, and we therefore have to work with very partial data. One area where there is a growing body of material is in the food retail sector, which predominantly covers the food sector, but also includes many "fast moving consumer goods" such as cosmetics, cleaning materials, unbranded medicines, toys, and basic clothing items. These products account for a considerable proportion of basic household incomes and include a growing number of globally-sourced items. For example, in recent years in the major consuming economies fresh fruit and vegetables have moved from being locally sourced into a global industry. Many processed foods, too, are imported, especially those which serve the growing desire for "ethnic menus". And the simple toys and clothes retailed by these retail chains are almost always imported from low-wage economies.

Consider first the case of the USA. Here, as can be seen from Figure 6.4, between 1992 and 2000 there was growing concentration in the retail sector - the share of the five largest chains increased from 26.6 percent to 42.9 percent over the eight year period. However, the level of concentration in the very large US market is dwarfed by the individual country experience in Europe (Figure 6.5). There, the median share of the five largest firms was more than 80 percent across the 16 countries, and in three of them (Netherlands, Sweden and Austria) it exceeded 90 percent of total grocery sales. A number of factors explain this consolidation.[2] Some of these are related to market conditions, such as the demand for a combination of prepared and unprepared foods, the preference of time-conscious shoppers for a one-stop shopping experience which meets a variety of needs. It also reflects the economies of scale which arise from centralised management, bulk shipping and distribution, and inventory management. But, perhaps most relevant for our focus on distributional patterns, it provides retailers with enormous bargaining power. This purchasing power is often directly

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[2]   USDA Economic Research Service (2000), "Consolidation in Food Retailing: Prospects for Consumers & Grocery Suppliers", <u>Agricultural Outlook</u>, August, pp 18-22.

translated into forcing down the prices paid to suppliers; in other cases price pressure is indirect and with many of the costs of promotion and inventory-holding being born by suppliers.

These practices were considered in the UK in 2000 by the Monopolies and Mergers Commission which investigated the purchasing practices of supermarkets in the UK. Amongst other things, the Commission looked at pricing practices, and detailed a number which squeezed supplier margins. These included requiring suppliers to make payments or concessions to gain access to supermarket shelf space, and forcing an unfair balance of risk on to suppliers (for example by requiring compensation from a supplier when profits from a product are less than expected and failing to compensate suppliers for costs caused through the retailer's forecasting errors or order changes). In other cases, suppliers were required to contribute to the costs of buyer visits to new or prospective suppliers, and to purchase goods or services from designated hauliers, and packaging and labelling firms.

Figure 6.4. Concentration in the US Retail Grocery Sector: Share of the five largest firms, 1992-2000
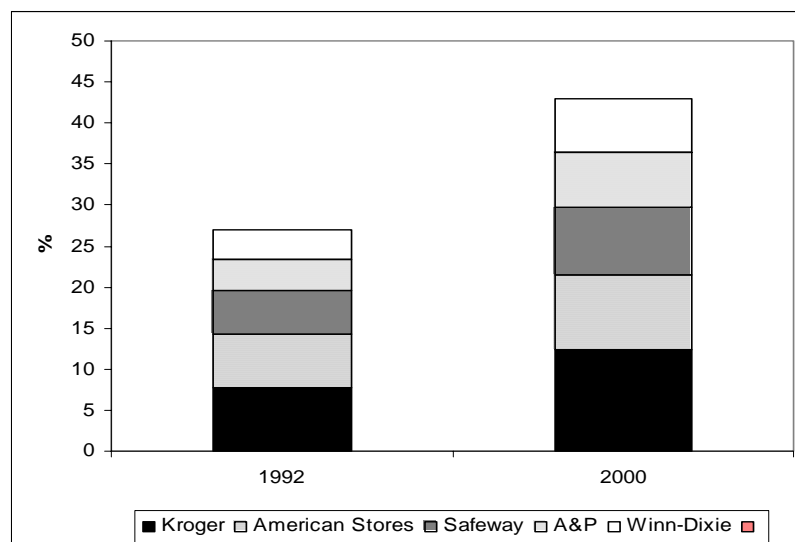
Source: From data in Wrigley, 2001

Figure 6.5 Market share of five largest grocery retailers in Europe, 2000
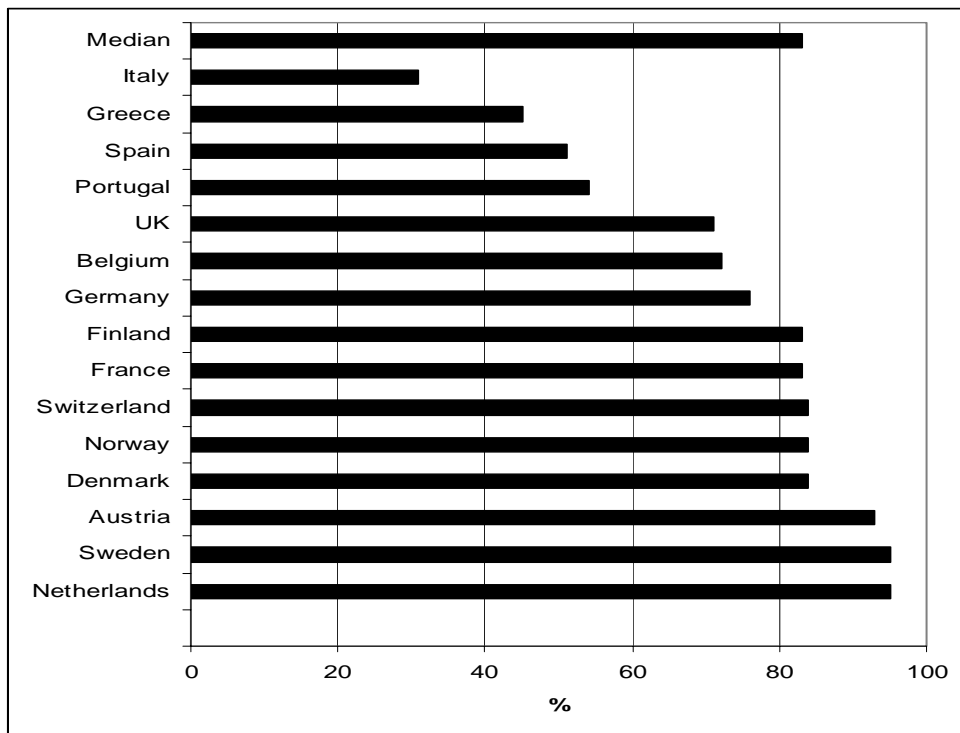
Source: AC Nielson

Faced with this growing power of retailers, there has been an equivalent consolidation process sweeping through the manufacturing industries which supply these grocery chains. Table 6.3 shows the level of concentration in the European food manufacturing sector, covering the production of 17 different products in nine countries, and focusing on the share of production of the three largest firms. In aggregate, across all sectors, the three largest firms accounted for more than two-thirds of production in the nine countries. In only two of the sectors was the average less than 50 percent, whereas in six of the sectors the largest three firms accounted on average for more than three-quarters of total production.

Table 6. 3. Three firm concentration ratios in EU food processing industries

Product	Ireland	Finland	Sweden	Denmark	Italy	France	Spain	UK	Germany	Avr
Baby food	98	100	100	99	96	93*	54	78	86	91
Canned soup	100	85	75	91	50	84	-	79	41*	87
Ice cream	-	84	85	90	73*	52	84	45	72	76
Yoghurt	69	83*	90	99*	36	67	73	50	76	70
Chocolate Confectionary	95	74	-	39	93	61	79	74	-	74
Pet food	98	80	84	40	64*	73	53	77	87	79
Breakfast cereals	92	-	52	70	88	70	82	65	67	73
Tea	96	90	63	64	80	82	62	52	55	72
Snack Foods	72	70*	80	78	71	50	56	73	48	68
Carbonates	85	50	62	-	60	69	79	55	60*	71
Pasta	83	97	82	61	51	57	65	37	49	65
Wrapped bread	85	44	47	59	80	70	96	58*	9	59
Biscuits	83	73	51	44	55	61	53	42	50	58
Canned fish	-	70	72	49	68	43*	33	43*	-	55
Mineral water	-	100	74	70	37	-	31	14	22	50
Fruit juice	-	70	50	65*	62	26	38	35	46	48
Canned vegetables	-	68	47	50	36	29	-	-	-	47
Average	9	79	69	69	67	63	1	56	5	68

* indicates two-firm concentration ratio

Source: Cotterill (1999).

Hence what we can observe is that in the high income consuming countries, there is a growing trend towards consolidation of buying power in the retail grocery sector, and a corresponding increase in concentration in the manufacturing sectors. In many cases these manufacturers and retailers purchase directly from developing countries. Nowhere is this more the case than that of Walmart, whose meteoric growth has made it the world's largest retailer, with sales in 2003 of more than $@bn. It was founded in 1962 and has been the largest retailer in the US since 1995. It began its overseas expansion in 1991 and by 2003 it operated in nine countries, including becoming the third largest retailer in the UK. Walmart's key competitive position is as a comprehensive and low-cost retailer, and in furthering this aim it has moved much of its sourcing to China. In 2003 it directly imported $15bn worth of products from China, alone accounting for 11 percent of all US imports from China.[3] A similar process of global sourcing and price pressure can be observed in the case of retailers in other countries. For example, one of the most successful UK clothing retailers rebuilt its market share by: increasing competition between its suppliers by expanding their number; changing the primary source-country from which garments were being imported; dealing directly with foreign manufactures rather than through intermediaries (particularly in China) and perhaps most importantly, introducing a process of what it called "Cross costing". This involved obtaining quotes from one supplier, finding another supplier to beat this quote, and then

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[3]   Fortune, March 2004: 44)

returning to the original supplier to see if they would further reduce their prices.

But as we saw in Chapter 5, producers in poor countries do not always connect with the retailers of their products through direct contact; they often work through buying intermediaries. Here, too, there appears to be a process of consolidating buying power, although this is more difficult to evidence. Keeping our focus on the food value chain (although straying a little from the manufacturing sector), we can observe a similar process of consolidation in the coffee value chain. Figure 6.6 shows that the very rapid growth in concentration in the coffee processing sector in Europe, with the share of the largest five producers more than doubling from 21.5 percent to 58.4 percent between 1995 and 1998. But it also shows an increase in concentration in the global buying industry, although at a lower pace and to lower levels. This concentration occurred during a period in which (as we saw in Chapter 3) global coffee prices plummeted and this can be directly traced to the simultaneous growth of productive capacity and buyer concentration.

Figure 6.6. Five-firm concentration ratios in European coffee roasting and global buying
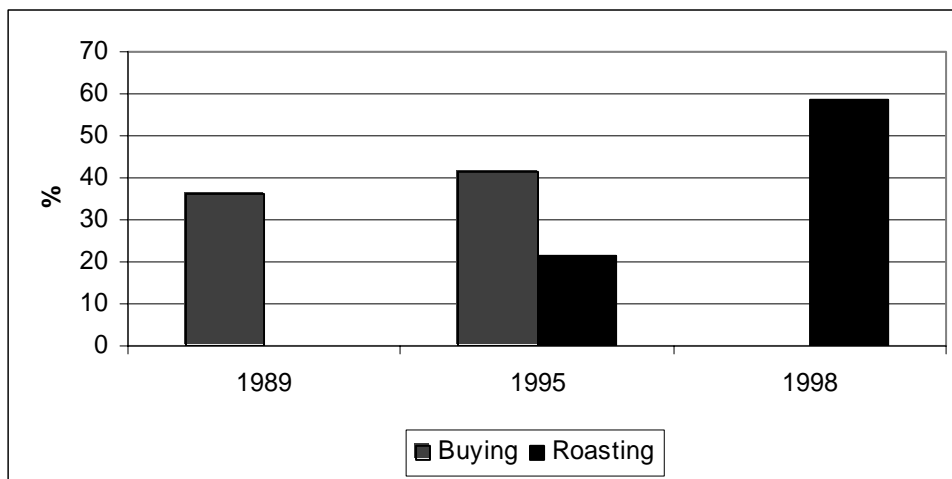
Source: Kaplinsky and Fitter (2001)

But it is not just in the food industry that concentrated power exerted by specialised buyers has played a role in forcing down global prices. In the shoe sector for example, local Brazilian buyers played an important role in the rapid growth of exports of shoes to the US, with a particularly fruitful link being forged between a large local buyer and Nine West (which itself began as a trader and then developed its own retail chain in the US, and subsequently in Europe).[4] As Nine West moved into retailing, it began to focus increasingly on prices, initially forcing down prices from Brazilian suppliers through its Brazilian buying intermediary. When this proved to be inadequate to its needs, it encouraged its Brazilian buyer in the early 1990s to move its key staff into China, switching an increasing proportion of its imports from Brazil. In some

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[4]   Schmitz ….

cases its Brazilian buying intermediary utilised the suppler development skills it had developed to help upgrade its Brazilian producers (a process which we described in Chapter 4) to directly assisting these Chinese suppliers to improve their productivity and consequently to reduce their prices.

Thus, over the past decade we have witnessed a simultaneous process in many sectors of growing concentration of buying power and intensifying competition. This may seem a little confusing to the proponents of free markets. For many years the industrial organisation literature characterised the link between "market structure" (how concentrated is an industry?) and "market conduct" (how competitive is an industry?) as being one in which concentration resulted in monopolistic pressures. The result of concentration, it was feared would be monopolisation, and hence super-profits. But the process which we have been mapping out is not one of monopoly, but rather one of fierce oligopsony, with a small number of large buyers being locked in intense competition. These increasingly large firms benefit from the economies of scale which this offers – particularly in buying power. But this scale reflects a dual process of growing market share and widening global operations. For example, the consolidation of retail grocery power in the US described above has not been associated with anything like an equivalent increase in market concentration within metropolitan areas – whilst the four-firm concentration ratio at the national level rose from 16.9 to 28.8 percent between 1992 and 1998, the same ratio in the 100 largest cities only rose by 3.7 percent.[5] In other words, most of this growing concentration occurred through a larger operating footprint than through growth in particular markets. A similar process is probably occurring in global retailing markets – that is, the market presence and buying power of major firms such as Walmart, Tesco, Ahold and Carrefour is growing as much through their growing global presence as through their increasing presence in their established markets.

What does all of this add up to? Using the food retailing and manufacturing sector as a case study, and informed by developments in clothing, furniture, footwear and auto components, we can observe a rapid increase in global buying power. We can also directly trace this through to growing price pressure on producers, including those in countries exporting to the major global consuming markets. This is because the expansion of market concentration is not resulting in monopoly power in final markets, but rather in fierce oligopolistic rivalry – increasingly played out in a global arena.

6.3 BETWEEN THE ROCK AND THE HARD PLACE – MARGINS AND INCOMES ARE SQUEEZED

In Section 6.1 we showed how productive capabilities have grown in the global manufacturing economy – more and more producers are extending their productive capacity and there have been important shifts in the global geography of production and exporting. In Section 6.2 we documented the growing concentration in buying in many of the sectors into which developing

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[5]   Agricultural Outlook…

country producers are exporting. These two parallel and complementary forces are increasingly subjecting producers in these globalising economies to growing pressures on margins. This is reflected in pressure on prices (Section 6.3.1) and on the barter trade of developing country exporters (Section 6.3.2.). Again, since this is a very data-intensive discussion, the main points are summarised in Box 6.3 if the reader wishes to be spared the detailed discussion.

Box 6.3. Summary of trends in the global price and terms of trade of manufactures

Price of manufactured exports
After a rapid and sustained growth in the price of globally traded manufactures, the rate of price increase gradually slowed after the 1980s and by the end of the decade, on aggregate, the price of manufactures began to fall.

Between 1988 and 2001 (a period for which we have relatively good quality data), the lower the income-group, the greater the tendency for prices to fall; prices of manufactured products from China were even more likely to fall than those from the lowest income group of countries. Similarly, the lower the technological content the more likely prices are to have fallen (although, perhaps surprisingly, the price of resource-based products were less likely to fall than those of low-technology products). And, within each of the categories of sectors reflecting their technological-intensity, prices were most likely to fall the lower the income group of exporting economy.

Terms of trade in manufactures
Prices of manufactured exports from developing countries as a group have fallen compared to those from high-income countries. This reflects a systematic fall in the barter terms of trade of developing countries in manufactures – that is, the unit price of their exports of manufactures have fallen faster than their imports of manufactures. This is true of their trade with the EU, the US and Japan. Within this, the performance of the East Asian newly-industrialising economies has been less badly affected by these falling terms of trade.


6.3.1. Pressures on the prices of manufactured products

At an aggregate level, prices in the global economy grew in the 1960s and 1970s. In some exceptional cases in the developing world, this was expressed in hyperinflation, with annual rates of inflation in thousands of percentage points. But inflationary pressures were not confined to the developing word, and even in the industrialised countries of Europe and North America, annual price increases exceeded 10 percent, and often more than 20 percent in economies such as the UK and Italy. But during the second half of 1980s, and especially during the 1990s, there was a generalised trend towards reigning in price-inflation, and in most countries in the industrialised

world, annual price inflation had fallen to below three percent by the turn of the millennium. In exceptional cases such as Japan in the late 1990s, the rule was one of annual price deflation (falling prices) rather than annual price inflation. Therefore, in charting the evolution of price pressures in global manufacturing trade, we need to be aware that the reduction in price inflation not only reflected the competitive pressures in global production and trade, but also complementary macroeconomic policies designed to provide more stable economic conditions.

Figure 6.7 shows the trend in the aggregate price of world manufactured exports. It charts the annual rate of price change between 1986 and 2000. As can be seen there has been a sustained general fall in these prices, and that from 1996 the aggregate price of manufactured products fell on an annual basis. The problem with this data from the IMF, however, is that it is aggregated, and provides little insight into the variations in this price performance. Therefore, it is important to decompose these trends, and by analysing trade into the EU as a surrogate for global trade, it is possible to break down these price trends into the same country- and sectoral-categories used to analyse the changing geography of production and trade in Section 6.1 above.

Figure 6.7 World Manufacturing Export Price, 1986-2000.
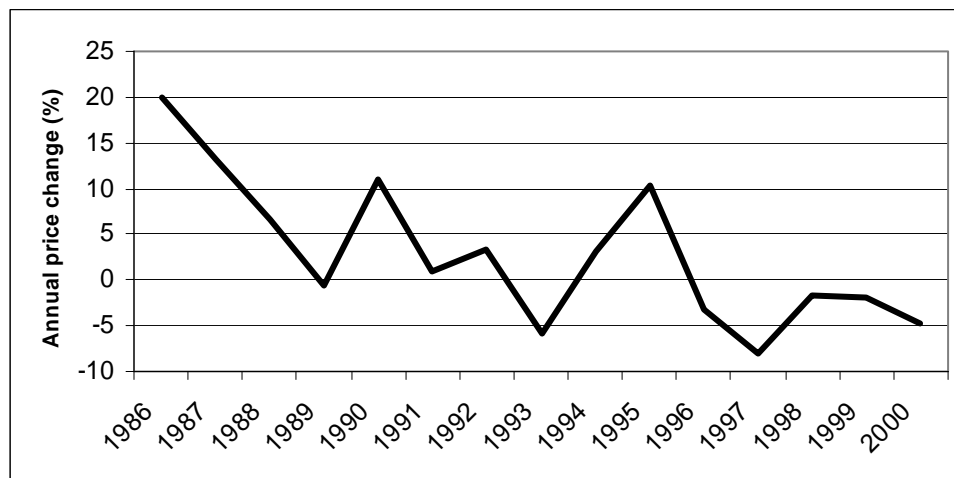
Source: IMF, World Economic Outlook Database, September 2003.

All world trade is defined in terms of a variety of detailed systems which ascribe a unique code to every traded item. The greater the level of detail required in analysing trade, the more detailed the code numbers which are required. One of the major sources of historical trade data is the United Nation's COMTRADE database. This provides five levels of detail – Standard International Trade Classification (SITC) 1-, 2-, 3-, 4- and 5-digits, each broken down into different items. However the problem with using the COMTRADE database for an analysis of prices (defined as the value of trade divided by its volume) is that the commonality of the data begins to break down at the 3-digit level. For example, in the case of furniture trade, (SITC 82), at the four-digit level most countries report volume in tonnes, whereas

China reports in units. With regard to US trade series, some four-digit trade headings only provide data on value, and not on volume. By contrast, the EU uses the Harmonised System (HS) to record its imports and exports. This breaks trade down to a very detailed level – to the 8-digit level in some cases – and also is consistent in the units used to measure the volume of trade. Each of these levels provides greater detail – in the manufacturing sectors, there are 71 2-digit products, 1,008 4-digit products, 4,587 6-digit products and 10,512 8-digit products. (The 8-digit level is not very helpful for analysing trade across countries, since unlike the 2-, 3- and 6-digit levels, some countries use different codes to report trade of the same 8-digit items).

The HS system is therefore a much more useful database if detailed analysis of unit price is required. And detail is important, since it is obvious that the higher the level of aggregation, the more likely detailed price trends will be obscured. We can test this by analysing the extent to which price trends can be identified at different levels of detail of trade disaggregation. Using the augmented Dickey-Fuller (ADF) unit root tests (see the Appendix to this Chapter), the percentage of sectors with discernible price trends between 1988 and 2001 rose from 17 percent to 32 percent to 40 percent at the 2-, 4- and 6-digit levels of disaggregation respectively. Hence this highly disaggregated EU database on manufactured imports is a very useful surrogate for analysing trends in the global price of manufactures, although it suffers from two weaknesses. First, as in the case of all countries using the HS nomenclature, trade data only exists back to 1988. And, second, trade into the EU before 2001 occurred in individual national currencies, and we have therefore had to convert it into a common unit. The unit which we use – as do almost all other analyses of the EU's trade patterns – is the $, converting the EU data from national currencies through the ECU (until 2000), and then using the € from 2001.

What does this data show? There are sophisticated methods available for tracking the unit price of traded products, most notably the augmented Dickey-Fuller (ADF) unit root test which will determine the existence of a price trend, and then the subsequent use of the Kalman-Filter (KF) to determine the rate of price change (see the Appendix to this Chapter). But the problem with the ADF and K-F tests is that they require very long time series to determine trends since they are very sensitive to inter-annual price fluctuations. For this reason we analyse the detailed evolution of world manufacturing prices by comparing prices at the beginning of the period (1988) with those at the end of the period (2001) for the major traded items imported into the EU. (In actual fact, to iron-out the possibility of volatile prices, we compare the average for 1988 and 1999, with the average for 2000 and 2001). We record the percentage of sectors with negative price trends to determine which categories of countries and products are most subject to pricing pressure. As can be seen this is a blunt tool, but given the limitations on both COMTRADE and HS data, it provides the least-worst method for tracking the evolution of price at a high level of product disaggregation.

Figure 6.8 shows the experience of the four major income-groupings of countries exporting manufactures into the EU. It also covers China since as

we have seen it has been such a dynamic participant in global trade. It is clear from this that the lower the per-capita income grouping, the more likely that unit prices are to decline. Significantly, China's exports are even more likely to be characterised by falling prices than are those of the low-income group of countries.

Figure 6.8. Percentage of sectors with negative price trends, 1988/9-2000/2001 by country groupings
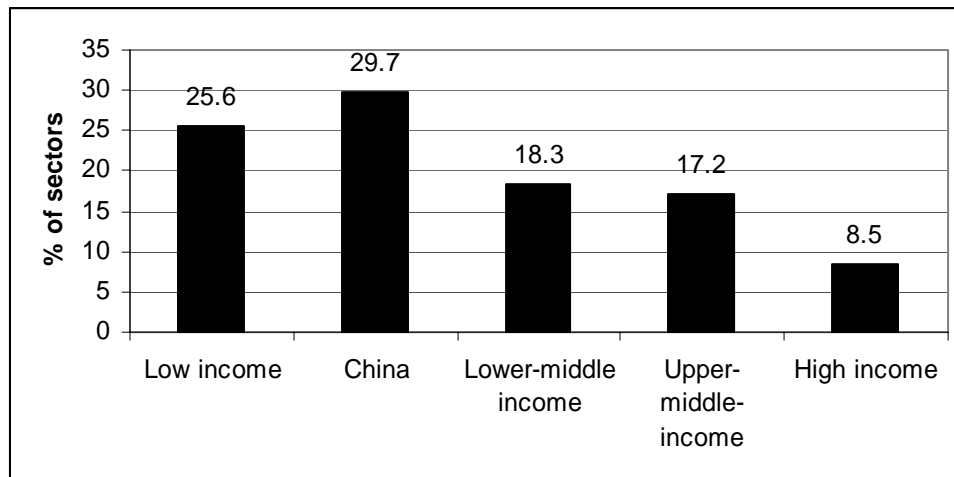

However, country-groupings may not be the best way of showing the vulnerability of producers to growing price pressure. Another way into this is to look at the price performance of different types of products. The presumption here is that price pressures are most likely to be felt in products which benefit least from the innovation rents which we discussed in Chapters 3 and 4. Hence, in Figure 6.9 we observe price trends in relation to the technology-intensity of sectors, drawing on the UNIDO classification which we utilised in the analysis of the changing structure of global trade in section 6.1 above, and examining price trends in more than 2,000 6-digit products. This shows that the lower the technological intensity of these products, the more likely their prices are to fall. Interestingly, the prices of resource-based products (for example, processed vegetable oils) which generally use domestic primary commodities are less likely to fall than those of manufactures which use imported components, and increasingly reflect the vertical specialisation of trade.

Figure 6.9. Percentage of sectors with negative price trends, 1988/9-2000/2001 by technological intensity
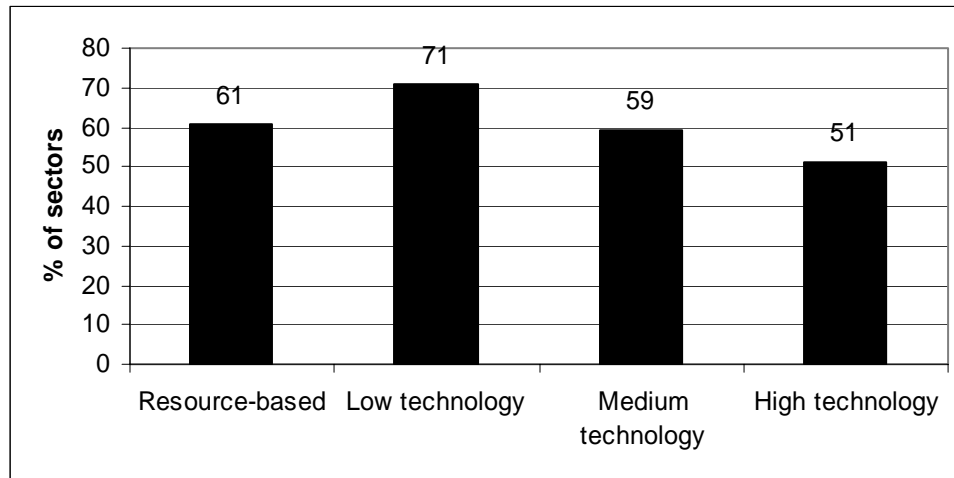
A final characteristic of price trends brings together the two elements driving the analysis in Figures 6.8 and 6.9 above. Is there a tendency for the prices of the different categories of products – measured by their technological intensity – to fall depending on the income group of the exporting country? This data is presented in Figure 6.10 and it shows that in each category of sector, prices are more likely to fall the lower the per capita income groupings of the exporting economy. With the exception of the high-technology sectors, China's relative performance is consistent in the sense that its product prices are less likely to fall than those coming from other low-income countries, but more likely than from lower-middle, upper-middle and high-income economies.

Figure 6.10. Percentage of sectors with negative price trends, 1988/9-2000/2001 by technological intensity and country-grouping
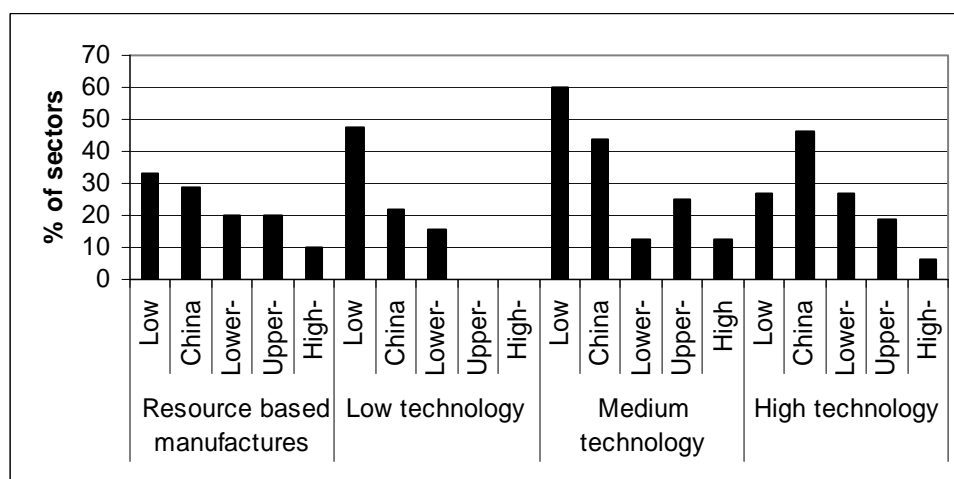
What can we conclude from all of this? In earlier chapters we argued that the key to sustainable income growth lay in the ability of producers to generate and appropriate rents. With deepening globalisation, there is more and more

pressure on producers, and hence more and more pressure on incomes. One way in which this pressure manifests itself is through a squeeze on prices - when costs cannot fall faster than prices, than it is likely that incomes will be threatened, and hence that producers will find themselves with falling real or relative incomes (an issue which we considered in Chapter 2). An analysis of the price behaviour of global manufacturing exports opens an important window into these pressures; It is a cloudy window, since in many cases (for example, electronics), costs may indeed be falling faster than prices. Nevertheless the size of the data analysis – more than 2,000 products in the case of the sector-analysis – provides some protection against this cloudy perspective. Given this, we can indeed conclude that on aggregate it looks as though the lower the income grouping of the country, the more likely it is to be facing severe price competition, and the lower the technological intensity of exports, the more likely price pressures are to be severe. Those countries which are low-income and which export low- and medium-technology manufactures, are indeed most likely to suffer from these competitive pressures.

However, this evidence is not enough to conclude that low-income countries and exporters of low-technology products suffer from globalisation. It is true the returns to their exports may be falling. But they are also importers, and simultaneously gain from falling import prices as consumers of manufactured imports. In other words, insightful though the analysis of unit prices may be, it is only part of the story, and for this reason we need to now focus on the terms of trade of the developing country producers who are the subject of this book.

6.3.2. The terms of trade of manufactures

Box 6.4. Terms of trade trends

Manufactures terms of trade in aggregate
Considered in aggregate, the prices of developing countries manufactured exports compared to the prices of high-income country exports of manufactures and knowledge-intensive services fell, particularly sharply after 1985.

Developing barter country terms of trade
The barter terms of trade of developing economies (that is, the price of their actual manufactured exports compared to their actual manufactured imports) fell in their trade with the EU, the US and Japan. In both the EU and Japan (where data is available), the terms of trade of the Asian developing economies fell less sharply than those of other regions

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In Chapter 3 we recounted the less than successful experience of the 25 million coffee farmers who, despite occasional surges in coffee prices due to natural calamities in prime growing regions, had experienced a fall in coffee prices since the mid-1960s. When account was taken of the simultaneous rise in the prices of manufactured imports of these economies, the resultant purchasing power of their coffee receipts (their barter terms of trade) fell significantly – by 54 percent over the long time period (1964-2000), and then in peak-trough sub-periods by 83 percent between 1977 and 2000, and 25 percent between 1995 and 2000. It is because of these falling terms of trade in coffee and other primary products that most poor countries targeted the expansion of their manufacturing sectors in the post-war period, and manufacturing exports in the post-1980 period.

Yet, as we saw in Figure 6.7 above, as the twentieth century wore on, the price of manufactured products in general also began to fall. But we also saw in Section 6.1 that this fall was uneven between different types of countries (and indeed different types of products). So, how did this uneven price performance play out for poor countries in general? Figure 6.11 begins with a broad approximation. It shows the price performance of manufactured exports from developing countries against that of manufactured products from high-income economies. The data is aggregate and as a consequence hides intra-sectoral differences. Moreover, it is not the true terms of trade of poor countries since it does not compare the price of their imports against their exports, but rather the price performance of their gross manufactured exports compared to that of high-income economies. Nevertheless as a prequel to a more detailed discussion of the terms of trade of developing countries in manufactures it does provide an important backdrop. It shows that between the post 1970 high point (1974) and 1995, the terms of trade (crudely-defined) of these low income exporters fell by around one-third; between 1985 (when China first entered the global market for manufactures with significance) and 1995, they declined by 21 percent.

Figure 6.11. Low-income and high-income country "terms of trade" in manufactures
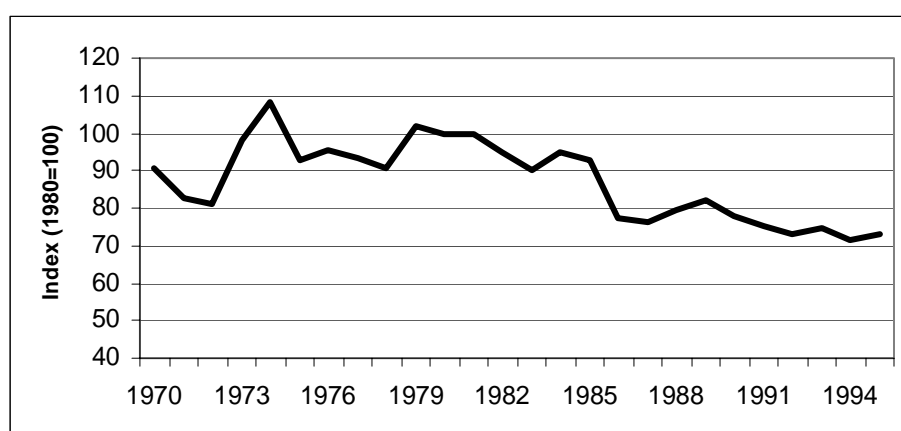
Attempts to calculate the barter terms of trade of poor countries taking into account their actual imports and exports of manufactures are bedevilled by three major problems. First, there are a large number of countries, and although, as we shall see, attempts have been made to separate out the performance of different regions, the calculations are not trade-weighted. That is, the unit prices of manufactured imports and exports into and out of China are given the same weight as those for poor countries with much smaller populations. Second, the unit price analysis is conducted at a very high level of aggregation – in most cases it is as the 2-digit product level. This means for example, using the HS trade data-base, that the "unit price" for HS 61 ("articles of apparel and clothing accessories, knitted or crocheted") lumps together 4-digit items such as HS6111 ("babies' garments and clothing accessories, knitted or crocheted (excl. hats)" and HS6112 ("track-suits, ski-suits and swimwear, knitted or crocheted"). (At a greater level of detail, HS61120 and HS611130 both cover "babies' garments and clothing accessories", but the first category is for cotton and the second for synthetics). And, third, there is the issue of the "numeraire" – the currency used to compare trade which in fact occurs in very many currencies – a problem which we have already highlighted in the analysis of unit prices of EU imports in Section 6.1 above. Following convention, almost all studies of terms of trade use the US$ as the unit of comparison. For all these reasons, the estimation of the terms of trade of developing countries in manufactures is necessarily crude. Nevertheless, it is safe to conclude that broadly-speaking, it provides an indication of general trends.

Maizels has undertaken three separate studies estimating these terms of trade in manufactures, that is, taking account both of the exports and the imports of poor countries. The first looks at the terms of trade with respect to the EU; the second focuses on their trade with the US; and the most recent estimates the terms of trade with Japan.

The EU study analysed the period 1979 to 1994 and compared the EU's terms of trade with a range of developing country groups, and the US and Japan, for both commodities and manufactures. In all cases, the terms of trade performance of countries exporting to the EU was worse for commodities than it was for manufactures. But since it is manufactures which interest us, we only show the results for different countries manufactures terms of trade with the EU – that is, comparing the price behaviour of their manufactured exports to the EU with their manufactured imports from the EU. Figure 6.12 displays the results, from which it is clear that both the US and Japan experienced rising terms of trade in this period. By contrast, the aggregate of all developing countries experienced an annual fall in their manufactures terms of trade of -2.2 percent (compared to -4.2 percent for manufactures/commodities). The least developed countries saw the greatest fall in their manufactures terms of trade (-5.7 percent annually), and East and South east Asia the least significant fall (-1.2 percent annually).

Figure 6.12. EU terms of trade in manufactures, 1979-1994 (percent p.a.).
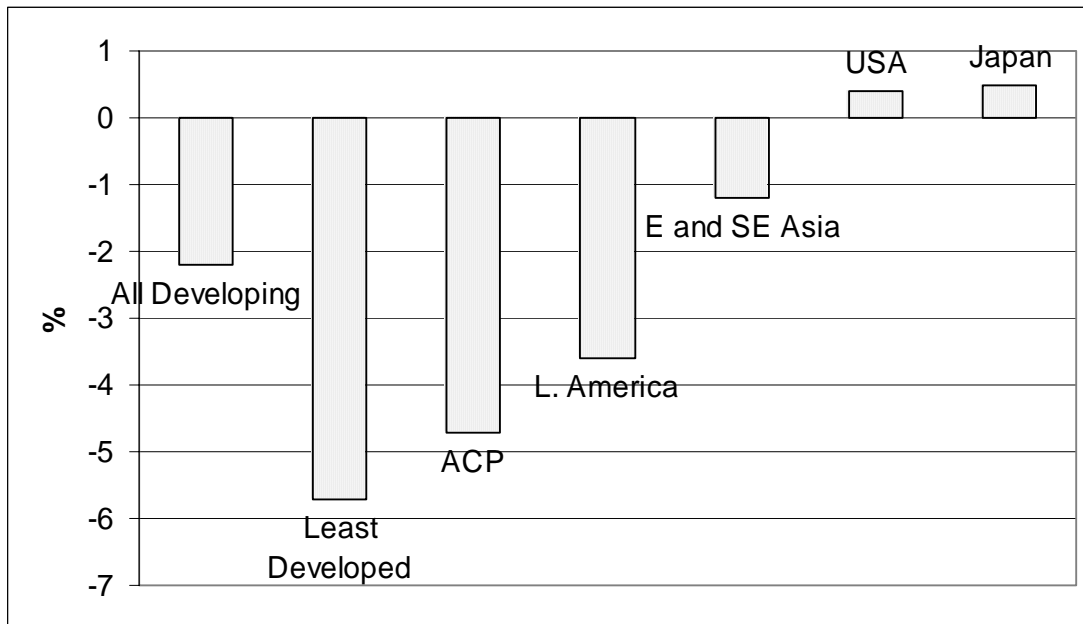
Source : Maizels

A similar picture emerges from an analysis of developing country terms of trade with the US. Taking 1981 as the base year, these fell by 12 percent in total by 1997 with a particularly sharp deterioration during the 1980s. However, during the same period, the manufactures terms of trade of high-income economies with the US rose by 16 percent. In other words, whilst developing country exporters of manufactures were reducing their prices compared to their imports of manufactures from the US, EU and Japanese exporters were increasing their relative prices. No estimations were made for the differential performance of different types or groups of developing countries in their trade with the USA, but in a subsequent study this was done for Japan. Maizels calculated these terms of trade between 1981 and 2000 for a selection of nine Asian economies (China, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan and Thailand) and for the EU and the USA. Both groups – low- and high-income - experienced falling terms of trade in manufactures with Japan. By the end point, the terms of trade decline was 20.7 percent for low-income countries, and 13.6 percent for high income exporters.

6.4. IS CHINA'S GROWING PARTICIPATION IN THE GLOBAL ECONOMY AN EXPLANATION FOR FALLING PRICES AND FALLING TERMS OF TRADE?

In previous sections of this chapter we have shown how relatively poor economies and those producing relatively low-technology products are caught between a rock and a hard place. The hard place is the concentrated power of buyers with a global reach, searching for lowest cost production sites and, if necessary, taking steps to upgrade the capabilities of producers with the potential to lower production costs even further. The rock is the growing presence of producers in the global economy, fuelling the competitive pressures which drive down prices and margins. In this section we will show how China has come to play a crucial role in this emerging competitive environment.

The rapid growth of the Chinese economy in recent years has been exceptional. Between 1990 and 2002, the economy has grown on an annual basis at 9.7%,[6] and by 2001 China's GDP had risen to 12.1 percent of global GDP, and its per capita GDP was 58 percent of the global average per capita GDP (in all cases taking account of the purchasing power of China's currency).[7] Underlying this growth has been a surge in investment – by 20001 China was investing almost 40 percent of its GDP annually, double the level of other low-income economies (Figure 6.13). In 1976, when Korea had a similar per capita income to China's 2003 level (measured in PPP terms), the share of its investment to GDP was only 26 percent. Much of this investment came from abroad and foreign investors crowded into China as a production platform for the global economy. In 1998 and 1999, China gobbled-up 23 percent of all foreign direct investment going to the developing world, and this rose to 33 percent in 2002; if the share of Hong Kong is added to that of China (since much of Hong Kong's FDI inflows were directed towards production on the mainland), the shares rose from 30 to 41 percent of all FDI going to the developing world (calculated from UNCTAD WIR 2003)..

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[6]   WB WDI

[7]   Cheong and Xiao

Figure 6.13. Investment as a share of GDP (%).
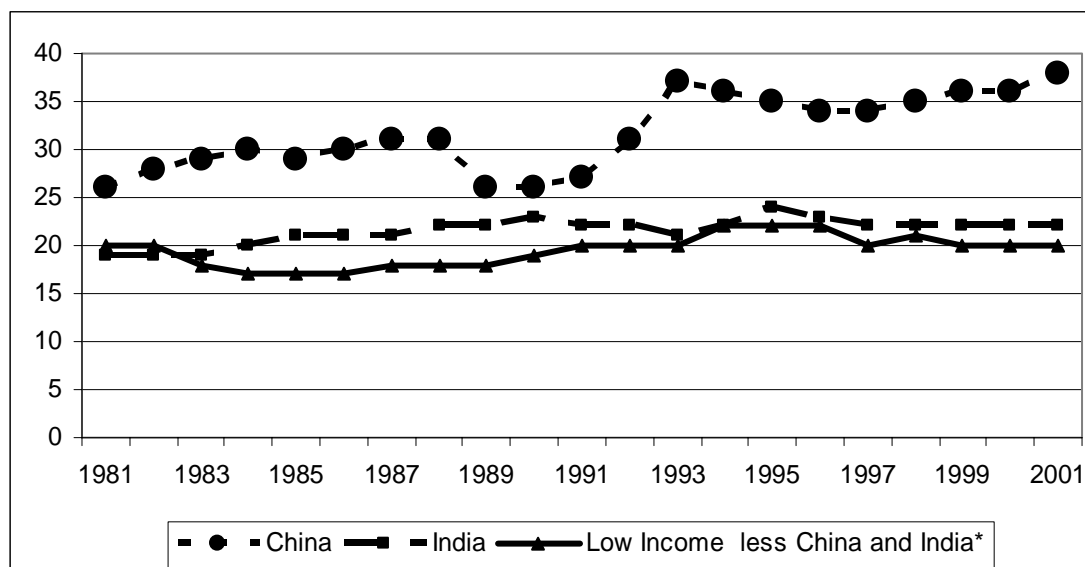
Source: Manole and Martin book/datafiles/investment/china India investment.xls

With this rising productive capacity, came China's significant entry into the global market in the mid-1980s. Until 1985, the pattern of China's exports had been stable – about half was manufactures, with the balance pretty evenly split between natural resources and agricultural products. But the post-1985 export surge was largely built on manufactures, so that in a short period of time manufactures had become dominant; in 1991 they were almost 90 percent of total exports (data from Martin and Manole). The pace of manufactured export growth speeded up through the 1990s after the abolition of the two-tier exchange rate in 1994, and in the five years between 1997 and 2002 manufactured exports doubled – by comparison, during the high points of their export-growth spurts, it took Germany ten years to double exports in the 1960s and seven years for Japan in the 1970s. By 2002 China accounted for more than 20 percent of all developing country exports, and by 2003 had become the world's fourth largest exporter after the US, Japan and Germany

The bed-rock on which this export growth was built was a combination of severe price competition and growing production excellence and product quality. The surge in export growth after the mid-1980s was accompanied by a significant fall in China's terms of trade, which fell by around 25 percent. This fall in the terms of trade was greater for trade with Japan, the EU and the US than it was for trade with other developing countries (Zheng Zhihai and Zhao Yumin 2002) and reflected a combination of falling export prices (see Section 6.3 above) and the production of new low-priced products, particularly the rapid push into the low-tech assembly of high-tech electronics products. These grew rapidly, and the value of high-tech exports more than doubled from $25bn in 1999 to $58bn in 2001 (Liu, Xielin (2002 book/datafiles/Chinas high tech exports.xls). The scale of many of these factories and cities dedicated to exports is shown in Box 6.5.

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Box 6.5. China's global export platforms

- Shunde in the Pearl River Delta styles itself as the microwave oven capital of the world. with 40 percent of global production in a single giant factory.

- Shenzhen makes 70 percent of the world's photocopiers and 80 percent of its artificial Christmas trees.

- Dongguan has 80,000 people working in a single factory making running shoes.

- Zhongshan is the home of the world's electric lighting industry"

- Pou Chen has two shoe plants employing 110,000, making 100m pairs of shoes a year.

- Flextronics (a Singapore firm) has a Chinese plant which doubled its payroll to 12,000 in a year, making Xbox electronic games consoles. In 199, only 5-10 per cent of suppliers were local; by 2003 50-70 percent of inputs were locally-sourced

Source: D. Roberts and J. Kynge, "How cheap labour, foreign investment and rapid industrialisation are creating a new workshop of the world", Financial Times, February 4, 2003.

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All of this has translated into China's growing dominance in global markets in many sectors, particularly for those buyer driven sectors which, as we observed in Chapters 4 and 5, have been targeted for export growth by most poor countries. Table 6.4 shows how significant its presence has become in the US, Japan and the EU in key sectors of relevance to developing country exporters. Between 1980 and 2002, its share of total manufactured imports (including many products which China does not produce or export in significant numbers) rose from virtually nothing to 14 percent in the US. In the buyer-driven consumer products sectors which have not been subject to major import quotas, its share of total imports have grown dramatically, particularly in the case of Japan and the USA. In footwear, and toys and games where its presence has not been hindered by import quotas, it now accounts for more than two-thirds of all imports into both the US and Japan, and for two-thirds of imports of travel goods into the USA. The pace of its growing presence in the clothing and textile sectors has hitherto been constrained by import quotas, but as we saw in Chapter 5, these are soon to be abolished and it is expected that China will become the premium source of supply in both these sectors.

Table 6.4. Share of imports from China – EU, Japan and the USA

	EU		Japan		USA	
	1995	**2002**	**1995**	**2002**	**1995**	**2002**
All manufactures	2.2	4	5.3	6.8	7.6	13.8
Textiles	2.5	4.6	31.3	47.5	11.6	15.8
Clothing	7.9	11.5	56.6	78.1	14.9	15.1
Other consumer products	6.4	9.5	19.7	31.6	25.5	36.5
Footwear	6.7	9.7	47.3	67.4	52.3	68.2
Travel goods	40.4	45.1	32.9	45.2	47.4	64.2
Toys and games	26	35.8	26.4	63.5	48.4	66.6
Furniture	7	6.2			11.2	34

Source: WTO

An indication of the significance of China's growing share of US imports is the size of the US trade deficit with both China and "Greater China" (China, Hong Kong and Taiwan). Figure 6.14. illustrates how this has ballooned since 1995, reaching $103bn and $114bn respectively by 2002. It is notable that in the earlier period, much of China's exp[orts to the US was indirect, reflecting the "triangular manufacturing networks" described in Chapters 5 and 6. However, as the 1990s wore on, an increasing proportion of a rapidly growing volume of imports from the sub-region came directly from China.

Figure 6.14. US Current account deficit with China and Greater China (China, Hong Kong and Taiwan)
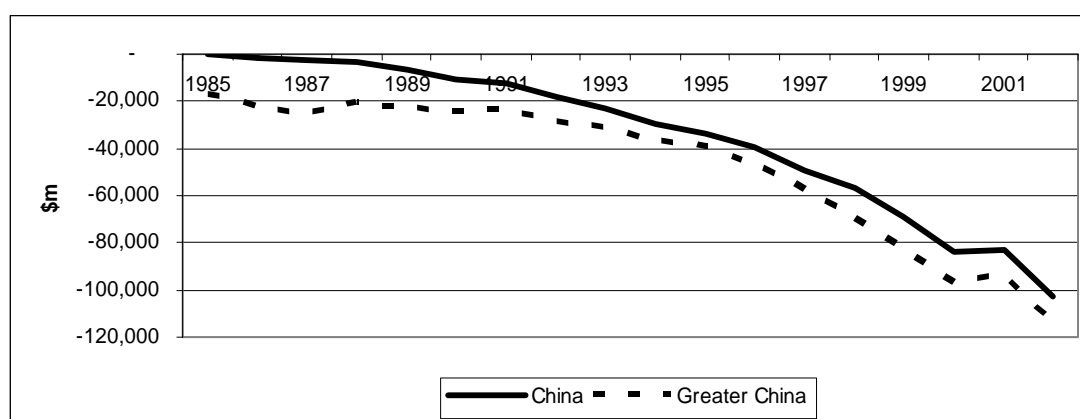
Source: From data in Cheong and Xiao

In summary, in this Chapter we have charted the forces which are squeezing the margins of low-wage economy exporters of manufactures. They are caught between a rock and a hard place, that is, between growing production capabilities around the world, and the increasingly concentrated power of global buyers. This has led to a squeeze on the prices of their manufactured exports and despite their gains on the imports of manufactured products, to declining terms of trade with the major consuming regions of the world. A major cause of this price pressure has been the rapidly growing presence of

China in global markets for manufactures. It is not just the extent of this pressure on margins which is a source of concern in regard to our focus on global incomes and distribution, but the trends. What we have seen in this chapter suggests that if anything these pressures are likely to worsen as the early decades of the 21st century wear on. But, does this necessarily spell gloom for poor countries? Will the growth of production capacity not inevitably lead to an equivalent expansion of consumption power to rescue these low-income exporters from the trauma of declining prices? These issues are considered in the following chapter.

Appendix to Chapter 6

In the estimation of unit price trends we have utilised the Augmented Dickey Fuller (ADF) unit-root test, based on a regression of the form:

$$\Delta y_t = \alpha + \phi y_{t-1} + \sum_{i=1}^{T} \Theta \Delta y_{t-i} + \delta t + \varepsilon_t ,$$
(1)

where ε_t is a random error term, and α and t are a constant and time trend respectively.

The ADF test corresponds to the value of the t-ratio of the coefficient ϕ. The null hypothesis of the ADF test is that y_t is a non-stationary series, which is rejected when ϕ is significantly negative. Twelve lags, a constant, and a time trend were included in the ADF regressions of the levels of the variables. For the level variables, 1988-2002 monthly data is used.

We also applied the Kalman Filter as an indicator of the slope and size of these trends. This technique is ideally suited to determine the slope of a price trend and ideally follows the application of the ADF unit-root test. Following the exposition in Koopman, Harvey, Doornik, and Shepard (2000), a general univariate time series model can be written as

$$x_{it} = \lambda_{it} + \psi_t + \varepsilon_t$$
$$\varepsilon_t \approx IN(0, \sigma_\varepsilon^2)$$
$$t = 1,...,T$$
(2)

where x_{it} is the unit price, λ_t is the trend, ψ_t is a first-order autoregressive element, and ε_t is an error term. The trend component (λ) in (2) is a key and flexible element, and can be specified as

$$\lambda_{it} = \lambda_{t-1} + \delta_{t-1} + \varsigma_t$$
(3)

where δ_t is the slope of the trend component λ_t.

Monthly data was used, with the fixed level and slope specification (and an auto-regressive component), including dummy interventions for the periods 1996/97 and 2001, to explore the impact of the Asian crises and the introduction of the Euro, respectively.

Both the ADF unit-root test and the Kalman Filter test have severe data-limitations and require a long time-series. For example, a group of commodity analysts convened by the FAO concluded that ADF unit-root tests were unhelpful since the data only went back to 1926! Trying to either get these tests to autonomously determine dummies for changing trends within the 1988-2002 period, or imposing our own dummies (in 1997 for the East Asian Crisis, or January 2001 for the introduction of the €) compounds these

difficulties.   Because of these technical difficulties, despite the attractions of the unit-root and Kalman Filter analyses, the short time series of data (1988-2002) is crippling. Therefore, only the ADF test was used on the data, and only to determine the existence of price trends at different degrees of data disaggregation. Instead, annual unit price performance was calculated for the country- and sector-groups by comparing two-year average prices at the onset (1988/9) of the period with two-year average prices at the concluding date (2001/2). (Two year-average prices were used to smooth out any volatility in the data).