Chapter 3

The Apparel Sector in the Global Economy

A. Global shift in manufacturing

It is important to start by affirming that the major centres of manufacturing activity remain within the developed world. Dicken (1998), for example, provides figures which demonstrate that (in 1994) the USA was still responsible for 27% of world manufacturing production followed by Japan with 21%; Germany with 12% and France and the UK with a combined share of 8.6% (see Table 3.1). However, one of the most significant developments in the world economy over the last three or four decades has been the shift in activity away from the older, developed economies towards the newer, developing countries. This trend has been comprehensively documented by Dicken (1998). This so-called 'global shift' can be illustrated by the following statistics from Dicken (1998):

(1) The share of world production generated within the developed countries fell from 95% in 1953 to 80% in 1995, while the corresponding share produced in the developing countries rose from 5% to 20%.
(2) The share of some thirteen Newly Industrialised Countries (NIEs) rose from 11% between 1963 and 1987. The share of South Korea, for example, rose from 0.1% to 2.7% between 1963 and 1994.
(3) In terms of world trade (as opposed to production) the changes, in proportionate terms, were even more dramatic. The growth rate of exports of manufactured products from the developed world between 1970–86 was, for example, only 13% p.a. as compared to 21% p.a. from East and South East Asia. The high growth rates achieved by some of the developing areas are demonstrated in Tables 3.2 and 3.3 together with the impact these differences in growth rates had on the world league table of exporters over a 30-year period. The majority of these movements were, in the words of Eenennaam (1996, p. 88) 'pursuing a low cost strategy'.

Table 3.1 Sources of manufacturing production, 1994.

Country	Rank	Percentage of world total
United States	1	26.9
Japan	2	21.0
Germany	3	11.6
France	4	4.5
United Kingdom	5	4.1
Italy	9	2.2
Canada	10	1.7
Spain	12	1.4
Australia	14	1.1
Switzerland	15	1.0
		75.5
South Korea	6	2.7
Brazil	7	2.6
China	8	2.3
Argentina	11	1.5
Taiwan	13	1.2
Total top 15		85.8

Source: Dicken, P. (1998) *Global Shift*, Paul Chapman, London.
Notes: The top five (all developed countries) were responsible for 68.1% of world manufacturing production.

Table 3.2 Annual growth rates and shares of world manufactured exports in some Asian economies.

Country	Annual growth rates (%)		Shares of world manufacturers exports (%)	
	1970–80	1980–94	1963	1995
South Korea	22.7	12.3	0.01	3.1
Taiwan	16.5	10.0	0.20	2.9
Hong Kong	9.9	15.8	0.80	4.4
Singapore	—	12.7	0.40	2.7
Malaysia	3.3	12.6	0.10	1.5
Thailand	8.9	15.5	—	1.1
Indonesia	6.5	6.7	—	0.8
China	8.7	11.5	—	3.4
USA	Not given	Not given	17.4	12.4
Germany	Not given	Not given	15.6	12.3
Japan	Not given	Not given	6.1	16.6

Source: Dicken, P. (1998), *Global Shift*, Paul Chapman, London, derived from Tables 2.4 and 2.5.

Table 3.3 Annual growth in apparel production, 1972–1994 (%).

	1972–1987	1980–1989	1990–1993
Developed countries	−7	−0.3	−3.7
Developing countries	+56	3.1	−1.5
Planned economics	+48	+2.0	—
First generation NIE	N/A	+3.3	−5.0
Second generation NIE	N/A	+3.6	+7.1

Source: Dicken, P. (1992), *Global Shift*, Paul Chapman, London, Table 8.4 and Dicken, P. (1998), *Global Shift*, Paul Chapman, London, Table 9.4.

B. Global shift in apparel production

Dicken (1998, p. 39) points out that 'a key characteristic of NIEs' exports has been their selective nature' and that they do tend to be most heavily involved in industries which are particularly sensitive to global shift.

As has been noted in Chapter 1 (and as will be considered in more detail in Chapter 4) the production of apparel has remained a labour intensive operation, especially at the assembly (sewing) stage. Therefore, it follows logically that apparel production will be under particularly severe pressure to relocate to low wage areas. As will be seen in Chapter Four, hourly labour costs in apparel assembly in, for example, China, stand at something like 3% of the UK level. It will not be surprising, therefore, to discover that global shift in apparel production has been particularly dramatic.

In addition, it will be recalled from Chapter 1 that the textile and apparel sectors are frequently the first industries to be established as nations industrialise. As a result (Dickerson, 1995, p. 196) the 'developing countries' share of global apparel production more than tripled between 1953 and 1980, going from 8% to 25%'.

In Taplin's words (1997, p. 2):

> 'clothing production in the high wage economies is often regarded as a "sunset" industry undergoing rapid restructuring ... leaving garment production to the newly industrialised countries as part of an international division of labour'.

Tables 3.3 and 3.4 illustrate the changes which have taken place in the geography of apparel production in the thirty years between 1963 and 1993. These changes have continued into the later 1990s with a further fall in production of 4% in the period 1990–1996 (European Study Service 1997). These global shifts in production are inevitably reflected in declines in employment although

Table 3.4 Growth of Apparel Production 1965–1985 (% per year).

Country	% growth
Germany	−7.1
UK	1.0
Netherlands	−5.7
USA	1.3
Turkey	4.1
Hong Kong	9.5
Singapore	8.7
South Korea	23.7
Malaysia	10.1
Egypt	11.0
Indonesia	10.4
Philippines	15.2

Source: Scheffer, M. (1992), *Trading Places*, University of Utrecht, p. 52.

changes in labour productivity influence the exact nature of the relationship between charges in production and movements in employment. This is particularly apparent in the case of the UK – see Table 3.5. The decline in employment in the developed countries has been quite spectacular. Dicken (1998, p. 311) observes that:

> 'the five leading EU countries . . . lost 700 000 jobs in clothing between 1970–1993. The early 1970s were a watershed for clothing employment in most of the leading industrialised countries. In the UK a total of 180 000 (disappeared) in clothing between 1970 and 1993. Almost 380 000 (jobs) disappeared in the clothing industry in the USA'.

This process of what is somewhat euphemistically called 'restructuring' continued unabated into the late 1990s. Anson and Simpson (1988) show that clothing production fell in the EU by 5% in the first nine months of 1997 and it has been argued above (Chapter 1) that the late 1990s in fact represent a second watershed for the trend in employment in the apparel sector in the UK. The net impact of global shift in apparel production is summarised in Table 3.6.

In the light of the preceding analysis it might seem somewhat surprising that the major producers remain the developed countries. The reason for this is that the tables normally used to illustrate global shift are based on index numbers which show rates of change over time and convey no information about the size of the base from which those changes were calculated. A similar point is made by Young (1999) who argues that the generally accepted view of East Asian growth rates has been distorted by a failure to allow for the favourable (but maybe once and for all) impact of a rapid move out of agriculture, a vast increase in participation rates and a huge investment in education.

Table 3.5 The influence of productivity increase on employment and production in the EU, 1984–1994.

Country	Influence of productivity increase
Germany	1.15
Denmark	0.99
Greece	1.50
Spain	1.70
France	0.80
Irish Republic	0.94
Italy	23.60
Portugal	0.24
UK	55.5
EU	1.33

Source: *1996 Annual of EU Textile Policy*.

Notes: (1) If the figure is 1.0 this means that the percentage changes in employment and production were the same e.g. both fell by 10% or both rose by 10%.

(2) If production and employment both fell then if employment fell more than production due to increases in productivity the figure is greater than 1. If employment fell less than production then productivity fell and the figure is less than 1.

(3) In the table both employment and production fell with the exception of Portugal where both rose but employment rose much more slowly than production indicating that production fell.

(4) All calculations by the author.

Table 3.6 Global shift in apparel production 1980–1990.

Country	Percentage change 1980–1999
USA	+1.6
Italy	−0.4
Germany	−2.0
France	−0.6
Japan	—
UK	+0.6
Spain	−0.2
Hong Kong	+1.3
India	+1.1
Brazil	+0.4
Mexico	+0.1

Source: Singleton, J. (1991), *The World Textile Industry*, Routledge, London p. 15.

Notes: (1) Data converted to % change by author.

(2) The USA, Germany, France, Italy and the UK were still responsible for 54% of total production in 1990.

Therefore, the rapid growth of output and exports in areas starting from a small base need not and should not be necessarily equated with the total extinction of production or exports from the older, developed centres. Figures published by the United Nations for 1996–97 (see Table 3.7 and 3.8) show that the developing countries' share of world apparel exports by garment type ranged from 55% to 71%. Therefore, by definition, the share of exports still produced by the older, developed countries ranged from 45% to roughly 30%. Nevertheless, there has been, as noted, a very considerable fall in *employment* in both the textiles and clothing sectors in most developed countries and there is no doubt that as Dicken (1998, p. 233) points out:

> 'global shifts in the textile and clothing industries exemplify many of the intractable issues facing today's world economy, particularly the trade tension between developed and developing countries'.

Table 3.7 Developing countries' share of world apparel exports by garment type 1994/1995.

Men's outerwear (SITC842)	56.8%
Women's outerwear (SITC843)	55.0%
Underwear (SITC844)	71.2%
Outerwear knitted (SITC845)	57.0%
Underwear knitted (SITC846)	56.5%

Source: UN Handbook of International Trade and Development Statistics 1996–97.

It should be noted that the experiences of the developing countries have not been uniform. Dicken (1998) argues that there has been a second global shift within that widely defined group of nations in that (between 1980 and 1993) the Philippines, Malaysia and Indonesia experienced explosive growth in apparel production, while the so-called first generation NIEs such as Hong Kong and South Korea experienced only modest growth or even, as in the case of Taiwan, decline. This will not, of course, provide any comfort to the UK or the other high labour cost countries in which apparel production and employment have declined so severely.

The result of this global shift over time has been to alter the composition of the league table of major apparel producers – as was seen in Table 3.6. The most notable features of this table are the rise in importance of Hong Kong, India and Korea, but also the remaining role of America, Italy, Germany, France and the UK. These five countries were still, in 1990, responsible for some 60% of world apparel production as opposed to 61% in 1980. However, it must be noted that these figures predate the rise of China as a centre of apparel production which is made apparent in the trade data below. The geography of world production can be studied (in volume terms) for 1996 (UN,

Table 3.8 Individual countries' share of world apparel exports 1994/1995 (%).

Country	SITC Division					Average All Trade
	842	843	844	845	846	
Hong Kong	4.9	7.1	8.5	10.5	4.6	0.7
China	20.3	17.7	18.3	12.7	12.7	3.0
Pakistan	0.9	—	—	—	1.7	0.2
India	—	4.1	6.3	—	2.6	0.7
Turkey	1.7	2.8	2.6	5.7	5.5	0.4
Korea	2.3	2.6	4.0	4.5	3.4	—
Thailand	3.7	3.1	3.8	2.7	—	—
Indonesia	—	2.4	3.1	1.9	2.2	—
Taiwan	1.6	—	2.5	3.6	—	—
Mexico	1.9	1.7	—	—	2.1	—
Singapore	—	—	—	1.7	1.7	—

Source: *UN Handbook of International Trade and Development Statistics 1996–97.*
Key: Men's outerwear (SITC842)
Women's outerwear (SITC843)
Underwear (SITC844)
Outerwear knitted (SITC845)
Underwear knitted (SITC846)

1996). The figures reveal some interesting changes between 1987 and 1996. World apparel production (in terms of pieces produced) rose by less than 1% in this period – almost exclusively because of the rapid growth in the production of underwear, as is seen from Table 3.9. Table 3.10 reveals, somewhat surprisingly, that the share of world output of most categories of apparel accounted for by the USA remains very high. In addition, it would appear that in most categories the American share of world output (in terms of pieces) actually rose between 1987 and 1996, e.g. men's' trousers, men's' suits, men's' raincoats, women's coats. Secondly, the Asian share of world apparel output of most categories did rise between 1987 and 1996, and was usually above 30% of the total. In only four of the fourteen categories, however, did the Asian share exceed the American share of world production.

These statistics are not comparable with the figures in Table 3.7 because they are in volume not value terms. However, even in terms of the lower percentages in Table 3.7, and even if the heroic assumption is made that none of the Asian production actually belongs to companies based in the developed countries, the figures hardly support the view that the developed world has ceased – under the force of global shift – to be an important centre for apparel production (as opposed to employment).

Table 3.10 shows the broad global division between the USA, Asia and the EU by garment type in volume terms 1990–1996. The interpretation of these

Table 3.9 World apparel production in units.

	% of total 1996	% change 1987–96
Men's and boys' jackets	2.0	+43
Men's and boys' overcoats	0.2	−48
Men's and boys' raincoats	0.1	−63
Men's and boys' suits	0.8	−24
Men's and boys' trousers	8.0	−13
Women's and girls' slacks, skirts	12.3	−8
Women's and girls' suits	0.6	−20
Women's and girls' blouses	8.2	−28
Women's and girls' coats	0.6	−39
Women's and girls' dresses	4.6	−18
Men's and boys' shirts	9.5	−16
Men's and boys' underwear	24.7	+27
Women's and girls' underwear	28.4	+17
Women's and girls' raincoats	0.02	−20
Total	100	+1%

Source: UN Commodity Statistics Yearbook (1996), Vol 2.

Table 3.10 Shares of world production of apparel in volume terms 1990–1996 (%).

	1990			1996		
	USA	Asia	EU	USA	Asia	EU
Men's and boys' jackets	14.1	46.5	26.3	10.4	63.7	15.6
Men's and boys' overcoats	5.3	24.7	14.3	7.0	29.7	39.7
Men's and boys' raincoats	29.6	17.3	41.5	42.2	37.8	23.8
Men's and boys' suits	16.0	41.8	18.3	21.4	39.5	14.6
Men's and boys' trousers	18.6	24.8	32.8	21.2	33.7	25.3
Women's and girls' raincoats	33.8	20.6	37.8	NA	21.6	39.2
Women's and girls' slacks, skirts	50.6	24.3	18.3	63.4	16.3	15.3
Women's and girls' suits	16.1	52.4	15.0	NA	44.4	13.4
Women's and girls' blouses	27.7	44.7	16.9	43.9	38.7	14.0
Women's and girls' coats	NA	12.1	37.9	21.6	20.5	37.7
Women's and girls' dresses	50.8	13.3	19.6	62.9	16.5	11.4
Men's and boys' shirts	14.4	36.1	22.0	NA	36.9	15.6
Men's and boys' underwear	71.8	14.5	8.2	78.3	7.7	4.5
Women's and girls' underwear	42.2	32.9	13.4	51.1	9.9	15.2

Source: UN Commodity Statistics Yearbook (1996), Vol 2.

Notes: (1) NA = not available/given.
(2) As noted in the text the table does not incorporate data for China.
(3) The USA figures are often for 1993 or 1994, not 1996. This renders the figures in this column somewhat unstable.

figures is not entirely straightforward, in particular because the USA figures are often given for 1993 or 1994, even though they appear in the column headed 1996; more importantly, China is not included. If, initially, the figures are accepted at face value, it would appear that the following conclusions can be drawn:

(1) The USA was, in 1996, the main source of production of six categories of garment. It had gained share (since 1990) in eight categories and lost share in two. It was the main producer in the biggest sectors, usually.
(2) Asia was the main producer of five categories of garments, had increased its share of world output of eight categories and lost share in five.
(3) The EU was the leading centre of production for three categories only (one of which did not have a USA figure for 1996); it had lost share in nine cases and gained share in five.

If attention is focused on the 1990 data (because of the problem with comparability of figures in the 1996 column) the USA was the main production centre for four categories with Asia being number one for seven categories of garment. However, between 1987 and 1990, the USA had gained share in only two cases, whereas Asia had increased its share of production in nine categories of garments. Once again, there is some conflict between *changes* in proportion and the *absolute* size of the share of production enjoyed by the various regions. Unfortunately, China is not identified as an independent source of production in these statistics. This renders the value of global production statistics, for which the authoritative source is the United Nations, somewhat problematical. This was emphasised in a qualifying statement on data by Dickerson (1995, p. 197) but is easily lost sight of given that no other superior data exists. Darnay's (1998) handbook of world manufacturing statistics also excludes China.

Private correspondence between the author and the United Nations statisticians confirmed that China has supplied no data on apparel production since 1992 and even then data was limited to a few somewhat unimportant garments such as socks. The same problem does not, somewhat surprisingly, occur with trade data so it is clear that China has become a major exporter of apparel. It is difficult to know what impact this omission might have on Table 3.10. If womens' and girls' slacks are taken as an example and it is assumed that China had, in fact, 20% of world output (based on her share of trade), this would increase Asia's share to 30% and reduce the USA's share of output to 53%. Therefore, while this does change the overall pattern of production it does not destroy the argument that the developed world remains an important centre of apparel production.

On the other hand if, as put forward by Liangjun (1999), the figure of 15 billion garments produced in China in 1998 is correct, this would raise the global output figure from 6.8 billion (1996) to 21.8 billion, of which Asia (including China) would then be producing some 74%. This clearly puts an entirely different slant on the global production figures. Leung (1995; 2000), on the other hand, gives estimates of Chinese clothing production of just under 3 billion pieces in 1994 and almost 2 billion in 1999. It is impossible to reconcile

these widely diverging figures and it does seem implausible that production would have fallen between 1994 and 1999. Leung in correspondence with the author observes that statistics in China: 'may not be precise' because of variations in definitions adopted so that the figures should be used only 'for reference and may not be 100 per cent trustworthy'.

The rise in importance of Mexico as a centre of apparel production since the formation of the North American Free Trade Area in 1994 is instructive in many ways. In the period 1990-1996 output of seven garment categories for which data was available rose by 132% (UN, 1996). Knight (1999) reported that output rose from 250 million pieces in 1992 to 380 million in 1996. Exports of clothing rose by 81% per year between 1991 and 1996. Khanna (1999) observed that Mexico had become, to the USA:

> 'the top supplier in terms of volume and for the first time it is also the leading supplier in value. Mexico is the USA's fastest growing supplier ... In contrast, imports (into the USA) from China fell in both value and volume. Mexico's rapid growth will continue as Mexican and US firms take advantage of its special access to the US market under the North American Free Trade Area.'

This provides a potent illustration of the impact trade barriers (or their removal) can have on the pattern of global activity – see Chapter 9 for a detailed consideration of the role of trade barriers in the textile-apparel supply chain. The current expansion linked to preferential access to the US market may, in turn, correct the damage allegedly done to the unskilled labour market in Mexico by earlier trade reforms which, according to Hanson (1999), exposed the country to competition from economies with even greater reserves of cheap labour.

An EU-Mexico Trade Agreement was concluded in 2000 which covers trade in textiles in both directions under which Mexican goods enter the EU duty-free. It is difficult to assess the potential of this agreement to act as a 'back door' route into the EU, although this was not its stated intention.

C. The global pattern of consumption

As Dickerson (1995) points out, global apparel consumption is not easy to measure on a consistent basis across countries. Nevertheless, it is clear that consumer demand for textiles and clothing products varies greatly from country to country, irrespective of how consumption is measured (Dicken, 1998). Variations in fibre consumption per head by region are shown in Table 3.11. There is little doubt that the main cause of this variation is variation in income levels between countries. This relationship is well established in the

Table 3.11 Fibre consumption per head (kilograms) and self sufficiency indices (%) 1993 and 2005 (forecast).

	Consumption per head (kilograms per head)		Self sufficiency indices (%)	
Area	1993	2005*	1993	2005*
USA	29.0	32.5	76	66
EU (15)	16.7	21.5	65	47
Japan	21.3	26.0	66	52
Developed countries	16.4	21.7	72	61
China	5.3	6.4	136	150
South Asia	2.6	3.3	154	175
Developing countries	4.1	5.2	131	145

Source: Coker (1997), World Textile and Clothing Consumption: Forecasts to 2005, *Textile Outlook International, March 1997.*

Notes: (1) * Forecast.
(2) This is the latest global forecast available.

literature (Jones, 1997) and (Norum, 1999), as is demonstrated by Fig. 3.1, for example.

Traditionally the relationship between income per head and textile consumption is expressed by Fig. 3.2. Clearly, therefore, if forecasts of income growth by country (or region) are available it should be possible to forecast which areas are most likely to experience a growth in textiles and clothing consumption. Forecasts for future world fibre consumption appear regularly in *Textile Outlook International* and Table 3.11 additionally summarises the

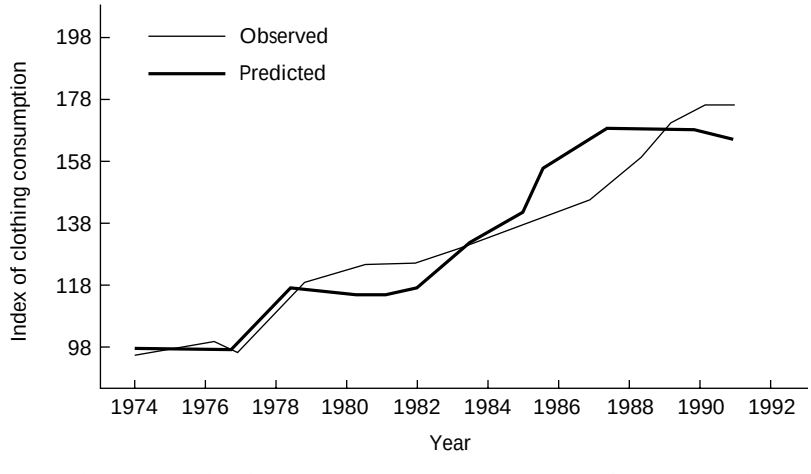

Fig. 3.1 The relationship between apparel consumption and income in the UK. (Plot of observed *vs* predicted clothing consumption in the UK from 1974 to 1991.) Reproduced from the *Journal of Fashion Marketing and Management*, 1997, **1**, with permission.

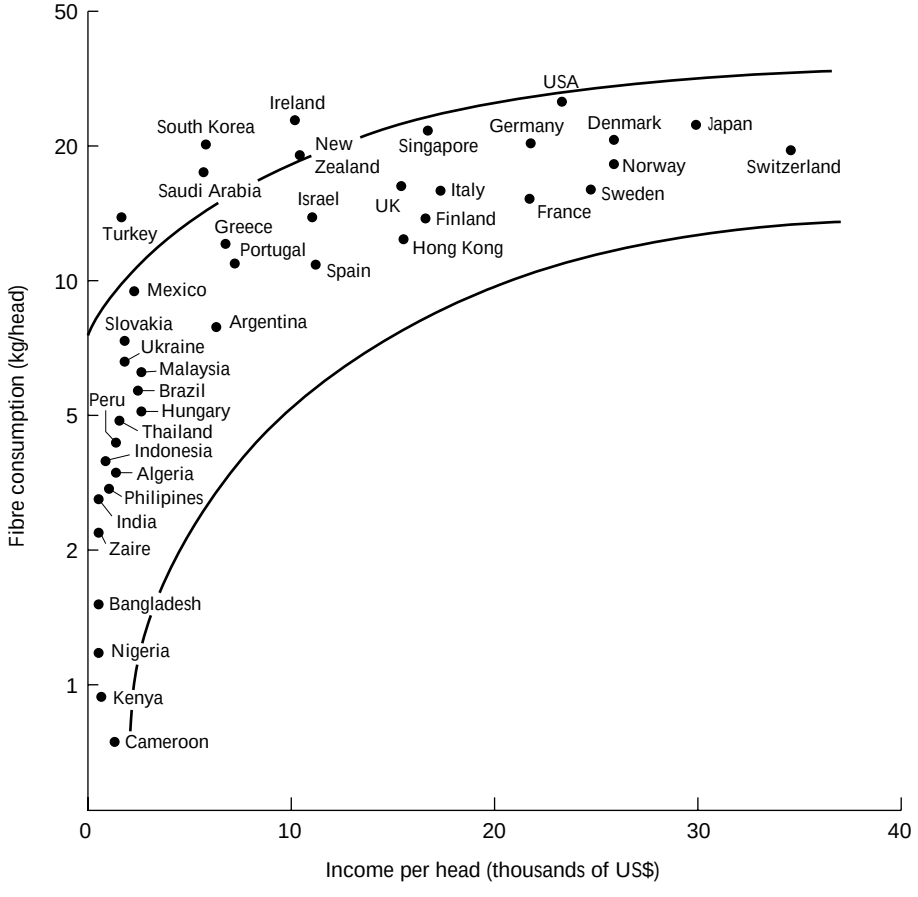

Fig. 3.2 Fibre consumption and income per head for selected countries. Reproduced with permission from *Textile Outlook International*, March 1997, p. 45.

forecast for the year 2005. The ratio between developed and developing countries has barely changed over time – standing in 1995 at 4.9 (Coker, 1997). As would be expected from the analysis of world production trends in Section B above, the developed countries have self sufficiency indices of less than 100 while the developing countries have indices over 100 and export the surplus onto world markets – see Table 3.11. Increasingly the consumer markets in the developed countries are being supplied by imports. A detailed analysis of the role of emerging markets in the future evolution of the UK clothing industry is contained in Chapter 11.

It is received wisdom that the increase in the number of countries producing apparel has led to what Dickerson (1995, p. 143) describes as 'a global over-

capacity' so that 'we can conclude that the global supply perhaps exceeds the global demand for the textile/apparel sector'.

It has been proposed in Chapter 1 that our basic approach to issues should be one of logical empiricism – quantitative evidence should be sought to support propositions. Unfortunately, there are no statistics on global apparel consumption which are cast in the same framework as that for global supply. Therefore, to a degree, this widely held assertion that global supply exceeds demand relies on other indicators, for example that apparel prices in developed markets rise very slowly (if at all); that new sources of supply are continually emerging while old centres of production are becoming more efficient, and that the opposition to quota limits (see Chapter 9) testifies to the volume of goods capable of being shifted to the major markets. This view is so widespread that, in the absence of any hard contradictory data, it will be accepted as one of the main features of the environment within which future strategies have to be developed, despite the fact that the level of proof of this assertion falls somewhat below that which would be desirable in an ideal world.

D. The resultant evolution of trade patterns

It follows that if apparel production moves to areas of low wages but consumption is highest in areas characterised by high incomes then trade must result. Trade in textiles and clothing is conducted on a vast scale. Total world trade in apparel was valued at $177 billion in 1997 (Khanna, 1999). Apparel trade dominates trade within the textile pipeline. Singleton (1997) calculated that textile and clothing products accounted for 9.3% of all world manufactured exports in 1993. Dickerson (1995) estimated that trade in apparel alone constituted, in 1992, some 5% of world trade in manufactured products. The World Trade Organisation (WTO) (1998) suggests a figure of 3.3% of all merchandise trade in 1996. Rates of growth of trade in textile and apparel products have fluctuated greatly over the last thirty years. The period of fastest growth appears to have been 1985-1990 at 18% per year (Textile Outlook International, 1999, p. 45) followed by a period of much slower growth between 1990 and 1997 (WTO, 1998).

Farnie (1997, p. 31) contends that the basis pattern of trade within the textile pipeline changed fundamentally after the mid-1950s. The main feature of this realignment was that:

'exports of clothing began to expand more rapidly than exports of textiles

proper and increased nearly seven times as fast (1958-84) as exports of textiles'.

In 1987 world exports of clothing exceeded those of textiles for the first time.

The world's leading apparel exporters are shown in Tables 3.12 and 3.13. The main feature of this table is the spectacular increase in the importance of China as an exporting nation. In 1997 a small group of Asian suppliers (China, Hong Kong, South Korea and Taiwan) were the source of 33% of world apparel exports. Nevertheless, a group of developed countries comprising Italy, USA, Germany, France and the UK were still, in 1997, responsible for some 23% of world apparel exports but took in some 58% of world apparel imports. The role of Italy is especially interesting and will be considered in more detail in Chapter 8.

Farnie (1997, p. 31) argues that Asia became the beneficiary of a 'revolution

Table 3.12 Leading apparel exporters ($ millions).

	1963	1973	1990	1995	1997
Italy	0.3	1.3	11.8	14.2	14.9
Hong Kong	0.2	1.4	15.4	21.3	23.1
France	NA	NA	4.7	5.6	5.3
Germany	0.2	0.9	7.9	7.5	7.3
UK	0.1	0.4	3.0	4.6	5.3
USA	0.1	0.3	2.6	6.7	8.7
Portugal	0.01	NA	3.5	3.8	3.3
S. Korea	NA	0.8	7.9	5.0	4.2
Taiwan	0.01	0.7	4.0	3.3	3.4
China	NA	0.2	9.7	24.0	31.8
Turkey	NA	NA	3.3	6.1	6.7
Thailand	NA	NA	2.8	5.0	3.8
Indonesia	NA	NA	1.6	3.4	2.9
Netherlands	0.1	0.4	2.2	2.8	3.7
Mexico	NA	NA	0.6	2.7	NA
Morocco	NA	NA	0.7	0.8	NA
Tunisia	NA	NA	1.1	2.3	2.3
Bangladesh	NA	NA	0.5	NA	NA
India	NA	NA	2.5	3.7	4.1

Sources: 1963 and 1973, K. Dickerson (1995), *Textiles and Apparel in the Global Economy*, Prentice Hall, New Jersey.
1995 and 1997, *WTO Annual Report 1998*; and *Textile Outlook International* (1999), World Textile and Apparel Trade and Production Trends (March 1999).

Notes: (1) NA = figure not given in the source indicated.
(2) Although precise definitions of the sector were not given in all sources the fact that the generic source was common leads to confidence in the comparability of the data.

Table 3.13 Leading apparel exports (1963–1997): percentages of world total.

Country	1963	1973	1980	1992	1993	1995	1997	Share of country's total exports 1997 (%)
Italy	15.5	10.7	11.3	7.5	8.9	8.9	8.4	6.2
Hong Kong	11.0	11.6	11.5	12.3	7.0	6.0	5.3	12.3
France	9.1	8.5	5.7	3.2	3.4	3.6	3.0	1.8
Germany	6.8	7.5	7.1	5.1	5.1	4.7	4.1	1.4
UK	5.0	3.6	4.6	2.3	2.6	2.9	3.0	1.9
USA	4.1	2.4	3.1	2.6	3.7	4.2	4.9	1.3
Portugal			1.6	2.4	3.1	2.3	1.9	2.8
S. Korea		6.1	7.3	4.2	4.6	3.1	2.4	3.1
Taiwan	0.5	5.8	6.0	2.5	2.8	2.1	1.9	2.0
China		1.6	4.0	10.2	13.9	15.2	18.0	17.4
Turkey			0.3	2.6	3.3	3.9	3.8	25.5
Thailand			0.7	2.3	3.1	2.9	2.1	6.6
Indonesia			0.2	1.9	2.6	2.1	1.6	5.4
India			1.5	1.9	2.7	2.6	2.5*	12.8
Netherlands			2.2	1.7	1.9	1.8	2.1	3.3

Sources: 1963, 1973 and 1992 as Table 3.14.
1995, Dicken, P. (1998), *Global Shift*, Paul Chapman, London.
1993, Singleton, J. (1997), *World Textile Industry*, Routledge, London.
1997, WTO as Table 3.14.
Notes: Gaps in the table indicate data was not given in the named source.
* 1996 data.

which could potentially have profited either hemisphere ... because its labour was abundant, cheap and unregulated'. In the period 1980–94 exports of clothing from Asia: 'expanded at a rate 35% faster than those from the rest of the world'. The main markets were in western developed countries and it is no coincidence that this period saw, in the UK, both the explosion of apparel consumption and a surge of imports.

The leading apparel importing nations are shown in Table 3.13. This table contains few surprises in that the major importers are, as would be anticipated from the preceding analysis, the richer, more developed countries – in particular the USA and Germany, although the latter's share of world apparel imports has fallen dramatically between 1973 and 1997. China's exports of apparel grew by 27% in one year between 1990 and 1997 (Khanna, 1999).

Most developed countries exhibit large negative trade balances in the apparel sector (i.e. imports exceed exports) as can be seen from Table 3.14. In the case of the EU these deficits are particularly large with a small group of Asian suppliers. Dickerson (1995) estimated that, in 1992, the developed countries had a combined deficit on apparel trade of $62.4 billion, whereas the developing countries had a positive balance of $61.3 billion.

Table 3.14 Leading apparel importers 1973–1997.

Rank	$ billions			Share of world apparel imports (%)		Share in country's total imports (%)
1997	1973	1990	1997	1993	1997	1997
USA	2.2	27.0	50.3	17.2	27.4	5.6
Germany	2.5	20.4	22.5	20.2	12.3	5.1
Japan	0.6	8.7	16.7	4.5	9.1	4.9
HK/China	NA	6.9	15.0	NA	8.2	7.0
UK	0.8	7.0	11.2	6.5	6.1	3.6
France	0.6	8.4	10.8	4.7	5.9	4.0
Netherlands	0.9	4.8	5.9	6.8	3.2	3.6
Italy	0.2	2.6	5.3	1.5	2.9	2.5
Bel-Lux	0.6	3.6	4.5	4.4	2.4	2.9
Switzerland	0.5	3.4	3.4	4.0	1.9	4.5
Mexico	NA	0.6	3.4	NA	1.8	3.0
Canada	0.3	2.4	3.0	2.6	1.6	1.5
Austria	0.2	2.4	2.9	1.6	1.6	4.4
Spain	NA	1.6	2.8	NA	1.5	2.3
Sweden	0.4	2.5	2.1	3.2	1.2	3.2

Source: World Trade Organisation and K. Dickerson (1995), Table 7.10, p. 225.
Notes: (1) Most of these totals were re-exported.
(2) The above 15 countries took (1997) 79.6 per cent of the world's apparel imports.

Dicken (1998) estimated that, in 1995, South Korea, Malaysia, Hong Kong and Taiwan alone had a combined surplus on apparel trade of some $198 billion. The UK runs a substantial and growing deficit on apparel trade which in 1999 reached some £4 973 087 000. The current UK trading situation is examined in detail in Chapter 5.

It is important to note that the developed countries tend to send their apparel exports to other developed countries (so-called intra-trade – see Chapter 4), while the developing countries generally direct apparel exports to the richer, developed countries. In 1992 (Dickerson, 1995) the developed countries purchased over 87% of world apparel exports, most of which (58%) came from developing areas (see Table 3.15). In 1997, according to WTO (1998, p. 127) figures, intra-Western European trade in apparel amounted to $44.2 billion while Asian trade to Western Europe amounted to only $19.4 billion (see Table 3.16). Sources of EU clothing imports are shown for 1997 in Table 3.17 which emphasises the intra-trade phenomenon.

By way of a broad generalisation, it can be stated that those countries in which apparel production represents a significant proportion of the country's economic activity tend to be countries which import relatively little apparel – as can be seen from Table 3.18.

One product of global shift will be that individually a number of the developing countries will account for a growing share of total world clothing

Table 3.15 Trade balances in apparel 1990 and 1997 (balances in $ millions).

Country	1990	1997
USA	−24,412	−41,625
UK	−3,919	−5,888
Germany	−12,529	−15,204
France	−3,710	−5,410
Italy	+9,259	+9,546
Portugal	+3,055	+2,454
Netherlands	−2,579	−2,266
Hong Kong	+8,493	+8,088
South Korea	+1,085	+1,698
Singapore	+666	−314
EU	−16,062	−31,165

Source: World Trade Organisation (1998), Annual Report.

Table 3.16 Trade flows in the apparel sector ($ billions) (destination 1992).

Origin	Developed countries	Developing countries	Total
Developed countries	44.15	6.23	51.53
Developing countries	65.97	7.71	75.30

Source: Dickerson, K. (1995), Table 7.5, p. 214.
Notes: (1) The two destinations do not sum to the total.
(2) Intra trade between the developed countries amounted to 86% of the total apparel exports.

Table 3.17 Exports of apparel by region (1997).

	Value $ billion	% Region's clothing exports	% World exports
Asia	78.9	100	44.6
to N. America	29.1	36.9	16.5
to W. Europe	19.4	24.6	11.0
to Asia	21.5	27.3	12.2
W. Europe	58.4	100	33.0
to W. Europe	44.2	75.7	25.0
to N. America	3.3	5.6	1.9
N. America	10.2	100	5.8
to Latin America	6.2	60.8	3.5
to W. Europe	0.7	6.9	0.4
to Asia	1.0	9.8	0.6

Source: World Trade Organisation (1998), Annual Report.

Table 3.18 Sources of EU apparel imports (1997).

Country of origin	% share
W. Europe	50.4
Asia	29.6
E. Europe	9.7
N. America	1.2
Main suppliers	
EU	44.6
China	8.3
Turkey	6.1
Hong Kong	5.6
Tunisia	3.1
	64.6
Other suppliers	
India	2.9
Morocco	2.8
Poland	2.5
Romania	2.1
Indonesia	2.0

Source: World Trade Organisation (1998) as Table 3.17.

exports as was seen in Table 3.12. This can be detailed for various categories of garments (UN 1996–97).

It can be seen from Table 3.19 that the Asian share of world apparel exports by category ranged from 44% to 68%. This table makes abundantly clear the increasingly important role of China in global apparel trade flows – confirming the post-1990 rise of China as an apparel producer previously alluded to above and reinforcing the need to obtain accurate data for production in that country.

E. Trade flows and employment in the developed countries

As has been seen above (Chapter 2), it is almost an article of faith that the main cause of loss of jobs in the textiles and apparel sectors in the developed countries has been the increase in imports (especially from low cost areas) experienced by these countries. As Dicken expressed it (1998, p. 204) the:

> 'popular view and, indeed the political view, as expressed through such measures as the Multi-Fibre Arrangement, is that these job losses have been caused by the wholesale geographical shift of production to cheap labour locations in the Third World'.

Table 3.19 Importance of apparel trade by country (1997).

	% of country's total merchandise exports	% of country's total merchandise imports
France	1.8	4.0
Germany	1.4	5.1
Netherlands	2.0	3.5
UK	1.9	3.6
USA	1.3	5.6
Denmark	3.2	4.7
Spain	1.1	2.3
Portugal	14.3	2.5
Italy	6.2	2.5
Mauritius	52.5	
Bangladesh	54.8	
India	12.8	
Pakistan	20.7	
China	17.4	
Hong Kong	12.3	7.0
Singapore	1.2	
Thailand	6.6	
Malaysia	3.0	
Macau	79.1	5.1
S. Korea	3.1	1.0
Sri Lanka	45.9	
Taiwan	2.8	
Tunisia	2.0	6.2
Morocco	16.4	
EU	2.3	3.9

Source: TOI (1999) *World Textile and Apparel Trade and Production Trends, March 1999.*

Table 3.20 Shares of world exports in 1986 and 1995 (in value terms as a percentage).

Category of apparel	1986				1995			
	USA	Europe	Asia	China	USA	Europe	Asia	China
842	1.6	57.0	31.0	—	4.7	31.9	47.2	18.4
843	—	57.3	38.0	—	—	33.5	51.8	15.6
844	2.0	25.0	63.1	—	6.2	20.1	63.3	16.5
845	—	57.2	38.3	—	—	34.1	54.3	11.7
846	3.1	54.2	37.1	—	7.0	30.0	50.4	11.9
847	2.0	62.1	30.5	—	5.3	45.3	44.8	12.1
848	3.3	46.8	42.0	—	4.2	21.1	68.0	22.1

Source: United Nations (1966/67), *International Trade Statistics Year Book Vol 2*, UN, New York.

Key: 842 Men's outerwear (not knitted).
843 Women's outerwear (not knitted).
844 Under garments (not knitted).
845 Outerwear (not elastic).
846 Undergarments (knitted).
847 Textile clothing accessories.
848 Head gear.

There is an extensive literature detailing the results of research studies investigating that assertion. It is something of a paradox that the results of the vast majority of these studies do *not* confirm the alleged relationship between imports and job loss. This research will now be reviewed in line with the research philosophy outlined in Chapter 1. The results of some of the major research investigations are summarised in Fig. 3.3. The so-called accounting procedure upon which these studies are based is summarised in Gibbs (1982) and Singleton (1991).

One of the best known of such studies is that conducted by Cline (1987) for the USA between 1962 and 1985. As Dicken (1998, p. 264) comments, a reading of these results leads to the conclusion that 'the effect of imports on employment change in textiles has been negligible compared with the effect of productivity growth'. Interestingly, from the point of view of the present text, the picture in clothing was far less clear cut. As can be seen from Fig. 3.3, during the period 1982–85, for example, the role of productivity change and trade was virtually identical.

In a similar study, Cable (1977) had produced data for the period 1970–75 in the UK, which indicated that in textiles (cotton fabrics) 4700 jobs were lost due to productivity change as against 8400 due to import penetration (of which 2225 were lost due to low cost competition). In the clothing sector the figures were 81 900 due to productivity increases, 30 800 due to import penetration and only 19 450 due to low cost competition. Silberston (1984) also found that between 1970–75, in the UK, the main cause of job loss in the cotton and man-made fibres sectors of the pipeline were productivity increases responsible for 10 898 and rising imports which accounted for 16 853 jobs lost. In a later study of the UK, Cable (1982) covered the period 1970-78. His conclusion was that 121 000 jobs were lost because of increased productivity against only 50 900 due to increased imports. Gibbs (1982), studying the apparel industry in Manchester over the period 1966–75, likewise found that increases in productivity were responsible for almost twice as many job losses as was import competition and, furthermore, of those jobs lost which could be attributed to imports, only half could be blamed on imports from low cost areas. Therefore, UK studies were much more consistent in their findings that productivity changes were the main cause of job loss.

Singleton (1997, p. 124) argues that the period 1950–1970 needs to be split into three distinct periods and that (taking spinning and weaving together) the main factor accounting for decline in the period 1950–1955 was export failure. Loss due to imports is described as slight. In the second period, 1955–1960, rising imports became 'the major element in employment decline' but even then the loss due to rising imports was only marginally greater than that due to rising productivity.

		Productivity	Imports	Exports	Demand
UK 1970–78[1]	T	−121,000	−50,900	—	+34,700
UK 1970–75[2]	C	−81,900	−30,800	—	+54,600
UK (Manchester) 1966–75[3]	C	−13,020	−8,497	—	—
UK 1970–75[4]	T	−10,898	−16,853	—	—
UK 1970–75[5]	C	−118,500	−52,500	—	+105,000
UK 1970–75[6]	C	−23.7%	−9.5%	—	+20.6%
UK 1970–75[7]	T^S	−17,213	−11,749	−26,658	−13,882
	T^W	−15,865	−13,329	−35,296	−24,569
	T	−463,400	−141,800	—	—
Germany 1962–75[8]	C	−160,000	−144,600	—	—
Germany 1980–89[5]	C	−39,800	−39,000	—	+7,500
W. Germany 1970–76[6]	C	−19%	−7.8%	—	+0.5%
Spain 1980–89[5]	C	−19,300	−14,400	—	+2,800
Netherlands 1980–89[6]	C	−3,500	−2,200	—	+800
Netherlands 1970–76[6]	C	−37.0	−38.3	—	+17.6
Italy 1980–89[5]	C	−18,400	+13,100	—	+5,100
Italy 1970–76[6]	C	−18.7%	+10.9%	—	+7.3%
France 1980–89[5]	C	−45,000	−22,300	—	+6,700
France 1970–76[6]	C	−18.7%	−2.2%	—	+8.0%
Belgium 1980–89[5]	C	+4,100	−7,300	—	−2,500
Belgium 1970–76[6]		−33.2%	−15.1%	—	+38.6%
USA[9] (in % terms)					
1962–67	T	−7.3	−0.4	+0.2	+9.1
1967–72	T	−3.9	−0.3	+0.1	+4.1
1972–77	T	−3.2	+0.2	+0.3	+1.4
1977–82	T	−2.7	−0.2	−0.1	−0.6
1982–85	T	−4.3	−0.7	−0.5	+3.3
1962–67	C	−2.1	−0.3	+0.04	+4.5
1967–72	C	−1.0	−0.6	+0.03	+1.6
1972–77	C	−3.1	−1.0	+0.02	+3.3
1977–82	C	−2.2	−1.0	+0.2	+1.9
1982–85	C	−3.8	−3.3	−0.4	+6.0

Sources: (1) Cable, V. (1982).
(2) Cable, V. (1977).
(3) Gibbs, D. (1982).
(4) Silberston, A. (1984), The MFA and the UK Economy, HMSO, London.
(5) Balasubramanyan, V. & Salisu, M. (1993).
(6) Arpan, J. & De La Torre, J. (1982) The US Apparel Industry, Georgia State University, Atlanta.
(7) Singleton, J. (1991).
(8) Keesing, D.B. & Wolf, M. (1980).
(9) Cline, W. (1987), The Future of World Trade in Textiles and Apparel, Institute for International Economics, Washington.

Note: T = textile studies; C = clothing studies.

Fig. 3.3 Job loss studies – a summary.

Finally, during the 1960s, 'declining domestic demand for cloth and yarn took over as the primary contributory factor to the reduction in employment'. In relation to the primary textile sector, therefore, Singleton's conclusion, for the UK, was that:

> 'competition from the less developed countries was at its most devastating during the 1950s. During the 1960s and 1970s shifts in home demand . . . and productivity tended to be more important determinants of changes in employment in the cotton industry'.

Keesing (1980), reviewing evidence from the West German textile and clothing sectors between 1962 and 1975, concluded that just over three times as many jobs were lost in textiles due to rising productivity than were lost due to rising imports. In the clothing sector, however, the ratio was only just over one, i.e. the two factors were responsible for almost exactly the same volume of job losses but, as in the American case, the picture was less clear cut in clothing than in textiles.

Two more up to date studies of the UK have confirmed the emphasis placed on the role of productivity changes. Balasubramanyan (1993, p. 46) concluded that while both import penetration and productivity growth had led to substantial job losses, the growth 'in labour productivity . . . appears to have been the major factor in loss of jobs' between 1980 and 1989. Hine (1998, p. 1507), in a study of the period 1979–92 when nearly three million jobs were lost in the manufacturing sector, determined that 'the dominant factor has been productivity growth. Trade is seen as having only a minor role' while changes in efficiency resulting from increased penetration were seen as accounting for only 6.4% of the reduction in employment between 1981 and 1991 – although it was conceded (1998, p. 1510) that 'increased import penetration has stimulated an important defensive response'.

How can the results of this body of research be summed up? In relation to the apparel sector the picture is far less clear cut than it appears to be in the primary textile sector. For example, in Cline's study for 1982–85 and in Walter's study for 1962–75 the two factors – productivity increases and rising imports – received almost equal weighting. Singleton, likewise, in the case of the primary textile sector, did not consistently rule out the role of import competition.

In Cable's research period productivity in the apparel sector did rise by some twenty points (at a rate slightly above the average – see Table 2.6 in Chapter 2) but in the same period, imports rose by a factor of six. In Balasubramanyan's later research period (1980–89) productivity did rise very rapidly in the early 1980s and by nearly thirty points over the whole period during which the rise in imports was roughly 300%.

This body of research has been reviewed in some detail because it bears so heavily on the conclusion that rising imports were the main cause of the industry's problems. However, it has now to be noted that the research technique used to produce these results (the so-called accounting or components of change technique) is seriously if not fatally flawed in that it assumes that the

various factors which produce the observed change in employment are *totally unconnected*. This seems barely credible; it is difficult to believe that the impetus to the increase in productivity recorded in the UK apparel industry in the 1980s was not driven by the perceived need to compete with overseas competition. In addition, to the extent that import competition promotes low prices, this in turn could be expected to increase domestic demand. The problems with this research device have been summarised by Martin (1981) who concluded his examination of the accounting technique with the statement that it would 'attribute those employment losses only to the approximate cause, the rise in productivity growth, without recognising the causal influence of import competition' in promoting advances in productivity. Wragg (1978) also found that: 'industries take notice of potential competition and attempt to improve their performance'.

There is, at least, one alternative approach to this issue which has been pioneered by Choi (1985). This involves seeking associations between imports, consumption and production of apparel in particular countries. In a study of the USA (1978–82) it was found that for only three (out of 72) apparel categories did rising imports exceed the fall in production. In the case of the EEC (1978–81) there were nine cases of Multi Fibre Arrangement (MFA) supplies and production falling together; five cases in which MFA supplies rose; and three in which both imports and production fell together.

Choi (1985, p. 39), therefore, concluded that on the basis of this evidence:

> 'with a few exceptions, domestic production not only did not decline, but rose steadily faster from 1979–1981, even during periods when consumption and/or MFA developing country imports declined'.

Jones (1988a) studied the relationship between apparel imports, production and consumption in the UK between 1975 and 1985. This study was able to find virtually no evidence of an inverse relationship between levels of production and imports – except in the case of men's and boys woven suits. The most normal scenario was for both production and imports to have increased together. This conclusion also held for a study of MFA imports between 1980 and 1985. Jones (1988b) carried out further research on MFA products only for the period 1984-1987. The initial conclusion, using unlagged relationships, was that there was 'very little support for the argument that increases in imports are directly associated with decreases in production': out of 29 apparel categories studied, only nine displayed a negative relationship between imports and production (babies knitted undergarments; other knitted undergarments; woven shirts; knitted trousers; dresses; men's woven jackets; women's woven dressing gowns; skirts and men's woven suits). However, the introduction of time-lagged relationships (production being lagged on imports by one, two, three and four quarters to allow for imports to replace domestic production)

did substantially alter the results in that (Jones, 1988b, p. 9) the total number of categories displaying a negative correlation between imports and production rose (from nine) to fifteen (or to 52% of the cases studied). In addition, the lagged data produced some spectacular reversals of the findings – especially in the case of jerseys, scarves and nightwear.

Martin (1981, p. 163) had concluded that it was important that studies of the causes of job loss should take account of the lagged effect of imports in production. To further complicate the issue it has to be noted that this period was one of both rapidly rising domestic consumption and of increasing rates of import penetration.

It is extremely difficult to produce a succinct and uncomplicated statement which captures the results of this body of research. The accounting procedure studies summarised in Figure 3.3 have to be studied given the importance they have assumed in the literature – in particular they have frequently been utilised in a political context to argue that trade restrictions are not needed given that imports cannot be shown to have been responsible for job losses.

As has been seen above, even this statement is only partially true in the case of apparel – as opposed to textiles. However, as has been suggested above, the present author believes the technique of analysis is so flawed that the results are unreliable – in which case it does not make much sense to rely on any of it! It is clearly quite feasible for rising imports to be associated with both rising consumption and increases in domestic production – provided the increase in consumption is sufficiently big to absorb the rising imports.

In the case of the UK, however, the increase in imports (in current prices) in most periods since 1975 has been extremely rapid. For example, over 120% between 1975 and 1980; over 215% between 1980 and 1990 (Jones, 1992). In the period 1985–1990 which was one of very rapid growth in consumption (by UK standards), the consumption of apparel in the UK rose by 60% in current terms or 26% in real terms. Over the same period imports rose by 97%. In the period 1980–90, apparel consumption rose by 153% in current price terms or 41% in real terms, but imports rose by 217%!

Additionally (see Chapter 5) import penetration rates have been rising remorselessly. In view of these facts and the results of the correlation studies reported above (Jones, 1988a) the only conclusion which appears tenable is that the impact of rising imports on the size of the apparel industry in the UK has been a negative one. It is probably not insignificant that the negative associations between imports and domestic production which were beginning to appear from the lagged data in the period 1984–87 were followed by falling output levels in the UK in the late 1980s and early 1990s (see Table 2.1).

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Chapter 4

The Role of Labour Costs and Theories of Development

A. Labour costs in apparel production

(i) The labour intensive nature of production

The single most defining and unique feature of apparel production is its enduring labour intensity. The decreasing labour intensity of the manufacturing sector as a whole has long been recognised in the literature. Tulder and June (1988), for example, pointed out that, as a result of automation and subcontracting, the capital intensity of business has tended to steadily increase and the labour content to steadily fall.

Ohmae (1985, p. 4) stated that:

> 'within the past decades, automation, robots, machine centres and numerical controls have increased productivity significantly in the broadest sense... Translated into quantitative terms, the labour cost context of traditional assembly operations has dropped from 25% to somewhere between 10% and 5% of the total cost of production'.

This has not happened in the case of apparel manufacture. In terms of the stages within the apparel manufacturing cell of Fig. 1.1 it can be concluded that innovations have largely been restricted to the pre-assembly stage, e.g. applications of microelectronic technology in pattern grading and marker making. According to Hoffman and Rush (1988) these advances reduced the grading process from four days to one hour and achieved considerable material savings at the cutting stage.

Singleton (1997, p. 85), for example, recognised that:

> 'the design and preparatory processes in the clothing industry are amenable to the use of computer technology'

which confirmed the view of Taplin (1997, p. 2) that the application of new technology:

> 'has mainly been directed at the design and cutting stages, transported garments between machines, the overall monitoring and control of production operations and ad hoc modifications to existing machinery'

while:

> 'make up or garment assembly has not been appropriate for the extensive application of new technology ...'

This is not to say that there have been no advances in sewing technology. Zeitlin (1988) identifies three lines of innovation: (a) increased stitching speeds; (b) developments of work aids; and (c) the emergence of automatic machines dedicated to special tasks, such as button holing.

In addition, as is noted in Chapter 7, a number of research programmes have been carried out into the potential for increased automation of garment assembly. Nevertheless, in spite of these efforts – and it has been noted that apparel production is not regarded as a knowledge-based sector which spends heavily on research – there is no sign of a revolutionary breakthrough which shows any realistic prospect of achieving such widespread commercial acceptance and adoption as to lead to a dramatic decrease in the labour content in apparel assembly.

The main reasons for this state of affairs are, first, technical ones relating to the problems of automating processes utilising limp fabric and, secondly, economic in that plentiful supplies of cheap labour have been and continue to be available. Zhou (1997) concluded that 'a revolution in the sewing room which would lead to a dramatic decrease in direct labour content in apparel assembly is still awaited'.

A good illustration of the problems would be the extensive research programme funded by MITI in Japan which set the ambitious target (Singleton, 1997, p. 180) of creating 'a flexible automated system capable of producing two thousand garments for a short production series' to be achieved over a nine year period with a budget of some thirteen billion yen. The results of the programme were unveiled in 1991, and, according to Singleton (1997, p. 181), although complete automation has not been achieved 'the majority of technical operations, such as picking up and moving fabric ... have already been achieved'.

However, widespread commercial application of the results of this research has not taken place. Anson (1997, p. 3) felt that it was reasonable to conclude even at that late date that while a number of:

> 'islands of automation reduce the amount of labour needed for certain tasks without compromising flexibility ... the goal of true automation in garment manufacture appears to be as far away as ever'.

Therefore, it remains the case that labour cost differentials between countries remain the major factor which explains the gaining of market share by low cost imports at the expense of apparel producers in the developed countries. The overall impact of the technological developments which have taken place at the assembly stage have been insufficient to wipe out the advantage of very low labour costs.

The fact that the percentage of total costs accounted for by labour charges has remained stubbornly high in apparel production can be confirmed by reference to many sources over the years, e.g. in 1971 the National Economic Development Office (NEDO, 1971) estimated the direct labour charge to be 20.5% of total costs. Khanna (1998) quotes 30% while Hoffman (1988) gave a figure between 20–40%. Therefore, it is logical to argue that so long as this remains the case, manufacturers will continue to seek out low labour cost locations. This has been confirmed, for example, by Scheffer (1994) who reported that for 75% of a sample of 165 apparel manufacturers in Europe, the most important factor in utilising foreign sources of production was the labour cost gap between countries. It is true that labour cost is not the *only* factor involved in the decision as to where to produce, but it is a crucial factor which cannot be over-stressed. The diamond framework outlined in Chapter 2, it will be recalled, had four major elements – the influence of labour cost enters via the element labelled 'Factor Conditions'.

Singleton (1997, p. 33) in his ambitious application of the Porter Model concluded that it was unlikely that other dimensions of the factor conditions element such as excellent management or improvements in the quality of labour, could ever 'offset the low wages enjoyed by developing countries'. Therefore, while recognising that the sourcing decision is a more complex question than simply locating the lowest figure in a table of labour cost statistics, the conclusion drawn by Scheffer (1994, p. 112) that the main driving force behind sourcing decisions is the differential cost of labour between countries can be accepted as a working hypothesis.

(ii) The extent of labour cost variation

This labour cost differential is both substantial and enduring. As Taplin (1997, p. 11) concludes:

> 'the magnitude of the labour cost gap ... between the high wage and low wage economies is so great that even taking other costs into account, clothing manufacturing costs in the UK ... are 200% higher than in China'.

The most frequently encountered sources of data on labour and manufacturing costs by country are those produced either by Werner International or by Kurt Salmon Associates (KSA). Werner International has analysed international

labour costs in textiles and apparel since 1968. Their cost comparisons for the primary textile sector (spinning and weaving) first appeared in 1968 and covered twelve countries. By the 1990s statistics covering almost 60 countries were available.

Figures for the apparel sector appear much less frequently and are usually accompanied by a note warning that the figures are (for reasons not specified) less reliable than those for the primary textile sector. Table 4.1 reproduces these figures with the UK ratio reworked by the present author. The two main features of the table are the absolute size of the gap and its enduring nature. It is intuitively unlikely that, in a labour intensive industry, superior productivity or management could overcome the labour cost disadvantage incurred when, for example, costs in China are 3% of the UK figure.

As has been indicated (and as will be discussed in Chapter 8) labour costs are not the only factor involved in sourcing decisions, nor can it be assumed that there will necessarily be a very close correlation between changes in national labour costs and the relative importance of those countries as suppliers.

Taplin (1997, p. 34), for example, pointed out that:

> 'in 1991, Hong Kong has the largest share of UK imports and, while labour costs are lower than in the UK, it was far from the cheapest of the Far East suppliers.... When imports began to increase from the 1970s it is noticeable that the greatest increase was from the other EU member states and a significant volume of high quality garments continue to derive from within the EU'.

Calculations by the present author for the period 1990–1996 (using the cost data in Table 4.1 and the trade data taken from Table 5.2 and the *Hollings Apparel Industry Review* [1992]) revealed a very mixed picture. In the cases of China, India and South Korea changes in UK imports from those sources were in line with changes in labour costs but in other cases, especially Poland and Taiwan, they were not.

In view of the doubts expressed about the reliability of the figures for the apparel sector, Zhou (1995) approached the issue from a different direction using International Labour Office data for major industrial groups. The original cost data was standardised both for changes over time in working hours and for exchange rate fluctuations. The final results of the extensive series of calculations required to produce a meaningful comparative figure by country are shown in Table 4.2. Although the absolute levels of these figures vary greatly from the Werner figures the conclusions to be drawn from them do not substantially alter the implications for sourcing practice in that, first, a very large labour cost gap is confirmed; secondly, the gap was persistent over time and, finally, relative country positions remained reasonably stable.

Calculations by the present author utilising earlier Werner data as a com-

Table 4.1 Labour cost comparisons – apparel industry.

Country	Total costs per hour (US$)			
	1996	1990	1996/90 (%)	Index 1996 UK = 100
Belgium	20.92	12.92	62	225
Denmark	21.38	15.93	34	230
Germany	20.35	7.23	181	219
Greece	7.19	4.33	66	77
Spain	7.78	7.08	10	84
France	16.33	12.52	30	176
Ireland	10.00	7.50	33	108
Italy	13.68	12.50	9	147
Netherlands	18.93	14.71	29	204
Austria	18.22	9.96	83	196
Portugal	3.85	2.30	67	41
Finland	14.71	14.16	4	156
Sweden	15.93	17.78	−10	172
UK	9.28	8.02	16	100
USA	9.62	6.56	47	104
Canada	10.07	8.76	15	109
Japan	20.95	6.34	230	226
Switzerland	22.42	14.19	58	242
Poland	1.42	0.50	184	15
Hungary	1.68	0.92	83	18
Czech Republic	1.55	2.79	−44	17
Romania	1.08	1.73	−38	12
Turkey	1.52	1.35	13	16
Morocco	1.22	0.92	33	13
Tunisia	1.76	1.46	21	19
Egypt	0.51	0.34	50	5
Israel	5.61	5.17	9	60
China	0.25	0.26	−4	3
India	0.29	0.33	−12	3
Indonesia	0.33	0.16	106	4
South Korea	3.29	2.46	34	35
Pakistan	0.29	0.24	21	3
Taiwan	5.18	3.41	52	56
Vietnam	0.29	NA		3
Argentina	2.39	1.07	123	26
Brazil	0.99	0.98	1	11
Peru	1.34	0.86	56	14

Source: Original data from Werner International, but based on Table 16 in OETH (1997).
The EU Textile and Clothing Sector, OETH, Brussels.

Notes: (1) Index calculation by the present author.
(2) The original table came with a warning that the data was not (for unspecified reasons) of the same quality as data more normally given for the primary textile sector.

Table 4.2 Labour cost comparisons based on ILO data (US$ per hour).

Country	1981	1989
Netherlands	4.81	7.43
West Germany	4.62	7.86
Belgium	4.60	6.82
France	3.53	5.96 (1987)
UK	2.94 (1983)	4.98
Portugal	1.10	1.60 (1987)
Hong Kong	1.03	2.24

Source: Zhou, Q. (1997) unpublished PhD dissertation and Zhou, G. (1995) 'Calculation of Labour Cost Variations', *Journal of Clothing Technology and Management*, 12.3, pp. 35–59.

parison with the Zhou data revealed that the absolute gap in dollars per hour between, for example, the UK and Hong Kong (in 1990) was +70% using the Werner data and +55% using Zhou's data. During the period 1984–1990 the UK rate rose 60% according to Werner data and by 68% according to Zhou's data. Finally, between 1984 and 1989 the gap between Hong Kong and the UK rose by 4% according to the Werner data but by 33% according to Zhou's data. Apart from the last dimension, the two sets of data produced a rather similar picture of the labour cost gap between high and low wage nations.

Finally, in this section Kurt Salmon Associates (KSA) data on costs by country in terms of total production costs per standard allowed minute of work time is examined. These figures take into account not only average labour costs but also productivity differences and overheads (KSA, 1999). The figures do not allow for transport or quota cost variations between locations. The data is given in Table 4.3. It can be noted that there is a very close correlation between the Werner wage data and the KSA standard minute data, e.g. a comparison of 24 countries for which both sets of figures were available revealed a correlation

Table 4.3 Production costs by country.

Country	Average hourly wages ($)	Social costs (%)	Productivity (%)	Costs per standard minute ($)
Bangladesh	0.17	20	40	0.110
Belarus	0.45	65	70	0.105
Bulgaria	0.70	50	70	0.113
Cambodia	0.17	20	50	0.093
China	0.37	25	60	0.098
Costa Rica	1.65	80	80	0.153
Croatia	1.85	40	75	0.158
Czech Republic	1.50	50	75	0.150

Continued

Table 4.3 *Continued.*

Country	Average hourly wages ($)	Social costs (%)	Productivity (%)	Costs per standard minute ($)
Dominican Republic	1.15	41	70	0.128
Egypt	0.45	15	60	0.093
El Salvador	1.05	72	70	0.130
Estonia	1.30	45	75	0.140
France	8.10	55	100	0.326
Germany	10.75	70	100	0.444
Greece	3.55	54	80	0.221
Guatemala	0.65	93	70	0.115
Honduras	0.73	85	70	0.114
Hong Kong	5.15	20	90	0.219
Hungary	1.35	60	80	0.144
India	0.25	25	50	0.095
Indonesia	0.15	25	50	0.097
Irish Republic	5.30	42	95	0.242
Israel	4.10	52	85	0.234
Italy	6.60	100	95	0.361
Jamaica	1.00	55	75	0.124
S. Korea	3.45	15	85	0.169
Latvia	1.10	40	75	0.120
Lithuania	1.25	45	75	0.133
Madagascar	0.17	20	45	0.105
Malaysia	1.15	20	65	0.127
Malta	4.05	25	90	0.197
Mauritius	0.85	30	70	0.108
Mexico	0.85	80	70	0.112
Moldovo	0.30	45	65	0.096
Morocco	0.90	19	70	0.117
Nicaragua	0.62	75	65	0.114
Pakistan	0.47	60	50	0.129
Philippines	0.50	25	65	0.099
Poland	1.85	60	80	0.159
Portugal	3.15	30	85	0.165
Romania	0.64	45	70	0.111
Russia	0.50	50	70	0.106
Slovakia	0.95	50	70	0.129
Slovenia	3.45	58	85	0.209
Spain	4.45	33	90	0.222
Sri Lanka	0.40	35	65	0.098
Taiwan	4.25	25	85	0.203
Thailand	0.60	15	65	0.098
Tunisia	1.13	25	70	0.123
Turkey	1.25	55	75	0.146
Ukraine	0.43	61	70	0.102
UK	6.65	38	100	0.269
USA	8.00	40	100	0.284
Uzbekistan	0.37	50	70	0.098
Vietnam	0.35	25	65	0.094

Source: Kurt Salmon Associates (1999), *Sorting Your Sourcing*.

Note: Adding the social cost percentages to the hourly wages produces figures closely compatible to the Werner data.

coefficient of +0.9765. Therefore it can be argued that simple wage cost data does give a reasonably good guide to production cost variations between locations.

B. UK labour costs and minimum wage legislation

The last traces of control over minimum wages in the UK apparel sector were removed in 1993 when the TU Reform and Employment Rights Act abolished the old Wages Councils (Taplin, 1997). However, following the election of the new Labour Government in 1997 a legally binding minimum wage was introduced in 1999 at the rate of £3.60 per hour for workers aged over twenty-one.

Wilson (1998, p. 257) estimated that the hourly rate in apparel manufacture in the UK before this date was £3.20. The most common form of payment system for machinists is a piece rate system so that this estimate was based on the existing 'fall back' wage of £125 per week for a 39 hour week. Many commentators argued that the new legislation would destroy jobs by forcing firms to close or by encouraging a move offshore. In line with the research philosophy outlined in Chapter 1, it would be sensible to examine the evidence on the impact of minimum wage legislation. Orthodox economic theory predicts that the introduction of a legally enforceable wage above the market rate destroys jobs. Until the early 1980s the majority of studies did support a small but negative impact upon employment. However, more recent studies reached the opposite conclusion. A typical conclusion from this newer work is represented by Machin (1996), who wrote that 'our reading of the recent evidence is quite clear: the employment effects of minimum wages is rather minimal'.

Freeman (1994) concluded that 'if your previous view was that moderate increases in the (USA) minimum wage risk huge job losses, the new evidence should move you to a major re-think'. Similarly, a recent review of European evidence by Doladao (1996) concluded that the effects of minimum wages are exaggerated.

The best known piece of American research is that by Card (1995) in which he examined data from New Jersey and Texan fast food restaurants. He found little or no evidence of the minimum wage affecting employment or an effect caused by rises in the minimum wage. The reaction in America to this research has been extreme, with the debate over the validity of the finding being conducted in the most inflammatory and vitriolic language which, in effect, argues that if the data does not support the laws of supply and demand, it would be best to stop collecting data because it must be wrong.

There have been a number of studies in the UK which have concentrated

upon the impact of the Wages Council minimum. The majority of these studies also find little job destruction following from the fixing of minimum wage levels – and no evidence of job creation following their removal. Bell (1996) concluded that there was little evidence 'in support of the conclusion that the system of Wage Boards and Councils supported wages that were higher than in non-covered jobs' so that it would be logical to expect that if 'there are small wage effects then it is not surprising that there are small employment effects'.

A large exercise in model building carried out by Dickens (1994) studied twelve wages councils and concluded that a 'simple consideration of the raw data lends no support whatsoever' to the view that Wages Councils (setting minimum wages) had been bad for employment.

In another study Machin (1994) again concluded that

> 'consistent with the conclusions of several recent US studies, the findings suggest that the minimum wage had either no effect or a positive effect on employment'.

One UK study which reaches the opposite conclusion was published by Kauffman (1989) and concluded that:

> 'increases in the SMR definitely reduce the employment of women but have counteracting effects of the employment of men. Nevertheless, total employment falls in all cases'.

It was estimated that a 10% rise in minimum wage reduced employment by 0.6%. Despite this, there is no doubt that the weight of evidence both in the UK and USA is that the introduction of or the raising of minimum wages cannot be shown to have destroyed jobs.

On balance, therefore, and maybe somewhat surprisingly, the conclusion must be that the consequences for employment in the UK clothing manufacturing sector of the introduction of a minimum wage would be unlikely, on the evidence, to be severe, unless the wage was set at a level astronomically above the current level. One proviso might be that much of the evidence relates to sectors not open to import competition or to sectors in which offshore production is a real option.

The initial reaction within the UK apparel industry was hostile, but Jones (1992) found that the reaction of a small sample of firms contacted through a telephone survey was not hostile to the concept or to the £3.60 rate and concluded that 'the rate announcement would not be expected *of itself* to produce instant disaster of earth shattering proportions'.

It is difficult to disentangle the impact of this legislation from that of other events taking place within the sector, such as the removal of the MFA and the decisions of major retailers to source more goods offshore, but given that the

gap between the wages paid in the lowest cost sources and those prevailing in the UK prior to April 1999 were so vast, it seemed unlikely at that point that the relatively small increase introduced by the legislation would have much effect on the size of that gap (see Table 4.1) unless the minimum wage is either continuously upgraded or hiked up to a level significantly above the present level. By 2002, however, continuing research with the reference group revealed that confidence in the future had totally evaporated and a significant number of the respondents felt the legal minimum was now a major threat (Jones, 2002). It should also be noted that in the UK, relative to other developed countries, so-called non-wage labour costs (such as social charges) are rather low. Bush (2000) estimated that in the UK they amounted to some 33 per cent as against 50 per cent in France and Germany.

A more recent study by De Fraja (1999, p. 483) while confirming the 'limited effects of minimum wage on employment' did also identify 'a spill-over effect, by which workers whose wage is above the new minima experience wage increase when the wage floor is raised'.

In conclusion, therefore, while recognising that other factors than simple labour costs will be important in the sourcing decision, the assertion by Taplin (1997) that because 'clothing is a labour intensive industry, especially in the assembly stage, labour cost comparisons are often made in order to assess overseas sourcing options' and that the vast labour cost gaps identified above largely 'explain why retailers and manufacturers have invested in sourcing abroad' can be accepted as representing an essential truth about apparel production. It is the main theme of this text that this argument has now, in the UK, finally been settled in favour of offshore production.

C. Labour costs, global shift and theories of development

It could be objected, at this point, that placing so strong a focus on the role of labour costs in explaining the geographical dispersion of the clothing industry is, in effect, implicitly recognising the validity of theories such as absolute or comparative advantage which have been severely questioned by empirical studies. It might even be argued that a Marxist labour theory of value is being evoked.

While it is not possible to provide a comprehensive review of theories of trade and economic development in the context of this text it is important that this issue be addressed because there is a clear link between the labour intensive nature of the apparel industry and the process of global shift. Theoretical models of development and of trade flows can, in the present context, be taken as synonymous given that trade flows can only originate from areas which have developed in certain directions.

As has been noted in Chapter 2, there has been a global shift of apparel production towards the low labour cost countries. The role and significance of

the apparel sector in the economies of these developing countries is significant. Figures produced by Dickerson (1995, p. 216) indicated that, in 1992, textiles and apparel exports combined accounted for 67% of total exports from Bangladesh; 30% in the case of China and India; 77% in the case of Macao and 69% for Pakistan; 40% in the case of Turkey and 55% in the case of Sri Lanka. The comparable figure for the USA was 2.2%. Singleton (1997) estimated that the comparable figure for the UK and the Netherlands (in 1993) was just under 2%.

Table 4.4 The contribution of apparel to exports (%).

Country	Apparel category	%
Bangladesh	844	19.6
Hong Kong	845	11.1
Turkey	845	8.8
Turkey	846	5.7
Tunisia	842	19.3
Bangladesh	842	11.5
Sri Lanka	843	17.5
Tunisia	843	10.1

Source: *UN Handbook of International Trade Statistics* (1996/97)

Key: 842 Men's outerwear.
843 Women's outerwear.
844 Underwear.
845 Outerwear knitted.
846 Underwear knitted.

Table 4.4 shows (for 1994/95) the percentage of total exports of the named countries accounted for by various apparel categories.

Apparel exports are, as would be expected, frequently an important contributor to the export effort of the developing countries as was seen in Table 4.4. Particularly outstanding are the role of men's outerwear in Tunisia and Bangladesh; the contribution made by women's outerwear in Sri Lanka and the position of underwear in the exports of Bangladesh.

Singleton (1997) has computed the so-called 'Revealed Competitive Advantage' (RCA) in apparel and textiles. This is defined as the share of apparel in the total exports of a country divided by apparel's share of the total exports of all products by all countries in the study. The 'best' countries had a RCA of +2 and included Morocco, Pakistan, the Philippines, Hong Kong, Columbia, Cyprus, Greece, India, Indonesia, South Korea, Thailand, Turkey and Uruguay. The 'worst' countries included the USA, UK, Germany, France, Canada, Japan, Sweden, Switzerland, Belgium, Norway, Australia, New Zealand, the Netherlands, Finland, Austria and Denmark – mainly high wage areas. It is interesting to note that Italy and Portugal appeared in the 'best' group with RCAs of +2. The position of these two EU members is unusual in

that their experience frequently runs counter to that of the other members of the EU. Potential lessons for the UK will be considered in Chapter 7, but it must be remembered that the concept of RCA indicates where products are best assembled or produced and that this is not the same concept as that employed by Porter when indicating which countries provide the best platform from which internationally competitive companies might best evolve.

A brief review of the theoretical models which have been advanced as explanations of the development process has been provided by Dickerson (1995), while a much more exhaustive report has been compiled by Perdikis (1998). There is no shortage of competing models. An acceptable list would include:

(1) Ricardo's (1817) theory of comparative advantage (Ricardo, 1973).
(2) Smith's (1776) theory of absolute advantage (Smith, 1976).
(3) Ohlin's (1933) factor proportions model.
(4) Vernon's (1966) international product life cycle model (Vernon, 1979).
(5) Theories of development such as that advanced by Rostow (1960).
(6) Technological theories such as those developed by Posner (1961).
(7) The new international division of labour model developed by Frobel (1980).
(8) Dunning's (1988) 'eclectic' model.
(9) Theories of corporate internationalisation such as that propounded by Rugman (1980).
(10) Porter's (1998) 'Diamond Framework'.

The first three models on the list are the oldest and were derived from classical economic theory and are, in essence, dependent upon various views of factor endowment. Variations of these models are normally used to demonstrate the advantages of free over restricted trade – see Fig. 7.4. The main opposition to these classical models emerged after empirical studies revealed that trade patterns frequently did not accord with factor endowment in that capital rich countries, for example, imported capital intensive products. This is the so-called Leontief (1954) Paradox. In addition, the increasing importance of so-called 'intra-trade' (trade between countries in identical products) also raised awkward questions about the relevance of the classical models. This is considered in Section D below. Vernon's (1966) model (Vernon, 1979) reflects the tendency – well illustrated by the textile complex – for industries to go through a life cycle process in which the initial exporting nations (the innovators) eventually become net importers. In a sense this model evolved from work on the role of technological advantage in explaining trade patterns which need not be in any one direction because no one nation can be assumed to have a monopoly on innovation. Development theories focus on the observed imbalances in the geographical distribution of resources which are claimed to result in a typically

sequential process of economic development through which nations pass. They, therefore, bear some relationship to the product life cycle theory.

Similarly, theories of the new international division of labour concentrate upon the impact of wage differentials in promoting global shift of manufacturing activity.

The models proposed by Dunning (1988), Rugman (1980) and Porter (1998) all give more prominence to the role of company strategies. Dunning argued that trade and various forms of foreign production should simply be seen as alternative forms of international involvement – in terms of both ownership and location. International involvement is defined (Dunning, 1988, p. 4) as:

> 'the extent to which its own economic entities service foreign markets with goods ... irrespective of *where* the resources are *located* or *used* and the extent to which its own economic agents are supplied goods by foreign *owned* firms, irrespective of *where* the production is undertaken'.

Dunning's work anticipates a number of ideas propounded by Porter (1998, p. 18) in that he argued that the way in which a firm decides to:

> 'organise its value adding activities (i.e. the extent to which it produced in-house along the volume added chain rather than externalise its purchases) may well affect its capability in supplying the products it does produce ... similarly, the choice of location may dramatically effect its global costs of production and hence its ability to supply any particular market'.

Among the key issues in the eclectic model are those of ownership, locational and internal advantages which are defined as follows:

'O' advantages (or 'ownership' advantages)

These are ownership advantages (or advantages particular to a company) including: superior management, better quality products, a good set of relationships with the companies, brand names, favourable access to finance, patents, economies of scale.

'L' advantages (or 'location' advantages)

These only accrue in a particular place, e.g. resources, distances, exchange rates, government legislation, tariffs etc.

'I' advantages (or 'internal' advantages)

These advantages accrue when one company controls a set of activities internally rather than buying them in the market place, e.g. transactions costs, quality control, supplier relationships.

Dunning concluded that those companies which will prosper in the future will be those which succeed in creating 'O' advantages which strengthen their long term competitive position; are flexible enough to use a variety of systems to exploit these advantages, which may or may not involve international involvement and/or networks with other companies; and which are willing to locate value adding activities anywhere and in a variety of ownership modes.

Rugman (1980) argued that a theory of internationalisation can explain the involvement of firms in the international arena by concentrating on the ability of multinational enterprises to retain technological advantage internally by engaging in direct foreign investment as opposed to other methods such as licensing. In a similar vein Yau (1992) observed that small Asian multinationals tended to place more emphasis on production facilities than Western multinationals and concentrated on internalising activities by setting up their own production facilities in host countries.

Porter (1998) developed the 'Diamond Framework' reviewed in Chapter 1 to explain the alleged clustering of internationally successful companies within particular countries. It bears many relationships to the eclectic theory described above and incorporates both factor-related and strategic elements. The advantages of global operations (as a strategic option) also play a significant role in the Porter model, as will be described in Chapter 6.

It was determined in Chapter 1 that the 'Diamond Framework' would be utilised to inject an international dimension into the structural model of industrial performance. It can now be seen that this is but one of a number of competing models. Perdikis (1998) concluded his exhaustive study of alternative trade theories with the statement that:

> 'there is not at present a general theory in international trade. The existence of both inter- and intra-industry trade has complicated theoretical inquiry and the large number of factors that have been found to influence trade has rendered an empirical reconciliation impossible . . . Trade theory is clearly in disequilibrium'.

Therefore, given the unusually high proportion of total cost accounted for by labour costs in the clothing sector, it is appropriate and justifiable to place most emphasis on the special role of supply factors such as labour costs in this case. If a stance is taken that the most appropriate way to assess the relative merits of competing models is to compare their predictions it would quite legitimately be argued that virtually all the models listed above would predict that the apparel manufacturing sector would migrate to the developing, low cost countries. Therefore, it is felt to be a defensible position to adopt the Diamond Framework in subsequent analysis given that 'a consensus on an appropriate general trade model remains elusive' (Perdikis, 1998, p. 231).

D. Intra-industry trade

The concept of intra-industry or intra-trade has been alluded to above and it will be appropriate to deal with this concept in this chapter before a detailed examination of the UK apparel trade statistics is conducted in Chapter 5. Intra-trade is defined as (Begg, 1991, p. 538) 'trade in goods made within the same industry'. In brief, it refers to the fact that a high proportion of trade between countries consists of trade in 'identical' products, e.g. the UK both exports apparel to Germany and imports apparel from it, as will be seen in Chapter 5.

At a more general level it was seen in Chapter 3 that most apparel exports from developed countries go to other developed countries. Winterton (1996, p. 38) estimated that between 1980 and 1989 intra-EU trade as a proportion of all UK trade in apparel rose from 26.2% to 40.8%. On the basis of the data presented later in Tables 5.1 and 5.2 the corresponding figure for 1997 rose to 43% before falling back to 41% in 1999. Perdikis (1998, p. 149) estimates that in the mid-1980s, intra-trade accounted for about half of all world trade in manufactured goods. The existence of intra-trade poses great difficulties for models of trade and development which emphasise factor endowment as the basis for trade. Begg (1991, p. 589) suggests that the existence of intra-trade depends primarily upon the extent of branding within a generic product category and the impact of transport costs so that intra-trade is likely to be more prevalent between countries which are geographically adjacent to one another.

Caves (1981) concluded that 'there is much to applaud in intra-trade and little to deplore' in that it enriches consumer choice. In his view, intra-trade partly reflects the heterogeneity of the statistical categories used to generate trade statistics but he goes on to argue that its increased significance reflects the extent of product differentiation in the modern market place. Intra-trade will be encouraged where the produce represents a complex combination of many different features and if there are few economies of scale – both characteristics of the apparel market.

It has certainly always been recognised that (Perdikis, 1998, p. 172) product differentiation would play an important role in explaining intra-industry trade, although a variety of mechanisms have been proposed to activate this relationship. For example, it has been argued that consumers simply desire variety for its own sake or that they will try to purchase a favoured brand which comes closest to matching their ideal product. The first argument would produce a large number of producers and has been supported by the research. If the main difference between products was related to quality then some part of the variation could be related to factor endowment in that better quality products might be associated with capital-rich countries. Greenways (1999)

identifies intra-trade due to quality differences as vertical, and found that this type of intra-trade was the most important in trading links between the UK and the EU.

Perdikis (1998, p. 173) concludes that most of the research supports the 'so-called country characteristics and institutional explanations of intra-industry trade'. The concept of intra-trade is not discussed by Porter, but does not pose as great a problem to the Diamond Framework as it does to other models because the Framework actively encourages companies to seek out opportunities to operate all elements (not just assembly) of the production value chain in a range of locations (countries) as a consequence of which it might first become more difficult to tell exactly where any given item was in fact made and, second, because it would become more probable that an interchange of basically identical (generic) products will occur between broadly similar countries. In the case of the relocation of basic, labour intensive, assembly type operations, on the other hand, intra-trade would not occur as often and trade would, in contrast, be reflected in flows from developing to developed areas.

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